69-81

Restoration Advisory Board
Meeting Agenda

January 20, 1998

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom Army Co-chair
7:15	**Review/Discuss Results of the November Survey** Ms. Janet R. Fallo Project Engineer, U.S. Army Corps of Engineers, NY District
7:35	**Open Discussion** -Open Burning Grounds Proposed Remedial Action Plan -Suggestions on improving the RAB -Upcoming agenda topics
8:00	**Update on Fieldwork at Sites 59 and 71** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
8:30	**Adjourn**

Janet R. Fallo
January 20, 1998

Restoration Advisory Board Survey Results

- Ten surveys (about half) were returned so far. Blank surveys will be available at the RAB meetings. If you have not filled one out yet, please do so.

- RAB members are most concerned with risk for all health effects, environmental clean-up, drinking water quality, and base reuse.

- Presentations most beneficial to the RAB included: Overview of the Environmental Clean-up Process, Local Redevelopment Authority (LRA) updates, Breast Cancer Incidence in Seneca County, and Open Burning Grounds Proposed Remedial Action Plan (PRAP) presentations.

- On the positive side:
  - 50% to 70% responded they were pleased with the meeting format, how information was being communicated, people involved, and concerns were being addressed.
  - Presentations are generally good (but get lost in acronyms).
  - We have had candid discussions (except for nuclear weapons).
  - The majority said the RAB met their expectations (some mentioned their expectations were low, that is why it met their expectations).

- On the negative side:
  - Meetings run too long and too late, should last no more than 1½ hours.
  - Meetings are too frequent, which leads to low attendance and repetition of topics and questions (9-10 meetings per year would suffice).
  - It is not clear how agenda is set.
  - Agenda topics are scraped from the bottom of the barrel; less frequent meetings would assure the most interesting topics would be presented.
  - Details are stressed- background and explanations are minimized; there is a lack of connection between details and general issues.
  - Rows of seats behind tables does not facilitate discussion and wide participation.
  - It is not clear that the RAB has a productive role; work is done regardless of RAB input.
  - Army makes decisions before presenting issues to the RAB.
  - RAB members do not have enough communication with each other.
  - Classified nature of some data does not allow us to pursue concerns.
  - The information repository has too much information to digest and it is hard to access.
  - The Army has too many personnel at meetings; community intimidated by overwhelming presence.

(Over)

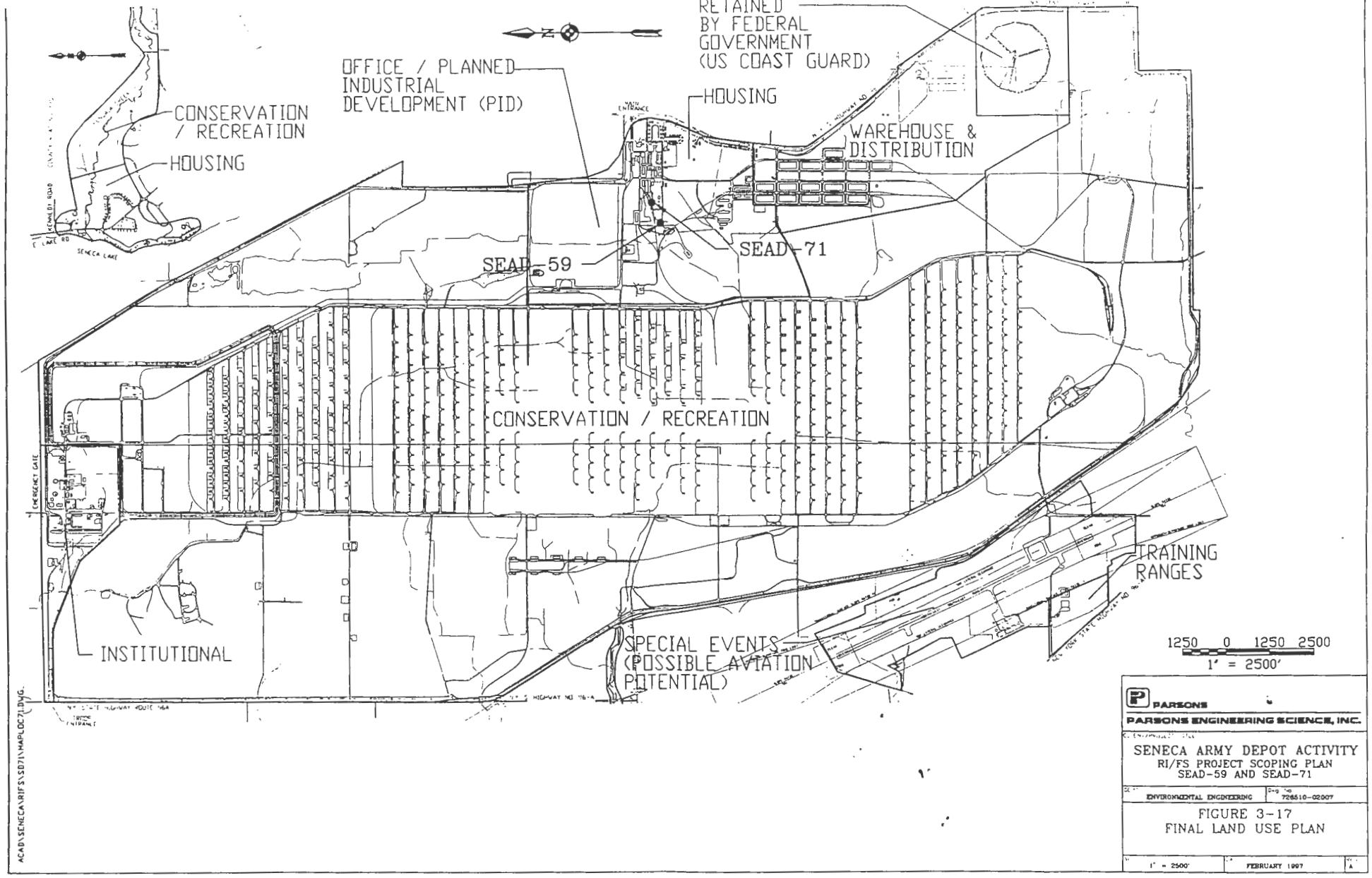
- Suggestions included:
  - Decision making meetings should be open to the RAB as observers.
  - Change format to include more discussions earlier in the meeting.
  - Use suggestion box.
  - Use subcommittees run by appropriate technical person to meet a few times a year. This would encourage greater participation amongst RAB members.
  - Have more discussion amongst RAB members- 30 min in small groups.
  - Explain how civilian agencies work with military and private companies; federal public health oversight is unclear.
  - Visiting the cleanup sites.
  - RAB should disseminate information to the public to a greater degree.
  - Provide more information on actual cleanup work done and less technical data.

Presentation to the RAB
January 20, 1998

Update on the Fill Area and Paint Disposal Sites, (SEAD-59 and SEAD-71),

Michael Duchesneau, P. E.

PARSONS ENGINEERING SCIENCE



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PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS PROJECT SCOPING PLAN
SEAD-59 AND SEAD-71

ENVIRONMENTAL ENGINEERING | D-9 No. 726510-02007

FIGURE 3-17
FINAL LAND USE PLAN

1" = 2500' | FEBRUARY 1997 | A

Background at SEAD-59 and SEAD-71

Disposal Areas for Construction Debris and Oily Sludges

Both are Solid Waste Management Units (SWMU)s

- *Expanded Site Inspections (ESI)s*
- *Combined as One Operable Unit*

Summary of the Expanded Site Inspections (ESI)s at SEAD-59 and SEAD-71

PARSONS ENGINEERING SCIENCE

Site Geology at SEAD-59 and 71

Fill Thickness range from 2 to 10 feet

Glacial Till Thicknesses range from 3 to 11 feet

- *Weathered Shale Thicknesses range from none present to 2.8 feet*
- *Competent Shale*

SI Investigation at SEAD-59 and 71, Field Tasks Summary

- *EM-31 and Seismic Geophysical Surveys*
- *5 Test Pits (SEAD-59); 2 Test Pits (SEAD-71)*
- *5 Soil Borings(SEAD-59)*
- *3 Groundwater Monitoring Wells at Each Site*

ESI Soil Sampling Summary at SEAD-59 and 71

- *Volatiles (BTEX) (SEAD-59)*
  - *Detected in 4 of 20 Samples, 1 or 2 above TAGM*
- *Semi-Volatiles (PAH) Both Sites*
  - *Detected in Many Samples; Above TAGMs*
- *Total Petroleum Hydrocarbons (TPH) (SEAD-59)*
  - *Detected in 18 of 20 Samples*

roundwater at SEAD-59 and 71

- TPH Detected in 2 of 3 Wells, SEAD-59
  - No VOCs; No Semi-Volatiles
- Water Table Thickness is Shallow Ranging from 1.4 to 7.2 feet, depending upon the season

Conceptual Site Model at SEAD-59 and SEAD-71

- *Petroleum Residues Present*
- *Risk from Semi-Volatile Organics in Soil*
- *Ingestion and Dermal Exposure to Soil*
- *Potential for Migration from Erosion and Runoff*
- *Small Potential for Groundwater Impacts*
  - *BTEX*

Update on the Remedial Investigation (RI) at SEAD-59 and SEAD-71

PARSONS ENGINEERING SCIENCE

RI at SEAD-59 and 71, Field Tasks Completed

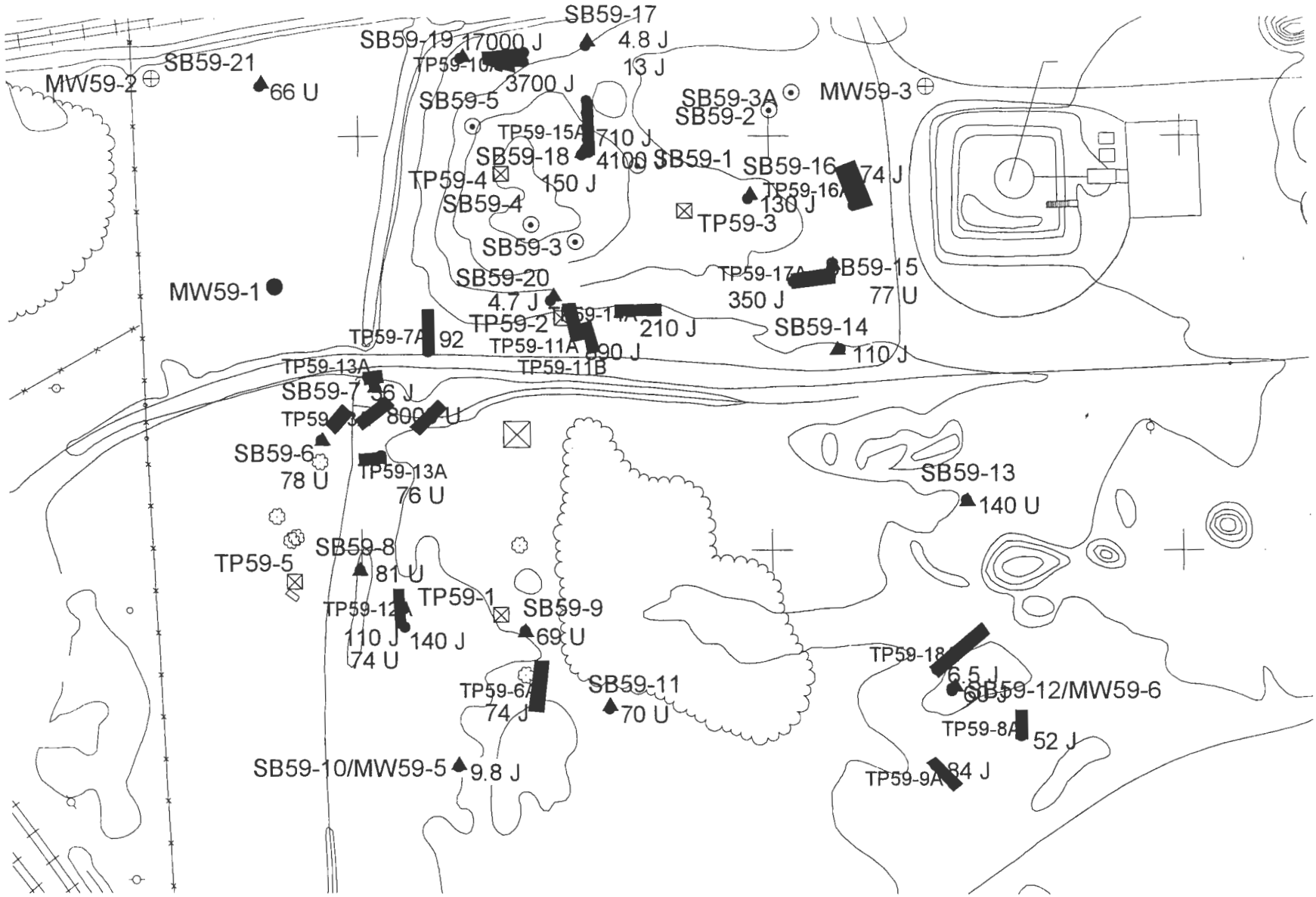
- *Additional EM-31 and Seismic Geophysical Surveys*
- *Soil Gas Survey*
- *Field Screening (BTEX and PAHs)*
- *9 Test Pits (SEAD-59); 8 Test Pits (SEAD-71)*
- *9 Borings(SEAD-59); 11 at SEAD-71*
- *20 Surface Soil Samples at SEAD-71*

RI at SEAD-59 and 71, Field Tasks Summary (On Hold)

- *9 Groundwater Monitoring Wells at SEAD-59*
- *13 Surface Water/Sediment (SEAD-59)*
- *5 Groundwater Monitoring Wells at SEAD-71*
- *Ecological and Archeological Survey*

RI Soil Sampling Summary at SEAD-59 and 71

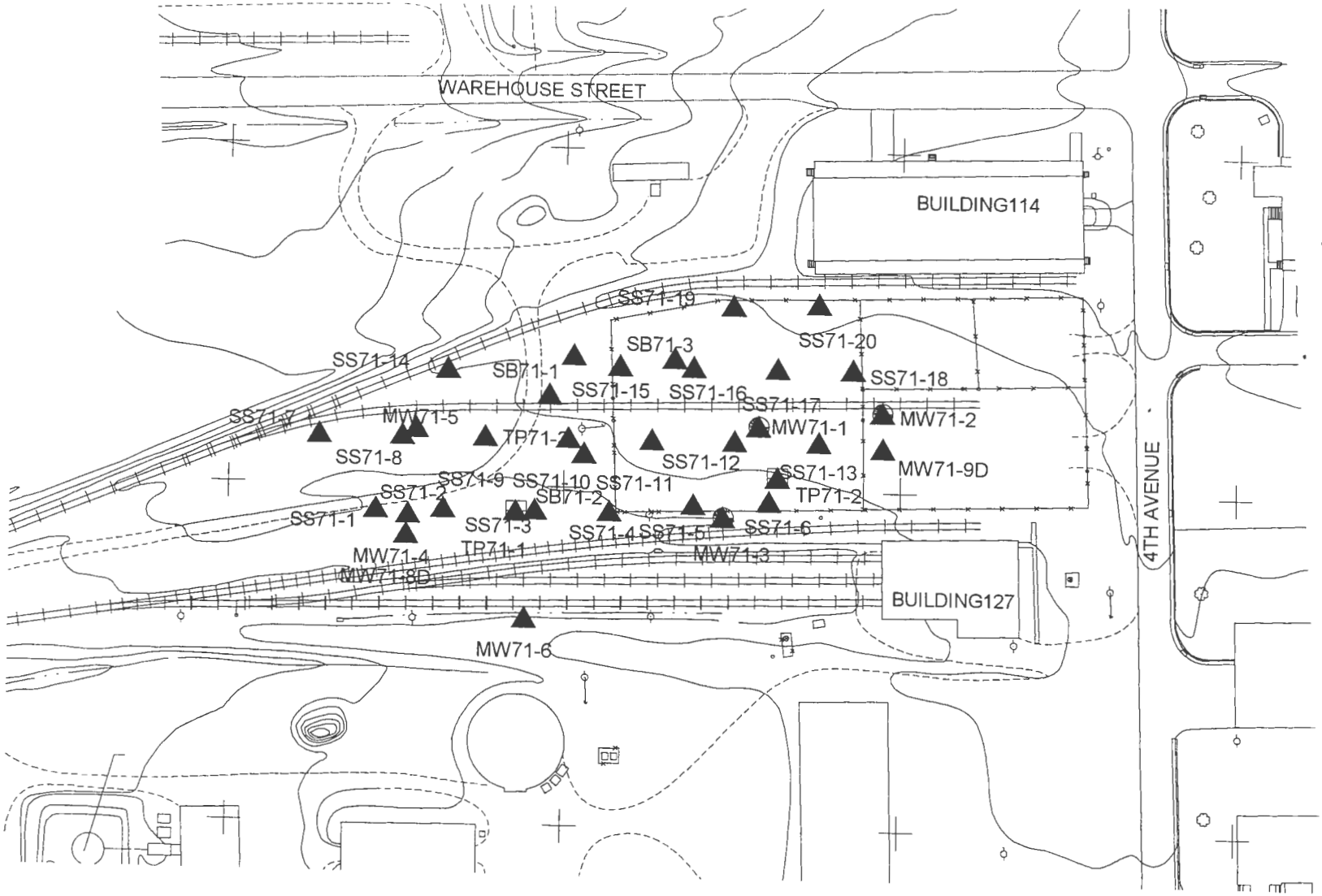
- *Delineated Fill Areas with Geophysics*
- *Soil Screening Useful*
- *Chemical Data Similar to ESI Data*
- *Semi-Volatiles (PAH) Both Sites*
  - *Detected at Fill Areas*
- *Awaiting Receipt of all Remaining Data*



NOTE: Dibenz(a,h)anthracene concentrations in soil

SENECA ARMY DEPOT

SEAD 59
REMEDIAL INVESTIGATION
SAMPLE LOCATIONS



SENECA ARMY DEPOT

SEAD 71
REMEDIAL INVESTIGATION
SAMPLE LOCATIONS

MINUTES
RESTORATION ADVISORY BOARD
JANUARY 20, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation

Government RAB Members Not Present:

Carla Struble, U.S. Environmental Protection Agency (excused)

Community RAB Members Present:

Brian Dombrowski, Frank Ives, Ken Reimer, Henry Van Ness, David Wagner,

Community RAB Members Not Present:

Dick Durst/Community Co-Chair,(excused), Anne Herman(excused), Pat Jones,(excused), Harold Kugelmass (excused), Richard Lewis, Russell Miller(excused), Lucinda Sangree(excused), Carmen Serrett

Environmental Support Personnel Present:

John Buck, U.S. Army Environmental Center
Michael Duchesneau, Parsons Engineering Science, Inc.
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Heather Clark, Community Member
Steve Penningroth, Ithaca College
John Confer, Ithaca College
Neil Chaffie, Ovid Gazette

2. LTC Olson provided the opening remarks for the meeting. He then went around the room and asked for introductions of all in attendance.

3. Stephen Absolom, the Army Co-Chair, then welcomed members and support staff to the January Restoration Advisory Board and outlined the evening's agenda.

4. Minutes from the October 1997 meeting were signed by Stephen Absolom. Dick Durst was not present and will sign them at the next meeting to be entered into the record.

5. Ms. Janet Fallo, Project Engineer, USA COE, NY District, Seneca Resident Office, gave a presentation on the results of the RAB survey that was mailed out to all members back in November. Its purpose was to help Heather Clark, a Cornell student write her thesis. The other intent was to find out ways to improve the RAB. Ten out of 22 surveys were returned. Some comments from surveys are summarized in attached handout. Discussion took place on the following:

- meetings run too long - maybe shorten presentations. Should we stick to two presentations or cut it down to one?

- Comment was made that initially, presentations were to educate anyone of the activities and the process. Has that been accomplished? There doesn't seem to be enough input by RAB members. We thought that we were supposed to advise on this. There still seems to be a learning process on the RAB members. Have we learned enough?

- Janet would like to put together a RAB Member training booklet. It would have basic information about the program. It could have a directory of the acronyms, basics, etc. It would also help with new members as well as the old members. It would probably be about ten to 15 pages of basic information about the program. She would draft it up and send out to RAB members to get their comments.

- Another comment was that meetings are too frequent. Steve said we should stay with the meeting one a month for now. It was then decided by the group that we would keep it the same until it is determined we need to change it.

- It was also agreed upon that it would be a good idea to come up with the agenda for the next meetings topics at the current meeting.

Some questions that were generated:

QUESTION: How can we determine as RAB members that what are doing and how are we helping. Should information that is put out at meetings information to be decided upon or should it educate us.

ANSWER: We are trying to accomplish both at these meetings.

QUESTION: We are an advisory board but we just sit and listen with other people in the crowd. We sit here and listen and wonder why we are here. Make a relationship for the average person on the presentations.

ANSWER: The Commander interjected by saying we are not a decision making body. You are here as community representatives and get your input from the community. If you have concerns from the community, raise them at the RAB meetings.

QUESTION: Is RAB eligible under SARA (Superfund Amendments and Reauthorization Act) to hire a technical consultant using the TAG (Technical Assistance Grant) program. Then you could apply to EPA for 50 thousand dollars to hire a technical consultant that would do presentations.

ANSWER: TAG is an EPA program and is available through application with the EPA. Information on TAG is available in the Information Repository. John Buck said that grants are going to be made available by the Army for specific efforts. He will give a briefing on Technical Assistance for Public Participation (TAPP) when the Army finalizes requirements for the application.

- One member suggested the relevance of BCT meetings to RAB gives a sense of productivity. How should we structure our group. Develop subcommittees. Have presentations that present more information and less technical data. Subcommittees summarize information and present document, summarize, and get information without oral presentations, perhaps limit length of meetings.

- One member suggested that maybe once or twice a year RAB members meet amongst themselves to get to know each other, hash out concerns without offending Army personnel

- Janet mentioned that we could let them use facilities or maybe they want to meet somewhere else.

- Suggested that maybe could do a half-hour before meeting with community RAB members only. Then get on with the regular meeting.

- It was decided to try this for one hour with the next meeting. Dr Durst would be there for that. Then the Army would follow with the regular RAB meeting and only have one presentation.

6. Janet highlighted the OBG public meeting for those that couldn't make it. It was held at the Seneca County Office Building on December 17. It was a posterboard session with no formal presentation. No comments were made that evening. We did get two letters addressing concerns. These letters will be responded to in ROD.

7. Janet asked for upcoming topics. LTC Olson suggested an overview of the big picture for 1998, i.e., what sites are ongoing and are planned to be worked on.

8. Heather Clark mentioned that there is an Internet connection listed to find out more about RAB. She will provide Janet with that address. (This information is enclosed with these minutes). It is a good way to keep track of the national RAB issues.

9. Dan Geraghty reminded the RAB members about the Information Repository. It would be a good idea to take a look at what is there.

10. Mike Duchesneau followed with a presentation to update the group on fieldwork being performed at the Fill Area and Paint Disposal Sites, SEAD-59 and SEAD-71. Mike said we are now getting results back to tell what has been found out there.

Questions that were generated:

QUESTION: Explain test pits. What are they and define?

ANSWER: We go out with backhoe and dig hole, scan, and sample. In fill areas - drill bit or auger would bore through contaminants. Test pits are more sensitive to determine problems.

QUESTION: Is this area close to wildlife?

ANSWER: No, other side. Not near duck pond.

QUESTION: Are you satisfied you are able to determine size of contamination area or are you still expanding SEAD 59.

ANSWER: Right now we have enough information. We are still waiting for the data for SEAD 71.

QUESTION: Sampling frequency - random grid too expensive. How do you get around that?

ANSWER: Magnetometer surveys help locate areas on the site. They tell where drums are. Seismic survey will determine thickness of soil down to bedrock. Also done is soil gas survey. These methods will aid in determining where problem areas are.

QUESTION: With potential of sludge disposal, how do you do geophysical work.

ANSWER: Raw sludge - geophysics won't pick up, soil gas won't pick up, test pits won't pick up. Historical data is used to select these areas. Geophysical surveys are ideal for disturbed soil. For the scenario where sludge is dumped on soil, you would more likely be able to see sludge stain on top. Geophysical will pick up as a disturbed area. The potential for unknowns exists. This is why the federal government guarantees in the deed that if someone finds something that the Army left, they will come back and remediate the area.

QUESTION: Will this removal be done in 98?

ANSWER: Not this FY.

QUESTION: Will you bring material to replace excavated material?

ANSWER: Can't answer that at this time.

QUESTION: What is an ecological study?

ANWER: It is a terrestrial study of critters, moles, birds, and aquatic interaction. Look at habitat, vegetation species, take information, use ecological risk assessment.

11. There being no further business, the meeting was adjourned at 9:15 p.m. The next RAB meeting will be held on 17 February with the first hour a meeting with RAB community members only.

Respectfully submitted,

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Restoration Advisory Board
Meeting Agenda

February 17, 1998
NCO Club

7:00	**RAB Members only** A chance for the community members to talk about issues and meet without government personnel present
8:00	**Open Discussion**
8:30	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
8:35	**Clean-up Overview- Where we are now and where we are headed** Mr. Stephen M. Absolom Army Co-chair
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
FEBRUARY 17, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Dick Durst/Community Co-Chair
Brian Dombrowski, Pat Jones, Harold Kugelmass, Russell Miller, Ken Reimer

Community RAB Members Not Present:

Anne Herman (excused), Frank Ives, Richard Lewis, Lucinda Sangree(excused), Carmen Serrett, Henry Van Ness (excused), David Wagner (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Keith Hoddinott, USACHPPM
Joanne Ogden, Public Affairs Ofcr/Legal
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):
Drew Bryson, EOD Technology
Heather Clark, Community Member
Neil Chaffie, Ovid Gazette
Antje Baumner

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the February Restoration Advisory Board and outlined the evening's agenda. He then went around the room and asked for introductions of all in attendance.

3. The first hour of the evening was a meeting with community RAB members only without the government members present. Dr. Durst felt it was a positive meeting. They would like to continue that on a semi-regular basis either before the RAB meetings or on alternate months. Dr. Durst summarized the issues that came about in their meeting. They are:

- The community members would like to hear from representatives of DEC/EPA, on i.e., how operation is going, and projects under discussion such as those being discussed at BCT meetings. They would also like to hear from the New York Department of Health.

- Would like to hear a presentation from someone from Seneca Meadows Landfill, i.e., how the landfill is treated, etc,

- In the area of community relations, maybe having the minutes from the meeting summarized and published in the newspaper. You may even include the names of the RAB members as people to contact with their concerns.

- Members would like to look into the TAPP Grants as a possibility for members to hire a consultant to review documentation to utilize since they don't really have the time or expertise to get into the details.

Some questions that were generated:

QUESTION: How do TAPP grants work?

ANSWER: It is a new program that allows for RAB members to apply for a consultant to provide advice on specific projects. It is not for an overall program review. You would have to decide on what specific projects you want. There are specific guidelines. Another alternative is TAG. That may be more in line with what you have discussed you need. Carla Struble will send some more information on this and it will be forwarded in the next mailing to RAB members.

QUESTION: In regards to giving out names of RAB members, would RAB members be willing to give out phone numbers, addresses.

ANSWER: This would be addressed in next meeting when there are more members present.

4. Minutes from the October 1997 meeting and the January 1998 meeting were signed and entered into the record. A change was made to page 4 of the January minutes, which will be included in the final signed copy, sent out to members. (TAG is EPA program. TAPP is the Department of Defense (DOD) program. They were reversed in the minutes).

5. Janet Fallo mentioned she has been working on the DRAFT guidebook for the RAB members. We will be sending it to RAB members for comments, suggestions etc., in the next mailing.

6. Next on the agenda, Stephen Absolom, Army Co-Chair, gave an overview on "The Big Picture" of all the projects that are on-going or planned for Fiscal Year 1998. The institutional area is Priority 1. The family housing area is now Priority 1. There are 51 sites. Right now we have approved 12.8 million. We had originally requested 18 million. We have a lot of work going on. A summary of the status of the projects is enclosed to these minutes. The handout provided at the meeting is also enclosed.

7. Steve opened the meeting for questions.

QUESTION: Dr. Durst wondered of the possibility of looking for site off base for meeting. Would that be viable.?

ANSWER: Yes. That is something we could look into.

8. Steve emphasized that we would be looking for new members. If members didn't show up or call, it is an unexcused absence. Wanted to remind members to call if you can't make the meeting.

9. Some suggestions for the next meeting's agenda items:

- State or EPA discuss views on process.

- Presentation by Mr. John Buck, AEC on TAPP on what it means, how do we apply for it, etc.

- Presentation by representative from Seneca Meadows Landfill.

10. There being no further business, the meeting was adjourned at 9:15 p.m. The next RAB meeting will be held on 17 March 1998 at 7:00 p.m. at the NCO Club. There will not be a separate meeting for community members for the March meeting.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

original

RAB BRIEFING
FY 98 BIG PICTURE
BY LAND USE PARCELS

PLANNED INDUSTRIAL DEVELOPMENT AREA – PRIORITY 4

SEAD 59 & SEAD 71: PAINT DISPOSAL AREAS

Phase 1 of the remedial investigation is ongoing. Results of the fieldwork are expected to reveal whether a removal action at this site can be considered. The decision on applicability of a removal action is expected by then end of the FY. The next step will be a removal action or phase 2 RI effort to complete the investigation, perform the risk assessment, and determine the feasibility of alternatives.

SEAD 16: ABANDONED DEACTIVATION FURNACES
SEAD 17: DEACTIVATION FURNACE

These units were used to destroy small arms ammunition.
The remedial investigation is under review as a final document. Discussion centers around the applicability of a child care center on these particular sites. Also in discussion is the applicability of ground water as an exposure media and the need to perform a residential risk assessment for a site identified as an industrial setting future use. The draft feasibility study is written but can not be commented on until resolution of the RI issues. The proposed alternative is expected to be determined this FY and the record of decision written.

The deactivation furnace at SEAD 17 is being reviewed for consideration as a low temperature thermal desorbtion unit to be used to burn dirt at SENECA ARMY DEPOT. If the regulators approve the concept, a pilot project to burn dirt will begin this summer. This effort is expected to save the cost of mobilization and de-moblizing a unit comparable to this furnace.

SEAD 25 FIRE DEMONSTRATION AREA:

This site was used to demonstrate the installation fire fighting capability.
The remedial investigation is draft final and is being reviewed by the regulators. The draft feasibility study is under review by the regulators. The next stage of effort will be the preparation of the proposed remedial action plan and the record of decision. A treatability study is being considered to determine if bioventing is a viable treatment process for this site.

This site is also a candidate to treatment of soil through the deactivation furnace if it proves out to be a successful lttd.

SEAD 67: DUMPSITE EAST OF STP4

This site is identified as a location where unknown material was dumped. The site investigation revealed that the soil contaminated with metals and the contaminants were very localized.
This site is scheduled to have a removal action taken this FY. The action will consist of excavation of the soil and land filling. Approximately 600 cyds of soil require removal. Note: This is a non-time critical removal and an Engineering Evaluation and Cost Analysis is required as well as public involvement.

SEAD 66: PESTICIDE STORAGE AREA

This site was used by the Army to store and mix pesticides for application on the installation.
This site is schedule for a site investigation this spring to determine the extent of contamination should it be found to exist. The Army does not have any sampling data on this site.

FAMILY HOUSING PRIORITY 2

SEAD 119: EBS SITE

Bldg 2409 lift station had a pump failure and the station overflowed. This station services the O Club and 5 homes. Investigation for potential contamination is to be performed this spring.

Bldgs 208 & 209 have Asbestos on piping that is an eminent health hazard and must be abated prior to transfer. Abatement is schedule for spring.

AIRFIELD - PRIORITY 3

SEAD 122: EBS SITE

a. Skeet/trap range
b. Bldg 2302 small arms range
c. Storage unit by 2311
d. Hot pad fuel spill
e. Deicing planes

SEAD 63: MISCELLANEOUS COMPONENTS BURIAL SITE

This site was use by the army to bury classified components.
This site was originally intended to have a Remedial investigation performed however after a further review of the existing data, a removal action to excavate the components, review the potential for contamination, and dispose of them IAW today's standards has been determined appropriate before any study is performed. The removal action is expected to be accomplished this FY. Upon completion of the action a determination as to "what's next" will be made.

Note: This is a non time critical removal and an Engineering Evaluation and Cost Analysis is required as well as public involvement.

SEAD 120: EBS SITE – CONSERVATION AREA

a. "50 AREA" dumping area
b. OVID road small arms range
c. BLDG 813/817 paint /solvent disposal areas (part of SEAD 12)
d. MP refueling island
e. BLDG 2131 potential DDT disposal site
f. Munitions burials sites, SE of main Depot
g. Mounds at Duck pond
h. Bldg 810
i. Bldg 819, A0101, & A0102

These sites were identified during the EBS as potential areas of contamination and require a site investigation.

UNDERGROUND STORAGE TANKS

PUBLIC/ INDUSTRIAL BLDGS
Removed –
Remaining to be removed-

FAMILY HOUSING
Removed-
Remaining to be removed-

SEAD 11: OLDLANDFILL
SEAD 64D: OLD CONSTRUCTION DEBRIS LANDFILL

Construction debris and other unknown items were dumped at these sites.
A site investigation conducted reveal contamination and that a Remedial Investigation was warranted to determine the nature and extent of the contamination. This study is schedule to start the FY.

SEAD 13: INHIBITED RED FUMING NITRIC ACID (IRFNA)

This site was used by the army to neutralize IRFNA, a liquid propellant constituent. The acid was poured into a trench fill with limestone and water.
A site investigation conducted reveal contamination and that a Remedial Investigation was warranted to determine the nature and extent of the contamination. This study is schedule to start the FY.

SEAD 4: MUNITIONS WASHOUT FACILITY

This site was used by the army to wash out shell casing to remove explosives. The wash water went to a septic tank and leach field. The septic tank and leach field has not been located.
A site investigation conducted reveal contamination and that a Remedial Investigation was warranted to determine the nature and extent of the contamination. This study is schedule to start the FY.

SEAD 12: RADIATION SITE

This site consists of the Former Special Weapons storage area. There are two areas where radioactive material was buried in pits and where the potential of radiological contamination could have been captured in a storage tank. Both these areas were surveyed in mid 1980s but not to the same level of current standards.
This site requires a remedial investigation. The workplan for the investigation has been review by the regulator and is being revised by the Army. There are several issues that are being address through conference calls. There has been some geophysical work done. Field work for the investigation is expected to begin this summer.

SEAD 64a: Old Construction Debris Landfill

Construction debris and other unknown items were dumped at this site.
A site investigation conducted reveal contamination and that a Remedial Investigation was warranted to determine the nature and extent of the contamination. This study is schedule to start the FY.

SEAD 121 EBS SITE – INDUSTRAIL

b. Bldg 325 PCB oil spill
This site is planned to have a site investigation performed to determine of there has been a release and what the appropriate subsequent action should be if a release occurred.

SEAD 50 TANK FARM STORAGE
SEAD 54 ASBESTOS STORAGE

These sites are where the Army stored material in above ground steel tanks. Movement of the material resulted in contamination of the soil.
These two sites are scheduled to have a removal action taken this FY. The action will consist of excavation and disposal by land filling the soil, which are contaminated with heavy metals. The work will be accomplished with the SEAD labor force. Approximately 3800cyds of soil require removal.

Note: This is a non time critical removal and an Engineering Evaluation and Cost Analysis is required as well as public involvement.

CONSERVATION AREA

SEAD 23: OPEN BURNING GROUNDS

The army used this site to burning propellant, explosives and pyrotechnics to destroy unstable items.
The record of the decision has been reviewed by the regulators and is under revision by the Army. The remedial design for the project is underway. The remedial action for this site is expected this FY.

INSTITUTIONAL AREA - PRIORITY 1

SEAD 41: Boiler blowdown pit bldg 718

This site consists of contamination resulting in the blow down of the central boilers, which was discharged to the ground.
This site is one of 4 boiler blow down pits that are planed to have a removal action performed this year. The contamination at this site makes it a candidate for the Deact furnace pilot project. The dirt could be burn in the lttd to remove the contamination. The alternative will be to land fill the material. There is approximately 15 cyd of material to be treated.
Note: This is a non time critical removal and an Engineering Evaluation and Cost Analysis is required as well as public involvement.

SEAD 123 EBS SITE – INSITUTIONAL

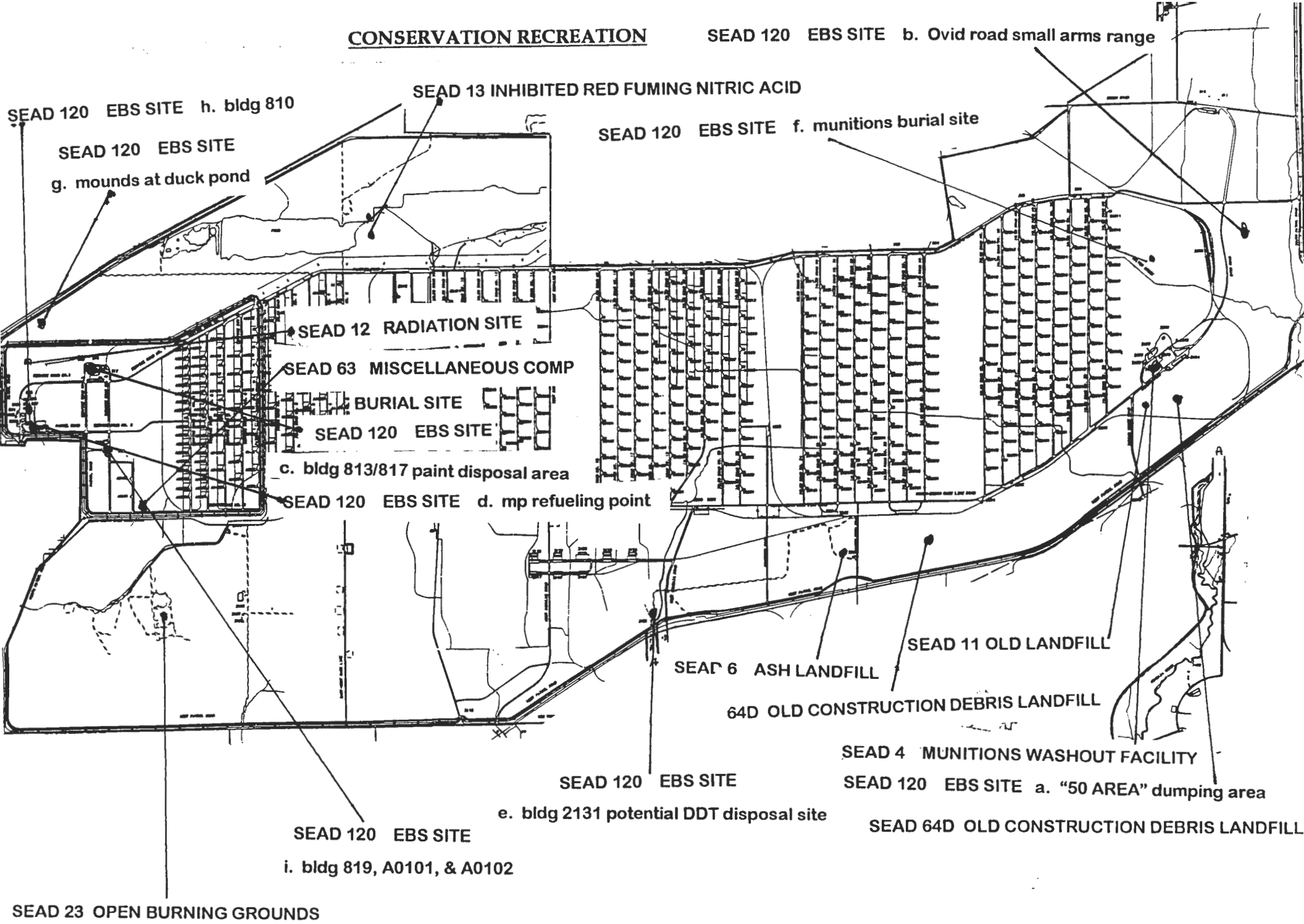
a. Bldg 744 Indoor firing range
b. Bldg 716/717 petroleum release
c. Bldg 747 haz mat release
d. Area west of Bldg 715
e. Rumored DDT can burial site
f. Burial site mound north of Post 3

These sites were identified during the EBS as potential areas of contamination and require a site investigation.

WAREHOUSE AREA

SEAD 26: FIRE TRAINING SITE

This area was used by the installation fire department to train fighting fires. The resultant contamination is a result of burning petroleum products.
The remedial investigation is draft final and is being reviewed by the regulators. The draft feasibility study is under review by the regulators. The next stage of effort will be the preparation of the proposed remedial action plan and the record of decision.


CONSERVATION RECREATION
SEAD 120 EBS SITE b. Ovid road small arms range
SEAD 13 INHIBITED RED FUMING NITRIC ACID
SEAD 120 EBS SITE h. bldg 810
SEAD 120 EBS SITE f. munitions burial site
SEAD 120 EBS SITE
g. mounds at duck pond
SEAD 12 RADIATION SITE
SEAD 63 MISCELLANEOUS COMP
BURIAL SITE
SEAD 120 EBS SITE
c. bldg 813/817 paint disposal area
SEAD 120 EBS SITE d. mp refueling point
SEAD 11 OLD LANDFILL
SEAD 6 ASH LANDFILL
64D OLD CONSTRUCTION DEBRIS LANDFILL
SEAD 4 MUNITIONS WASHOUT FACILITY
SEAD 120 EBS SITE
SEAD 120 EBS SITE a. "50 AREA" dumping area
e. bldg 2131 potential DDT disposal site
SEAD 64D OLD CONSTRUCTION DEBRIS LANDFILL
SEAD 120 EBS SITE
i. bldg 819, A0101, & A0102
SEAD 23 OPEN BURNING GROUNDS

MINUTES
RESTORATION ADVISORY BOARD
JANUARY 20, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation

Government RAB Members Not Present:

Carla Struble, U.S. Environmental Protection Agency (excused)

Community RAB Members Present:

Brian Dombrowski, Frank Ives, Ken Reimer, Henry Van Ness, David Wagner,

Community RAB Members Not Present:

Dick Durst/Community Co-Chair,(excused), Anne Herman(excused), Pat Jones,(excused), Harold Kugelmass (excused), Richard Lewis, Russell Miller(excused), Lucinda Sangree(excused), Carmen Serrett

Environmental Support Personnel Present:

John Buck, U.S. Army Environmental Center
Michael Duchesneau, Parsons Engineering Science, Inc.
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Heather Clark, Community Member
Steve Penningroth, Ithaca College
John Confer, Ithaca College
Neil Chaffie, Ovid Gazette

2. LTC Olson provided the opening remarks for the meeting. He then went around the room and asked for introductions of all in attendance.

3. Stephen Absolom, the Army Co-Chair, then welcomed members and support staff to the January Restoration Advisory Board and outlined the evening's agenda.

4. Minutes from the October 1997 meeting were signed by Stephen Absolom. Dick Durst was not present and will sign them at the next meeting to be entered into the record.

5. Ms. Janet Fallo, Project Engineer, USA COE, NY District, Seneca Resident Office, gave a presentation on the results of the RAB survey that was mailed out to all members back in November. Its purpose was to help Heather Clark, a Cornell student write her thesis. The other intent was to find out ways to improve the RAB. Ten out of 22 surveys were returned. Some comments from surveys are summarized in attached handout. Discussion took place on the following:

- meetings run too long - maybe shorten presentations. Should we stick to two presentations or cut it down to one?

- Comment was made that initially, presentations were to educate anyone of the activities and the process. Has that been accomplished? There doesn't seem to be enough input by RAB members. We thought that we were supposed to advise on this. There still seems to be a learning process on the RAB members. Have we learned enough?

- Janet would like to put together a RAB Member training booklet. It would have basic information about the program. It could have a directory of the acronyms, basics, etc. It would also help with new members as well as the old members. It would probably be about ten to 15 pages of basic information about the program. She would draft it up and send out to RAB members to get their comments.

- Another comment was that meetings are too frequent. Steve said we should stay with the meeting one a month for now. It was then decided by the group that we would keep it the same until it is determined we need to change it.

- It was also agreed upon that it would be a good idea to come up with the agenda for the next meetings topics at the current meeting.

Some questions that were generated:

QUESTION: How can we determine as RAB members that what are doing and how are we helping. Should information that is put out at meetings information to be decided upon or should it educate us.

ANSWER: We are trying to accomplish both at these meetings.

QUESTION: We are an advisory board but we just sit and listen with other people in the crowd. We sit here and listen and wonder why we are here. Make a relationship for the average person on the presentations.

ANSWER: The Commander interjected by saying we are not a decision making body. You are here as community representatives and get your input from the community. If you have concerns from the community, raise them at the RAB meetings.

QUESTION: Is RAB eligible under SARA (Superfund Amendments and Reauthorization Act) to hire a technical consultant using the TAG (Technical Assistance Grant) program. Then you could apply to EPA for 50 thousand dollars to hire a technical consultant that would do presentations.

ANSWER: TAG is an EPA program and is available through application with the EPA. Information on TAG is available in the Information Repository. John Buck said that grants are going to be made available by the Army for specific efforts. He will give a briefing on Technical Assistance for Public Participation (TAPP) when the Army finalizes requirements for the application.

- One member suggested the relevance of BCT meetings to RAB gives a sense of productivity. How should we structure our group. Develop subcommittees. Have presentations that present more information and less technical data. Subcommittees summarize information and present document, summarize, and get information without oral presentations, perhaps limit length of meetings.

- One member suggested that maybe once or twice a year RAB members meet amongst themselves to get to know each other, hash out concerns without offending Army personnel

- Janet mentioned that we could let them use facilities or maybe they want to meet somewhere else.

- Suggested that maybe could do a half-hour before meeting with community RAB members only. Then get on with the regular meeting.

- It was decided to try this for one hour with the next meeting. Dr Durst would be there for that. Then the Army would follow with the regular RAB meeting and only have one presentation.

6. Janet highlighted the OBG public meeting for those that couldn't make it. It was held at the Seneca County Office Building on December 17. It was a posterboard session with no formal presentation. No comments were made that evening. We did get two letters addressing concerns. These letters will be responded to in ROD.

7. Janet asked for upcoming topics. LTC Olson suggested an overview of the big picture for 1998, i.e., what sites are ongoing and are planned to be worked on.

8. Heather Clark mentioned that there is an Internet connection listed to find out more about RAB. She will provide Janet with that address. (This information is enclosed with these minutes). It is a good way to keep track of the national RAB issues.

9. Dan Geraghty reminded the RAB members about the Information Repository. It would be a good idea to take a look at what is there.

10. Mike Duchesneau followed with a presentation to update the group on fieldwork being performed at the Fill Area and Paint Disposal Sites, SEAD-59 and SEAD-71. Mike said we are now getting results back to tell what has been found out there.

Questions that were generated:

QUESTION: Explain test pits. What are they and define?

ANSWER: We go out with backhoe and dig hole, scan, and sample. In fill areas - drill bit or auger would bore through contaminants. Test pits are more sensitive to determine problems.

QUESTION: Is this area close to wildlife?

ANSWER: No, other side. Not near duck pond.

QUESTION: Are you satisfied you are able to determine size of contamination area or are you still expanding SEAD 59.

ANSWER: Right now we have enough information. We are still waiting for the data for SEAD 71.

QUESTION: Sampling frequency - random grid too expensive. How do you get around that?

ANSWER: Magnetometer surveys help locate areas on the site. They tell where drums are. Seismic survey will determine thickness of soil down to bedrock. Also done is soil gas survey. These methods will aid in determining where problem areas are.

QUESTION: With potential of sludge disposal, how do you do geophysical work.

ANSWER: Raw sludge - geophysics won't pick up, soil gas won't pick up, test pits won't pick up. Historical data is used to select these areas. Geophysical surveys are ideal for disturbed soil. For the scenario where sludge is dumped on soil, you would more likely be able to see sludge stain on top. Geophysical will pick up as a disturbed area. The potential for unknowns exists. This is why the federal government guarantees in the deed that if someone finds something that the Army left, they will come back and remediate the area.

QUESTION: Will this removal be done in 98?

ANSWER: Not this FY.

QUESTION: Will you bring material to replace excavated material?

ANSWER: Can't answer that at this time.

QUESTION: What is an ecological study?

ANWER: It is a terrestrial study of critters, moles, birds, and aquatic interaction. Look at habitat, vegetation species, take information, use ecological risk assessment.

11. There being no further business, the meeting was adjourned at 9:15 p.m. The next RAB meeting will be held on 17 February with the first hour a meeting with RAB community members only.

Respectfully submitted,

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
OCTOBER 21, 1997 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Marsden Chen, NYS Department of Environmental Conservation

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Frank Ives, Pat Jones, Harold Kugelmass, Russell Miller, Ken Reimer, Lucinda Sangree, Richard Sisson, David Wagner

Community RAB Members Not Present:

Brian Dombrowski (excused), Mary Ann Krupsak, Richard Lewis, Carmen Serrett, Henry Van Ness(excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science, Inc.
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Kevin Healy, U.S. Army Corps of Engineers, Huntsville Div
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Laura Sposato, SEDA Secretary
Michael Rivara, NYSDOH
Jeff Waugh, AEC

Community Support (from sign-in sheet):

Heather Clark, Community Member
Artie Baeumner
John Confer, Ithaca College
Emilie Sisson, Community Member
Neil Chaffie, Ovid Gazette
Russell Miller

2. LTC Olson provided the opening remarks for the meeting. He inquired if it was easier for members to get in tonight as we had some problems at the last meeting. He then went around the room asking for introductions of all attending.

3. Stephen Absolom, the Army Co-Chair, then welcomed members and support staff to the October Restoration Advisory Board and outlined the evening's agenda.

4. Minutes from the September meeting were signed and entered into the record.

5. Ms. Janet Fallo, Project Engineer, USA COE, NY District, gave a presentation on how priorities are established for environmental sites. The Corps of Engineer office will continue to support the depot as they downsize. She highlighted areas of Environmental Restoration Goals to show prioritizing projects, a timeline, how changes affect priorities, SWMU Classification - the original grouping of sites, relative risk site evaluation- a way of ranking/comparing the sites and went over the Interagency Agreement (IAG) Schedule. She explained how a software program which they use, DSERTS (Defense Site Environmental Restoration Tracking System), developed by the Department of Defense, is used to track information on environmental sites. In 1980 Initial Installation Assessment identified 27 sites. As of this date we have a final environmental baseline survey (EBS) total of 98 sites. Positive comments were made on how helpful it was that Janet had identified the acronyms in her presentation. Some questions were raised:

a. **Question:** A question was asked if any of DSERTS information is accessible on the Internet?
Answer: Right now it is just submitted electronically to Army and is not available to the public on the Internet. The Army guidelines, however, are available on the Internet.

b. **Question:** What factors affect master schedule.
Answer: Availability of resources, i.e., and people. Can only do so much with staff here. It's also up to EPA, state, etc., as they can only review so many documents.

c. **Question:** When a site is labeled NE, means not evaluated. Will it ever be done?

Answer: Not at this time. Most of the NE sites are not action sites, and we still have to track them in the system. However, if anything is found there, it can change. Change can also be affected if an area falls under a different regulatory arena, i.e., sewage treatment plant.

d. **Question:** When special weapons were there - were any buried in place.

Answer: Can't comment on that.

e. **Question:** Some months ago, asked about radioactive stuff. SEDA one of two places where nuclear weapons were stored.

Answer: Can't comment on that. Other than we did cease to have a special weapons mission at SEDA in 1993.

6. Pat Jones, the Executive Director of SEDA Local Redevelopment Authority, followed with a presentation on the status of the reuse plan. Some months ago she talked about the status of the reuse plan. They are now moving from a planning LRA into implementation LRA. She handed out some maps of the depot (enclosed) and highlighted those changes, some of which are:

- Housing/Lake Housing Area. No change to that. Still plan to market that as well as Elliot acres together. On the dark blue, former northern end, we have some proposals on the table.

- A proposal from a soccer organization.

- A proposal from the Youth Services International (YSI) for an academy for troubled youths.

We have no final agreement with either of these two groups. We are, however, talking very closely with YSI. About 400 jobs would be created. They would like to start renovations in March 98 could be up and running next summer. Some of the positions would be teachers, psychologists, trades people, and office positions. This is run by private organization, not state. There will be one person who will be doing the hiring. They will hire employees and contractors from the local community. Some questions generated:

a. **Question:** Who funds this operation?

Answer: Mostly the state that the child comes from. Some would be from NY State. Some could possibly be from Pennsylvania. The YSI operates 22 different facilities. Several members of LRA went to MD to see one. Talked to community members, asking their comments. They were positive.

b. **Question:** Who were some of those that went?

Answer: Some of the individuals that went were Mr. Zajac, Mr. Glenn Cook, and Sheriff Tom Fox. The YSI met with Varick Planning Board about a month ago. We will be holding informal meetings for the public further down the road. When they find out when, Pat will provide the information to Steve so that it can be published when they will be. Expect to hear something in the next 45 days.

c. **Question:** Because it is private, what will it do with tax base?

Answer: IDA - will be tax exempt but will receive payment in lieu of taxes and some funds will be paid to the Town of Varick.

d. **Question:** What is the status of the soccer organization?

Answer: Haven't eliminated soccer but financially not able to take it over yet. The YSI has the money right now.

e. **Question:** Is the Army retaining any sites?

Answer: No. The Army is going to keep two warehouses for DS2 storage but want to move it out for cost efficiencies. No decision has been made.

f. **Question:** An individual expressed concern that if no formal clean up has been done as of yet and with the proximity of Q-Area to adolescents for YSI, can see high reluctance to be putting in an institution so close.

Answer: Our last presentation might answer some of those questions. We certainly aren't going to turn land that is a threat to health. Information obtained to date indicates there is no surface problems. Regarding the residual from the 80's, we are not finding anything at the surface. Steve added that if anything is found, it is identified in some form as part of lease document - suitable transfer of lease. We will issue FOSL based on knowing kids are there.

g. **Question:** Will that be cleaned up too (referring to map blue area).

Answer: Blue area not going to be industrial - residents on site. There are five new sites to look at. Only one known site is identified in blue area. That removal action occurs in FY 98. What we'll find on new sites don't know yet. If we find things we will consider appropriate action.

h. **Question:** Would risk assessment be different for kids/adults?

Answer: Look at expected duration of exposure is different from an adolescent or an adult. We tailor the risk assessment to exposure. Average time youths spent here at YSI is 12 months.

i. **Question:** In regards to the Q Area, what you have tested, have you found anything there that will require removal.

Answer: SEAD 63 - burial sites, items will be removed

j. **Question:** During cleaning up contamination, won't it affect outside of fenceline?

Answer: All clean up plans have public comment. Fugitive contamination is controlled to prevent additional effort.

k. **Question:** Will the blue area on the map be confined with a fence so children won't wander in there?

Answer: It is currently fenced in. There will also be a fence across the Access Road.

l. **Question:** Will remediation take place after children move in? Would there be precautions?

Answer: Yes. Pat Jones also mentioned that the YSI would be started up in two to three phases. They would utilize the barracks then gym, chapel, bowling alley, and former Champions. These points next to Q would be in phase 3. We are 2-3 years from that now.

m. **Question:** A question was raised on concern of lead paint and asbestos in facilities.

Answer: A notice is put in the transfer documents that asbestos containing material or lead based paint exists. The lease document will indicate that its presence is not posing a health hazard at this time.

Pat also highlighted the airfield/training ranges. They have combined that parcel. The Finger Lakes Law Enforcement Academy is interested in this. There is presently $6 million dollars allotted for design and upgrade for the law enforcement academy in the state budget. They don't have any specifics right know. They will talk to the state to find out what their intentions were. The LRA is hopeful that Finger Lakes and state will join forces and share facility.

NYDEC to mange wildlife and like property private citizen inquired to manage wildlife. Will consider both propositions at this time. A question was raised as to how many acres are involved in this. Pat said about 8500 acres.

The green area - will be transferred to Loran C Coast Guards. It is 290 acres.

In regards to the warehouse area, IDA has elected not to include this in the EDC. The Army will have to sell the property.

LTC Olson also mentioned that there is an ongoing meeting this week on the DS2. Status is up in the air right now.

Pat also highlighted the area on the map that is marked off as a proposed prison. Does this mean we are getting a prison? No. Does it mean we could posture ourselves for one in the future? Yes. Last state bid went to TupperLake for a prison as they were postured for it at this time.

The yellow area on the map is the planned industrial area. White Deer Corp complex modification to PID added 22 acres and extending that end into and including gate 14.

a. **Question:** Why don't we put in a Casino to get rid of the legal hassles and create jobs?
Answer: That was a proposal sometime ago. LRA doesn't want the liability. As far as reuse, we are looking for the highest price with the highest and best use.

b. **Question:** Elliot Acres was used this summer. Any improvements made to them at this time?
Answer: Not really, just some plumbing repairs.

7. LTC Olson then introduced the next presenter, Dr. Kathleen Buchi, from the U.S. Center for Health Promotion and Preventive Medicine (CHPPM). ATSDR is the organization that "looks over your shoulder" to make sure things are being done right. They are the watchdogs for public health. She introduced Mike White, the Army Liaison, who will be making the future visits to SEDA. If your depot is on the NPL list, it triggers ATSDR to come in. The ATSDR will do a comprehensive public health assessment for the installation.

NPL Listing triggers them to come in.
- They do a site scoping visit.
- Identify any hazards from contamination in and around the depot, collect data and issue report.
- Initial Release Draft/Data Validation Agency review and comment period
- Public comment Release
- Public Review and Comment Period
- Final Release
- Periodic Update of Public Health Action plan.

Seneca did not rank high on the list earlier. It was moved forward because of BRAC. ATSDR looks at BRAC list for priority. Some installations have current remedial investigation program. Some are Non-BRAC.

An estimated time table:

ATSDR - done 2nd Qtr FY 98
Initial Release - Late Oct 98
Public Review Oct-Dec
Final Release Dec 98-Mar 99
9 month process - and may go longer

LTC Olson asked what kind of input would she need from SEDA support staff. Dr. Buchi said they would be here a short period of time, 2-5 days, for site scoping visit. They will send a list of documents they need. They will look at rest of Remedial Investigation reports that are available. They will flag documents they need copies of. They will provide an in briefing as well as an out briefing. They would focus only on sites that have a public health implication.

Question: Do they have clearances to review information on what was stored here?
Answer: Yes, some of the staff will have clearances before they come if necessary .

She highlighted the pathway of exposure. There are five parts:

1. Source - is it there?
2. Can it move?
3. Is it accessible to people?
4. Can they eat, breath, touch it?
5. Does someone eat, touch or breathe it?

She also highlighted that community involvement would start with the RAB. Some questions that were generated:

a. **Question:** It is required a remedial investigation be done before they look at the site?
Answer: No, they can come in anytime. It is better to come during the middle of remedial investigation. They would be in a better position to incorporate findings.

b. **Question:** How big is your organization.
Answer: About 500 people. Thirty are full time people that are liaisons with ATSDR.

c. **Question:** Confusion exists about the organization. Is it for public health service or the Army when they come.
Answer: It is through a MOU. Kathleen works for DOD and manages the ATSDR program.

d. **Question:** Who is person in charge of ATSDR?
Answer: Commander Joe Hubert.

e. **Question:** Where is the accountability back to Congress? Is it an independent operation from DOD.
Answer: Yes, they (ATSDR) Report every year to Congress.

f. **Question:** Do you report to GAO, Cabinet
Answer: Yes, the ATSDR does.

g. **Question:** Will you be looking into concerns about breast cancer?
Answer: Yes, they are already aware of some newspaper articles. Will be working with NY Department of health on that.

8. Janet Fallo introduced Heather Clerk who is a

Cornell graduate Student. Heather put some forms out on the table for RAB members so she may be able to interview anyone who has attended a RAB meeting and get their views, comments, etc. Everything will be kept confidential. If you are interested, fill out the form and return to Heather. Her thesis depends on the input. She will also give RAB an opportunity to preview her draft thesis. Her field of study is natural resources. Janet also mentioned that Heather has a survey she would like RAB members to look at. It will be sent out in a separate package.

9. Steve opened the floor for open discussion. There being no further discussion, Steve then mentioned the November RAB meeting on November 18 would be a public meeting for the Open Burning Grounds Proposed Remedial Action Plan. We will send out specifics for this. The public meeting will be held at the Seneca County Building in Waterloo in the Supervisors Room at 7:00. It will be a posterboard session with stations. There will be a county court stenographer there to take down concerns.

10. A question was raised about the necessity of a December RAB. Steve mentioned that we will have to assess whether we will have the December meeting. After the November public meeting there is a 30 day comment period. If anything is pressing we will send out a package in December and maybe reconvene and meet in December. We also might be involved with the ASTDR at that time.

11. There being no further business, the meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

Richard A. Durst

RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
FEBRUARY 17, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Dick Durst/Community Co-Chair
Brian Dombrowski, Pat Jones, Harold Kugelmass, Russell Miller, Ken Reimer

Community RAB Members Not Present:

Anne Herman (excused), Frank Ives, Richard Lewis, Lucinda Sangree(excused), Carmen Serrett, Henry Van Ness, David Wagner (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Keith Hoddinott, USACHPPM
Joanne Ogden, Public Affairs Ofcr/Legal
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):
Drew Bryson, EOD Technology
Heather Clark, Community Member
Neil Chaffie, Ovid Gazette
Antje Baumner

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the February Restoration Advisory Board and outlined the evening's agenda. He then went around the room and asked for introductions of all in attendance.

3. The first hour of the evening was a meeting with community RAB members only without the government members present. Dr. Durst felt it was a positive meeting. They would like to continue that on a semi-regular basis either before the RAB meetings or on alternate months. Dr. Durst summarized the issues that came about in their meeting. They are:

- The community members would like to hear from representatives of DEC/EPA on i.e., how operation is going, and projects under discussion such as those being discussed at BCT meetings.

- Would like to hear a presentation from someone from Seneca Meadows Landfill, i.e., how the landfill is treated, etc,

- In the area of community relations, maybe having the minutes from the meeting summarized and published in the newspaper. You may even include the names of the RAB members as people to contact with their concerns.

- Members would like to look into the TAPP Grants as a possibility for members of the RAB to utilize since they don't really have the time or expertise to get into the details.

Some questions that were generated:

QUESTION: How do TAPP grants work?

ANSWER: It is a new program that allows for RAB members to apply for a consultant to provide advice on specific projects. It is not for an overall program review. You would have to decide on what specific projects you want. There are specific guidelines. Another alternative is TAG. That may be more in line with what you have discussed you need. Carla Struble will send some more information on this and it will be forwarded in the next mailing to RAB members.

QUESTION: In regards to giving out names of RAB members, would RAB members be willing to give out phone numbers, addresses.

ANSWER: This would be addressed in next meeting when there are more members present.

4. Minutes from the October 1997 meeting and the January 1998 meeting were signed and entered into the record. A change was made to page 4 of the January minutes, which will be included in the final signed copy, sent out to members. (TAG is EPA program. TAPP is the Department of Defense (DOD) program. They were reversed in the minutes).

5. Janet Fallo mentioned she has been working on the DRAFT guidebook for the RAB members. We will be sending it to RAB members for comments, suggestions etc., in the next mailing.

6. Next on the agenda, Stephen Absolom, Army Co-Chair, gave an overview on "The Big Picture" of all the projects that are on-going or planned for Fiscal Year 1998. The institutional area is Priority 1. The family housing area is now Priority 1. There are 51 sites. Right now we have approved 12.8 million. We had originally requested 18 million. We have a lot of work going on. A summary of the status of the projects is enclosed to these minutes. The handout provided at the meeting is also enclosed.

7. Steve opened the meeting for questions.

QUESTION: Dr. Durst wondered of the possibility of looking for site off base for meeting. Would that be viable.?

ANSWER: Yes. That is something we could look into.

8. Steve emphasized that we would be looking for new members. If members didn't show up or call, it is an unexcused absence. Wanted to remind members to call if you can't make the meeting.

9. Some suggestions for the next meeting's agenda items:

- State or EPA discuss views on process.

- Presentation by Mr. John Buck, AEC on TAPP on what it means, how do we apply for it, etc.

- Presentation by representative from Seneca Meadows Landfill.

10. There being no further business, the meeting was adjourned at 9:15 p.m. The next RAB meeting will be held on 17 March 1998 at 7:00 p.m. at the NCO Club. There will not be a separate meeting for community members for the March meeting.

Respectfully submitted,

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

" THE BIG PICTURE"

FY 98 ACTIVITY
SENECA ARMY DEPOT
FEBRUARY 17, 1998

PRESENTED TO THE
RESTORATION ADVISORY BOARD
BY
STEPHEN M. ABSOLOM

INSTITUTIONAL AREA PRIORITY 1

SEAD 41 BOILER BLOWNDOWN PIT BLDG 718

SEAD 123 EBS SITE a. bldg 744 small arms range

SEAD 123 EBS SITE b. bldg 716/717 petroleum release

SEAD 123 EBS SITE c. bldg 747 haz mat release

SEAD 123 EBS SITE d. area west of bldg 715

SEAD 123 EBS SITE e. rumored DDT can burial site

SEAD 123 EBS SITE f. burial site mound north of Post 3

FAMILY HOUSING PRIORITY # 2

SEAD 119 EBS SITE Bldg 2409 sewage spill

BLDG 208/209 ASBESTOS ABATEMENT

AIRFIELD PRIORITY #3

SEAD 122 EBS SITE a. trap/skeet range

SEAD 122 EBS SITE b. bldg 2302 small arms range

SEAD 122 EBS SITE c. storage unit by bldg 2311

SEAD 122 EBS SITE d. hot pad fuel spill

WAREHOUSE AREA

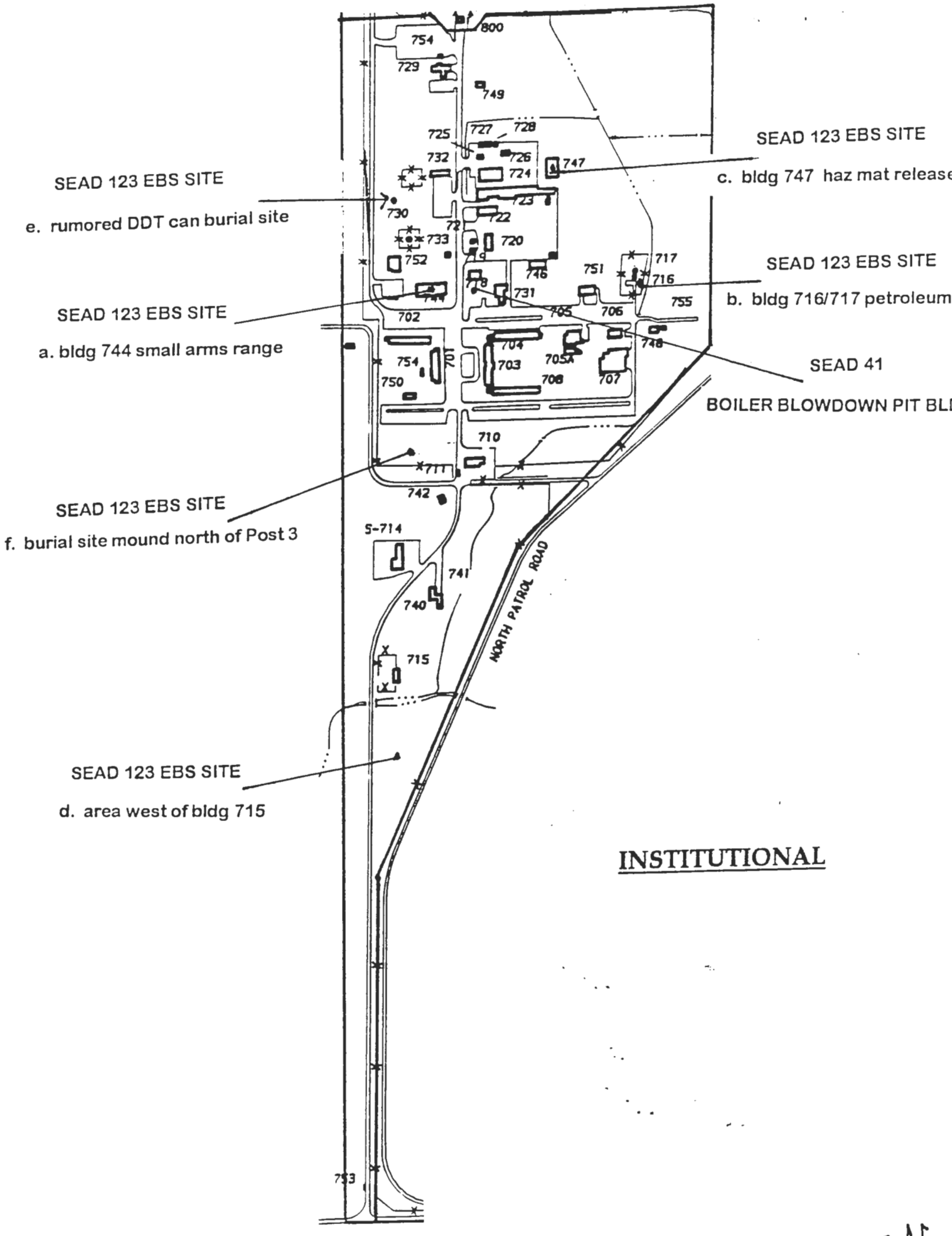
SEAD 26 FIRE TRAINING AREA

SEAD 64A OLD CONSTRUCTION DEBRIS LANDFILL

SEAD 121 EBS SITE bldg 325 PCB oil spill

SEAD 50 TANK FARM STORAGE

SEAD 54 ASBESTOS STORAGE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e. rumored DDT can burial site
SEAD 123 EBS SITE
a. bldg 744 small arms range
SEAD 123 EBS SITE
f. burial site mound north of Post 3
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c. bldg 747 haz mat release
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b. bldg 716/717 petroleum
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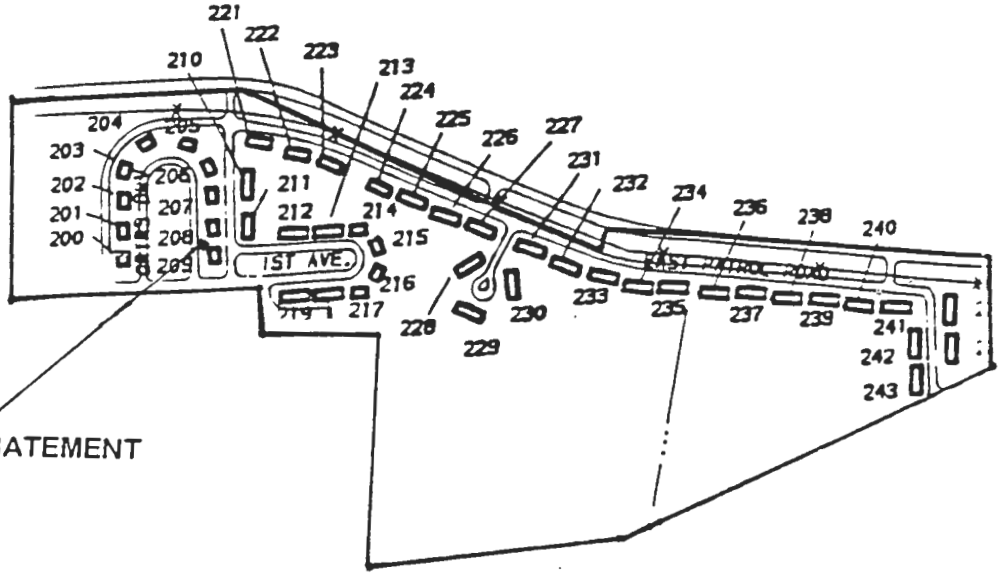
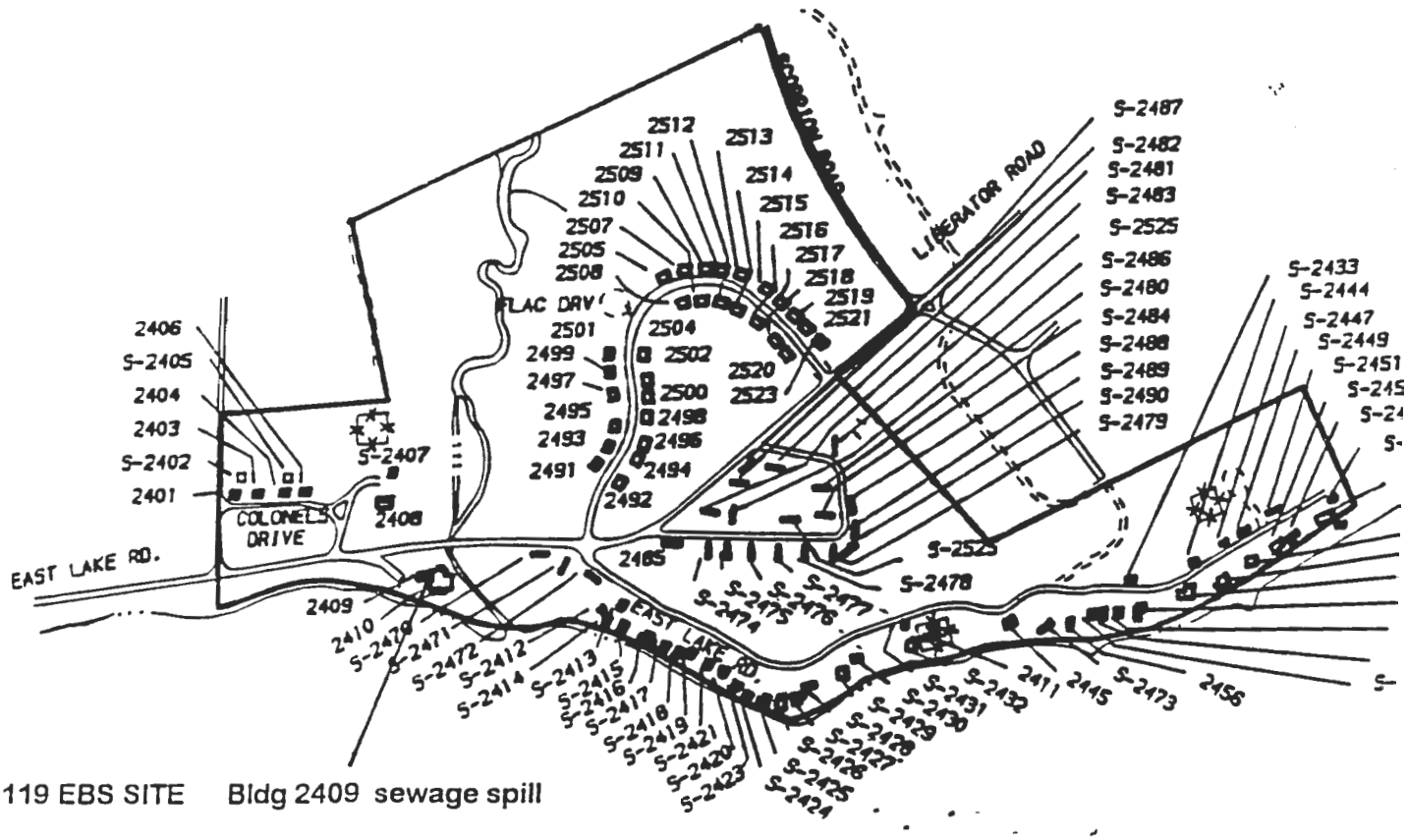
BOILER BLOWDOWN PIT BL
NORTH PATROL ROAD
INSTITUTIONAL



BLDG 208/209 ASBESTOS ABATEMENT

FAMILY HOUSING



SEAD 119 EBS SITE Bldg 2409 sewage spill

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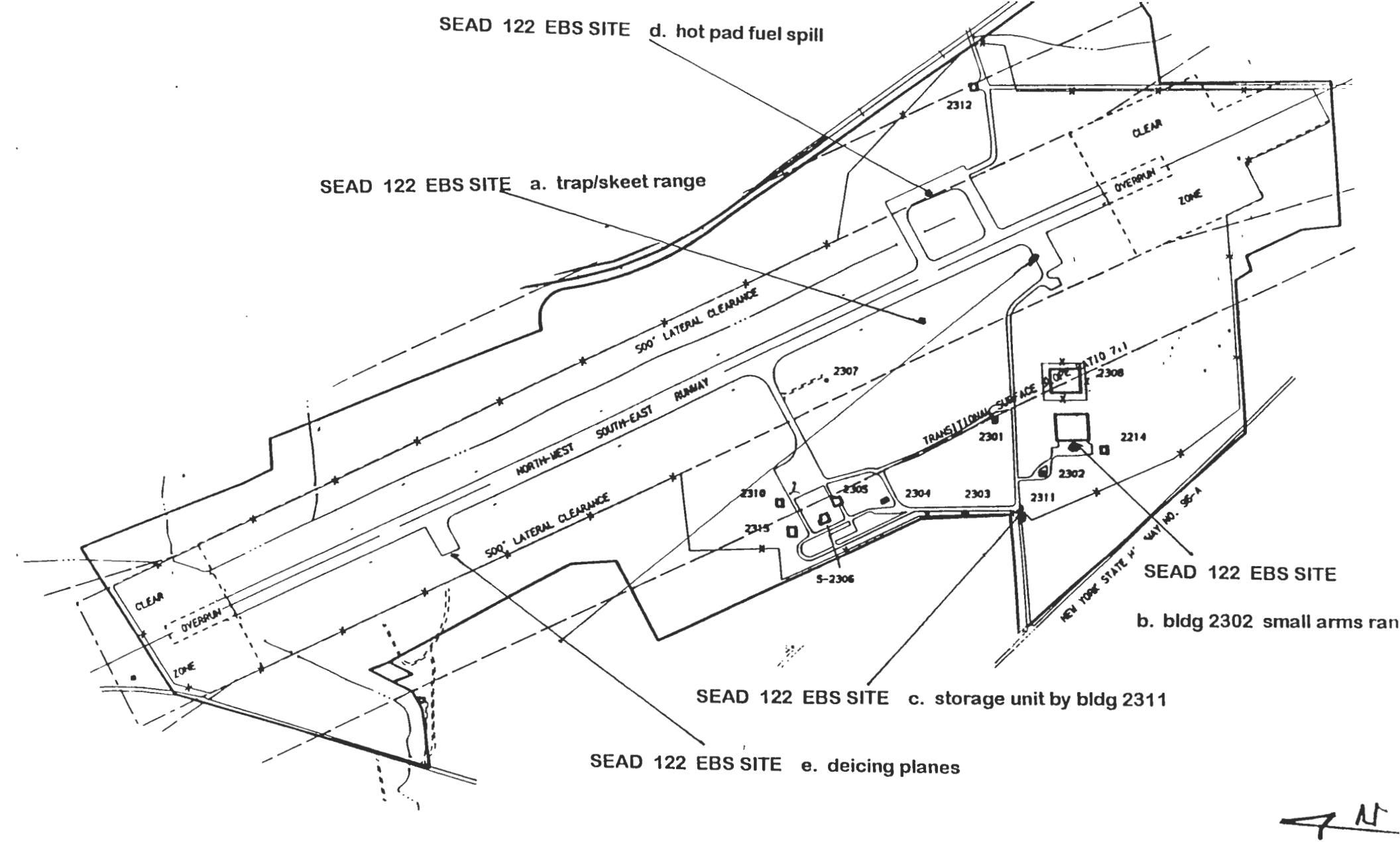
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b. bldg 2302 small arms ran
SEAD 122 EBS SITE c. storage unit by bldg 2311
SEAD 122 EBS SITE e. deicing planes
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OVERRUN
ZONE
500' LATERAL CLEARANCE
NORTH-WEST SOUTH-EAST RUNWAY
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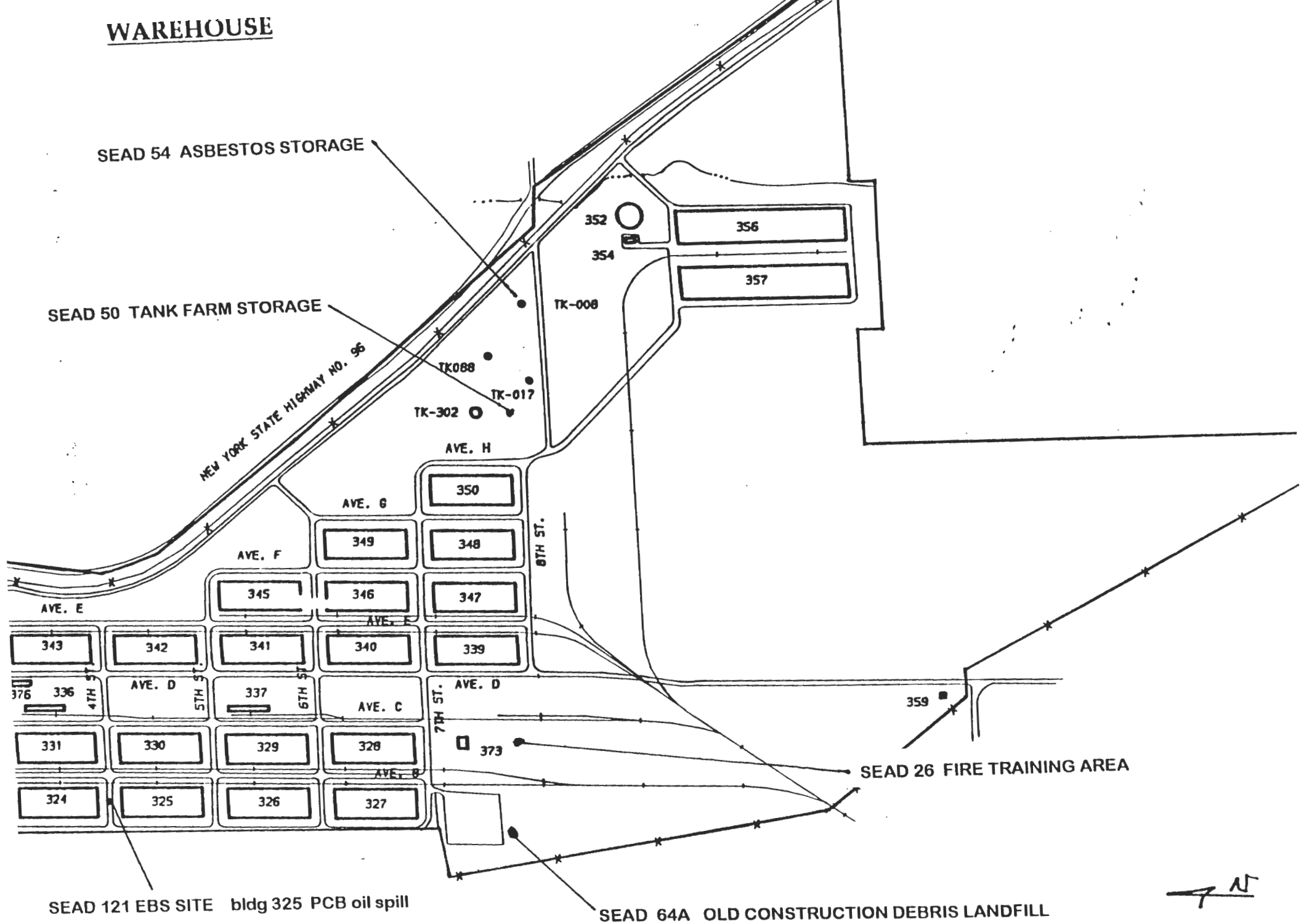
TRANSITIONAL SURFACE
NEW YORK STATE


WAREHOUSE
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SEAD 50 TANK FARM STORAGE
NEW YORK STATE HIGHWAY NO. 96
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TK-302
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SEAD 26 FIRE TRAINING AREA
SEAD 121 EBS SITE bldg 325 PCB oil spill
SEAD 64A OLD CONSTRUCTION DEBRIS LANDFILL

PLANNED INDUSTRIAL DEVELOPMENT

SEAD 59 & SEAD 71 PAINT DISPOSAL AREAS

SEAD 16 ABANDONED DEACTIVATION FURNACE

SEAD 17 DEACTIVATION FURNACE

SEAD 25 FIRE DEMONSTRATION AREA

SEAD 39 BOILER BLOWDOWN PIT BLDG 121

SEAD 40 BOILER BLOWDOWN PIT BLDG 319

SEAD 5 SLUDGE PILES

SEAD 121 EBS SITE a. USCG halon discharge

SEAD 121 EBS SITE b. DRMO yard

SEAD 121 EBS SITE c. 306/308 Haz mat release

SEAD 121 EBS SITE d. BLDG 127 UST petroleum release

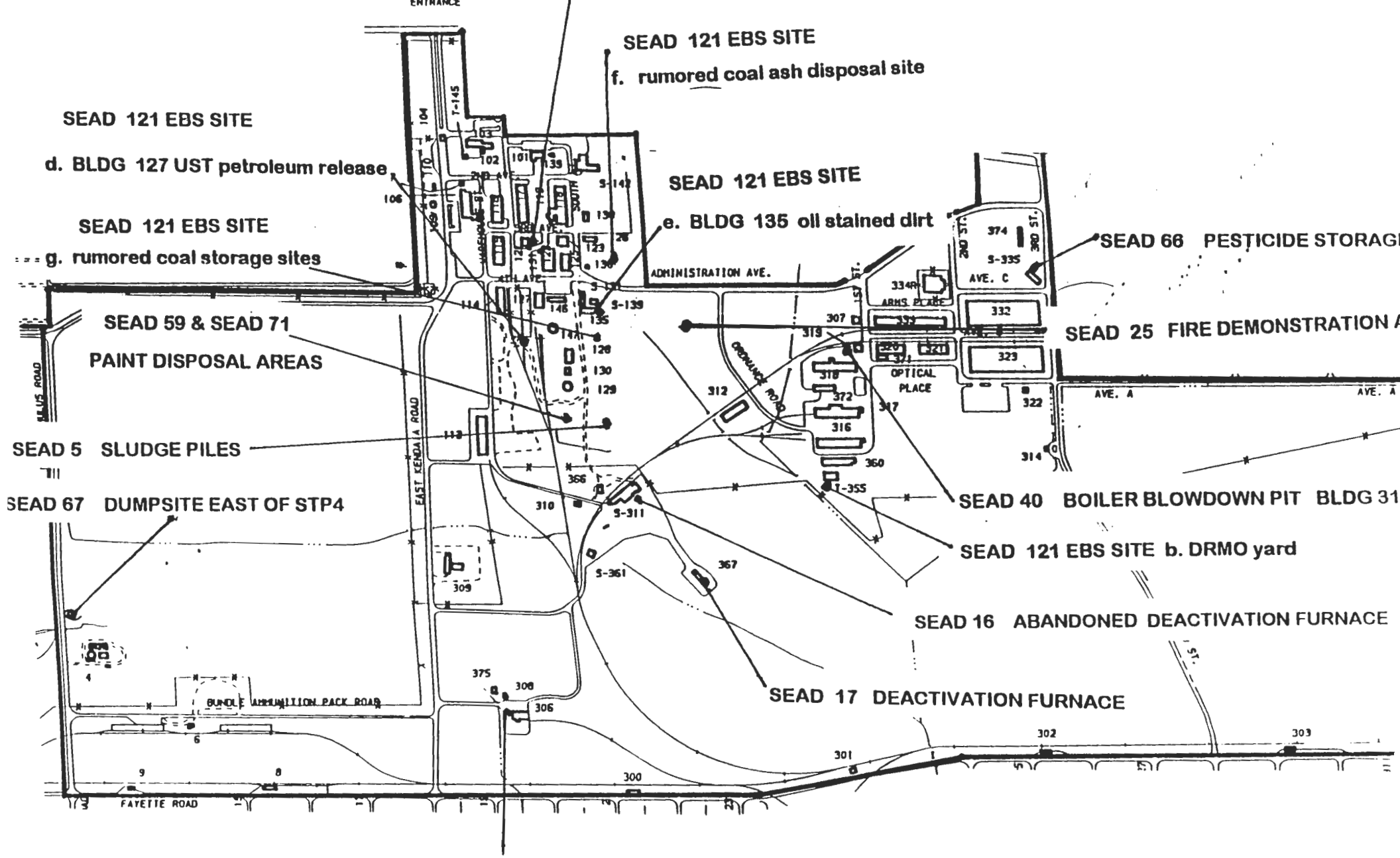
SEAD 121 EBS SITE e. BLDG 135 oil stained dirt

SEAD 121 EBS SITE f. rumored coal ash disposal site

SEAD 121 EBS SITE g. rumored coal storage site

SEAD 67 DUMPSITE EAST OF STP4

SEAD 66 PESTICIDE STORAGE AREA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ADMINISTRATION AVE.
EAST KENDALIA ROAD
BUNDLE AMMUNITION PACK ROAD
FAYETTE ROAD
OPTICAL PLACE
ARMS PLACE
AVE. A
AVE. C
ORDNANCE ROAD

CONSERVATION AREA

SEAD 23 OPEN BURNING GROUNDS

SEAD 11 OLD LANDFILL

SEAD 64D OLD CONSTRUCTION DEBRIS LANDFILL

SEAD 13 INHIBITED RED FUMING NITRIC ACID

SEAD 4 MUNITIONS WASHOUT FACILITY

SEAD 12 RADIATION SITE

SEAD 63 MISCELLANEOUS COMPONENTS BURIAL SITE

SEAD 6 ASH LANDFILL

SEAD 120 EBS SITE a. "50 AREA" dumping area

SEAD 120 EBS SITE b. Ovid road small arms range

SEAD 120 EBS SITE c. bldg 813/817 paint disposal area

SEAD 120 EBS SITE d. mp refueling point

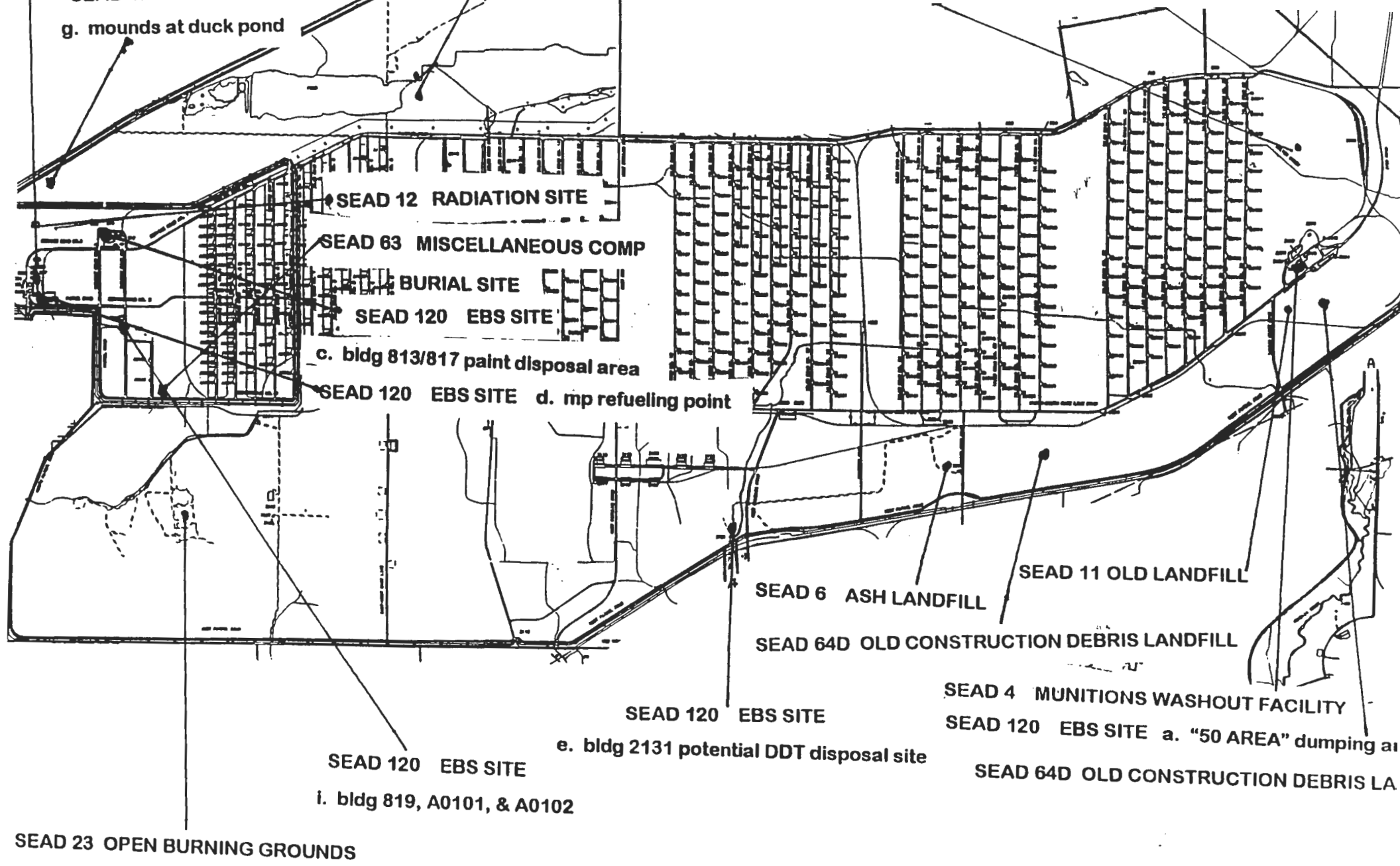
SEAD 120 EBS SITE e. bldg 2131 potential DDT disposal site

SEAD 120 EBS SITE f. munitions burial site

SEAD 120 EBS SITE g. mounds at duck pond

SEAD 120 EBS SITE h. bldg 810

SEAD 120 EBS SITE i. bldg 819, A0101, & A0102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SEAD 23 OPEN BURNING GROUNDS

Restoration Advisory Board
Meeting Agenda

March 17, 1998
NCO Club

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom Army Co-chair
7:15	**TAPP- Technical Assistance for Public Participation** Mr. John Buck Project Manager, U.S. Army Environmental Center
7:40	**Open Discussion**
8:05	**Break**
8:15	**ATSDR- Agency for Toxic Substances and Disease Registry Health Risk Assessment Concerns** Mr. Emilio Gonzalez Agency for Toxic Substances and Disease Registry
8:50	**Closing comments** -Discuss future agenda topics -Set date for next meeting
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
March 17, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Frank Ives, Pat Jones, Ken Reimer

Community RAB Members Not Present:

Dick Durst/Community Co-Chair (excused)
Brian Dombrowski (excused), Anne Herman (excused),
Harold Kugelmass (excused), Russell Miller,
Lucinda Sangree (excused),
Henry Van Ness (excused), David Wagner

Environmental Support Personnel Present:
Alicia Allen, U.S. Army Corps of Engineers, Huntsville, AL
John Buck, USAEC
BethAnn Cameron, USACHPPM
Michael Duchesneau, Parsons Engineering Science, Inc.
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Keith Hoddinott, USACHPPM
Michael White, USACHPPM
Laura Sposato, SEDA Secretary

ATSDR Personnel Present:

Arthur Block
Paul Charp
Kate McKinney
Susanne Pickering
Emilio Gonzales
Jessica Graham, ERG

Community Support (from sign-in sheet):
Heather Clark, Community Member
Neil Chaffie, Ovid Gazette
Jennifer Mrozowski, Seneca Citizen
Glenn White, Community Member

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the March Restoration Advisory Board and outlined the evening's agenda. He then went around the room and asked for introductions of all in attendance. Minutes from the February 1998 meeting were reviewed. Some changes were requested to page 2 by Dr. Durst which he telephonically requested. On the third paragraph he added that community RAB members would also like to hear from the New York Department of Health. He also wanted the last paragraph reworded to read: "Members would like to look into the TAPP Grants as a possibility for members to hire a consultant to review documentation to utilize since they don't really have the time or expertise to get into the details." (In addition, Henry Van Ness was excused from the February meeting). These changes will be incorporated in the final minutes which will be signed and entered into the record.

3. Next on the agenda, Mr. John Buck, Project Manager, U.S. Army Environmental Center, gave a presentation on the Technical Assistance for Public Participation (TAPP). He gave an overview of the program as well as a brief history. Handouts that were provided are enclosed to these minutes. A copy of the briefing slides is also attached.

To summarize:

TAPP is a way for citizens of the RAB to get independent assistance in interpreting documents to help RAB members become a better part of the decision making process. The rule came in effect February 2, 1998. It is for the community members of RABs and TRCs who need their assistance--not for the army or regulatory agencies. Frequently an in-house contractor or regulatory agency can provide the same type of assistance. How do you get it? It comes out of installation's restoration funds. It does not come from an endless pot of money. It is up to $100,000 of the life of the program. Community RAB Members are solicited for the need. It is a simple acquisition procedure to solicit and you can have someone on board quickly. Members apply by filling out a simple two page form (copy attached to rule handout).

Eligible projects

- Interpretation of technical documents such as environmental documents (RI/FS).
- Review of proposed restoration technologies.
- Provide training to the group.

Ineligible projects

- Group can't use it to sue.
- Contracts for creation of new data.
- Health Agencies can't utilize for health studies.
- Not for community outreach (there are other funds for that).

The criteria for obtaining TAPP is that community members have to demonstrate that federal, state and local regulatory agencies can't provide the same assistance. They have to demonstrate it is likely to contribute toward community acceptance of the program. Approval is a judgement call, which would ultimately have to be decided by the Commander. Community RAB members amongst themselves would have to have a simple majority vote and include at least three RAB members.

They would have to be participating in the process. It can be a roll call vote. Also in the record they have to show that they tried to get this assistance from some other agencies (RI/FS contractor, local, state and federal staff, EPA, a professor, etc.) Because there are a limited amount of funds, if information can be obtained from a contractor, etc., it should be the first alternative. Steve would help work with the RAB on the application. Once it's completed and submitted, it would be either accepted or rejected. There is an appeal process. If it gets accepted the army would procure contractor. RAB would specify what they want done. TAPP is valid until the end of process. Yearly the RAB has to say how program is going. It would eventually go in a report to congress, which is published on an annual basis. The appeals process follows chain of command. The goal is to resolve disputes at lowest possible level.

Some questions that were generated:

QUESTION: Who performs the search?
ANSWER: The RAB on the application specify whom they would like to use to do this.

QUESTION: Can SEDA put in their request for money for next years budget instead of taking out of existing funds?
ANSWER: They have to use it for specific task. Whether it can put in line item for next year's budget John Buck said he would have to get back to us on that. The amount is up to $25,00 per year or $100,000 over the life of the program.

QUESTION: Who picks the contractor?
ANSWER: RAB should nominate someone who they want to use and the army will use their procurement process.

4. The next item was a presentation by various members of ATSDR. Kate McKinney's role is community involvement and she introduced Arthur Block, Senior Regional REP, Paul Sharp, Health Physicist, Emilio Gonzales, Health Assessor and Site Leader, Suzanne Pickering, Health Education and Jessica Graham, ERG Contractor out of Boston Region helping ATSDR.

Kate McKinney started off the presentation by handing out a packet. A copy is provided with these minutes to those who were absent. They have a web page which has proven to be very effective. Information is enclosed in the packet.

Artie Block, Senior Regional representative then spoke. He covers the area in Region 2 which consists of NY, NJ, Puerto Rico and the Virgin Islands. He is our local ATSDR representative. ATSDR's purpose is to give you the information you need about environmental health. ATSDR was created same time as the EPA. They began the process in 1980. It is an independent environmental federal public health agency. They are nonregulatory - don't help make regulations or enforce regulations. They deal with the science of environmental health. Staff works at Atlanta and they have physicians, health scientists, all geared for public/environmental health. They are always looking into new science and how it impacts the community. They do things from a science-based perspective. They visited Seneca as they were mandated to be here because Seneca is on the NPL list. ATSDR is mandated to perform public health assessment on all NPL federal sites. They also present community information and work with other agencies. Their focus this week at Seneca is to gather information. They will look at data and evaluate it. They will be visiting and talking to agency reps, EPA, DEC, DOH, to start to evaluate if there is any potential for exposures. ATSDR is mandated to do a public health assessment which is a document that looks at all potential or real exposures and how it impacts humans, i.e., cancer, birth defects. They look at exposure and the pathways. Other things they do is public health education - explain what chemicals are, their impact, the health implication. They do have an 800 line which is on the back of the sheet in handout (1-800-444-1544). It is staffed by someone. Anyone may call the agency and ask to be put through to an individual (when it is not staffed, it goes to voicemail).

QUESTION: What are you looking for today?
ANSWER: Looking at past and current data (may look at future). They are also looking at community concerns. Another product could be necessary - such as a public health consultation.

The next presenter was Emilio Gonzales, Environmental Engineer, ATSDR. A copy of his briefing slides is attached to the minutes. He highlighted that the site visit is the most important. It allows them to observe first hand what is going on and hear community concerns. They gather information, obtain data, if conditions change, go back and look at new data. They will consult health agencies to help identify community health concerns. ATSDR health assessment process will evaluate exposure, source, where it was released in environment, and points where humans are exposed, i.e., gardens, playgrounds, personal potential to eat, drink breathe, skin absorption, what is site exposure, how long exposure levels are expected and make recommendations to protect human health. Once they identify the contamination, they will look at how affects health, contamination levels, the frequency of exposure. They expect about mid-May to provide an initial release of document to give to Seneca/EPA, of what they want to put out to the public. Possibly June go out with public comment.

QUESTION: Can the installation take information out?
ANSWER: No, their review would be to insure the information as provided to ATSDR is correct in the document.

QUESTION: Who will review community input?
ANSWER: First cut is technical review. Public release document is for all community people. Then there is final version. Two ways the information will go out, mailing list, repositories. Comments should be made in writing. Comments will become part of the document.

QUESTION: Regarding secured facility at north end, what are potential problems?
ANSWER: Will be looking at all pathways. If it is in documentation that there is something, it would certainly be looked at. If it is air exposure, pathway, i.e., landfill certainly look at that data and study it.

QUESTION: Are you going to do anymore community outreach on this? Are you going to wait until the first report is released for comments or can people send comments to you now?
ANSWER: All the above. They don't want to ignore concerns. They also don't want to ask about something that isn't there and alarm anyone. Community health concerns are very critical and are a vital piece of information.

QUESTION: What defines the community in rural area?
ANSWER: People most likely in the range of exposure - primary residents, those that have vacation homes here, and certainly other people can provide information. A broader definition is people impacted by a broader site, i.e., politicians, realtors, and business people.

QUESTION: Is your organization going to all depots that are closing? Are you going to Savanna or Sierra?
ANSWER: ATSDR will be going.

QUESTION: Where do you get your direction to go there?
ANSWER: Because Seneca is on the National Priority List, we are mandated to come. We are required to do it. Also, people, because of community concerns, can request that they come and do health assessment in writing.

QUESTION: Isn't this overkill?
ANSWER: Yes, you are right to a certain degree. Does ATSDR have a choice? No. It's mandated. If we don't, senators, congressmen say we aren't doing our job. In some sites we were in an out of there fast. At other sites we found things that other agencies haven't found. Environmental agencies do a quantitative risk assessment. They look at numbers, put in math terms and come out with scenario by numbers. ATSDR does a qualitative assessment, not only concentrations, but look at receptors themselves. It is a different approach.

QUESTION: In regards to anticipated cleanup, will any begin prior to ATSDR completing their study?
ANSWER: Look at big picture, what areas are cleaned up, what residual levels looked at.

QUESTION: Do you consider actions before assessment done?
ANSWER: Yes, if conditions change, we will revisit. Even after the final document, if anything changes we will have to revisit.

QUESTION: How soon is current remediation action to start?
ANSWER: Steve Absolom said in May timeframe.

QUESTION: The review is not going to contract for more samples, etc. Will they review what has already been done?
ANSWER: Review data will be available. One of the recommendations might be that if something is questionable, we will recommend additional data, samples, etc. to make that determination.

QUESTION: Are your standards different than EPA?
ANSWER: Yes, in some cases they are. Some RAD values are different.

QUESTION: If you have recommendation for additional samples, do you ask agencies to do before final document goes out?
ANSWER: The final document reflects the conditions as they exist right now. One of the recommendations could be additional sampling. As we review current data, if there are data gaps (missing information) if it is possible to sample, this is recommended before document goes out. If it isn't, document will identify data gaps and that information missing. ATSDR evaluation recommendations will appear in document and may include request that sampling will be done. In case where ATSDR request additional sampling be performed, the agency receives that data, and it can then issue addendum to health assessment or perform health consultation of that data. An addendum can be attached

to document but ATSDR won't revise the document. Once we review the data, probably within a month, we will know if we need additional data is going to be recommended.

Kate directed everyone to the sign-in table that there is a sheet to request if you would like to be put on ATSDR mailing list.

5. Steve Absolom then opened the floor for any open discussion.

QUESTION: Are there any contractors in place for remediation?
ANSWER: Only one right now for the unexploded ordnance effort - EOD Technologies. We are preparing the workplan for that effort. Once the safety plan is approved we will start work.

QUESTION: Does the Depot have any comment to the article written by Scott Sampson about the state being reluctant to take over the ammo area because of possible contamination.
ANSWER: New York State Department of Environmental Conservation has not yet rescinded their offer on conservation area. As far as we are concerned, that is still under consideration.

QUESTION: Has Seneca Army Depot ever had any waste taken to Seneca Meadows Landfill?
ANSWER: Steve Absolom stated that he knew municipal waste and sewage sludge from the drying beds had been taken there in the past.

NOTE: Further review of this question was done. Seneca has also had contractors dispose of asbestos for abatement projects and waste from fuel oil spills at the facility disposed of these.

6. Steve established agenda items for the next meeting. The next RAB meeting will occur the same week we will be having a Peer Review. They will do a presentation to the RAB on the process and what it can accomplish. We will still look into the possibility of getting Seneca Landfill. Commander expressed concern about the contracting issue with this. Steve will look into it.

7. There being no further business, the meeting was adjourned at 8:54 p.m. The next RAB meeting will be held on 17 May 1998 at 7:00 p.m. at the NCO Club. The community RAB members will have an informal meeting amongst themselves on April 21st. Dr. Dust will be contacting them.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

The Basics of the TAPP Program

- What is it?
- Who is it for?
- How does it benefit DoD?
- How did it begin?
- How is assistance provided?
- What kinds of projects are eligible?

TAPP - What is it?

- Technical Assistance for Public Participation is a program that can provide independent assistance in interpreting scientific and engineering issues with regard to the nature of environmental hazards and restoration activities at an installation.

- The goal of the program is to enhance the public's ability to participate in the decision-making process by improving their understanding of overall conditions and activities.

TAPP - How did it begin?

- Federal Facilities Environmental Restoration Dialogue Committee
- Request for Comments
- National Defense Authorization Act of 1996
- Proposed Rule - December 27, 1996
- Final Rule - Fall 1997

TAPP - Who is it for?

- Community members of RABs and TRCs

  - ✓ Residents of community affected by installation
  - ✓ Need for additional technical assistance

TAPP - How is the Assistance Provided?

- Installation Procures a Technical Assistance Provider
  - ✓ Using installation restoration funds
  - ✓ Using community member input in selection

- DoD's management of contract limits administrative burden on RAB/TRC
  - ✓ Simple form to complete
  - ✓ Assistance goes to RAB/TRC, not "citizen group"

Eligible Projects

- Interpretation of technical documents
- Review of proposed restoration technologies
- Participate in relative risk site evaluations
- Understand health and environmental implications of sites and cleanup strategies
- Training, as appropriate

Ineligible Projects

- Litigation or underwriting legal actions
- The generation of new primary data
- Reopening final DoD decisions or conducting disputes with DoD
- Epidemiological or health studies
- Community outreach

Criteria for obtaining TAPP

- The TRC or RAB demonstrates that the Federal, State, and local agencies responsible for overseeing environmental restoration at the installation do not have the technical expertise necessary for achieving the objective for which the technical assistance is to be obtained; **OR**

Criteria for obtaining TAPP

- The technical assistance .....

  (a) Is likely to contribute to the efficiency, effectiveness, or timeliness of environmental restoration activities at the installation; and

  (b) Is likely to contribute to community acceptance of environmental restoration activities at the installation.

Certifying Majority Request

- TAPP request must represent simple majority of at least three community members

  - Who are community members?
  - How can request be certified?

Certifying Search for Alternate Support

- Why alternate sources should be considered
  - Rule requirements
  - Conservation of funds

- What constitutes certification
  - Statement on TAPP application

Other Sources of Technical Support

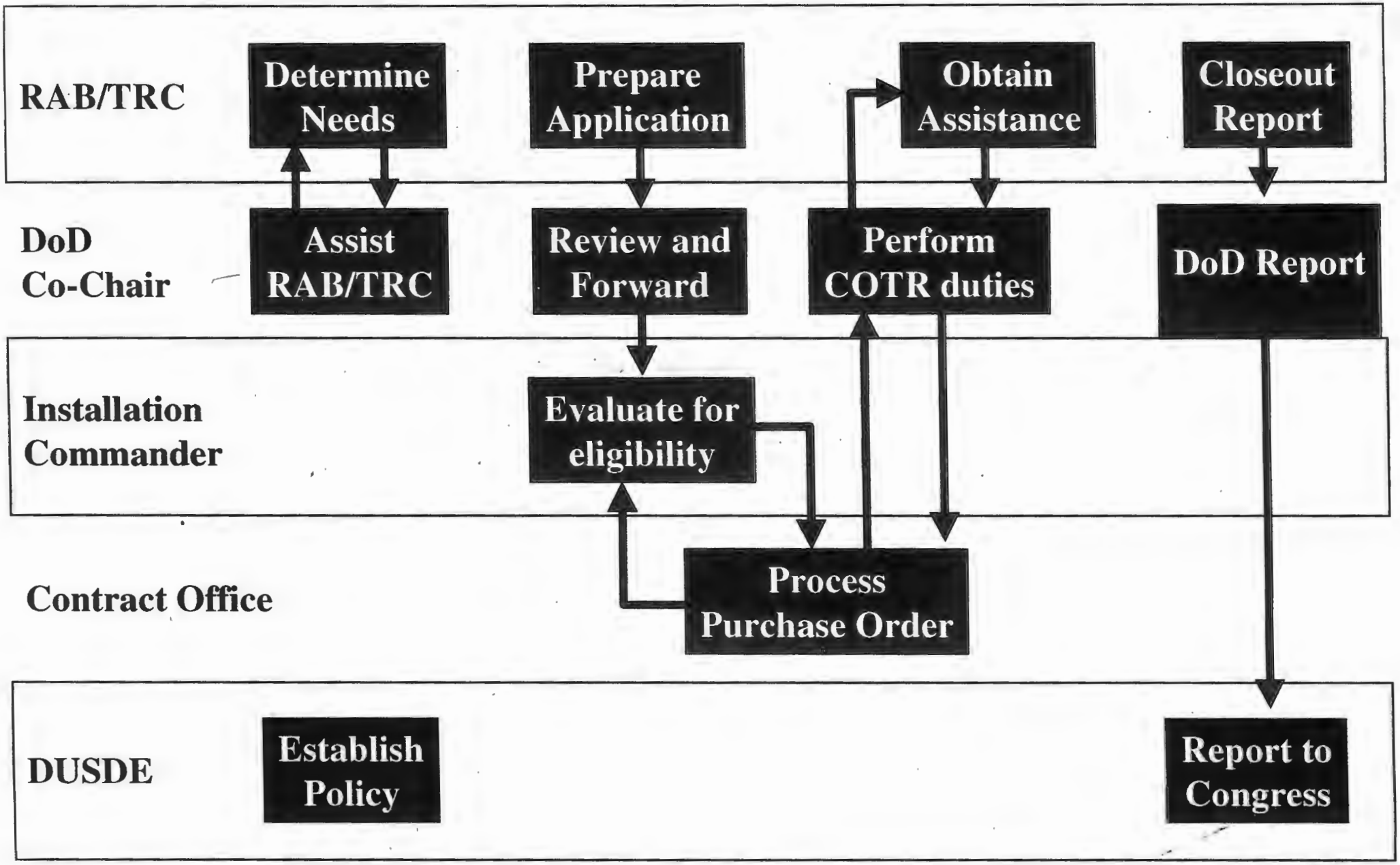
- Installation restoration contractors
- Local, State, and Federal staff
- Universities
- Volunteers
- Environmental Protection Agency
  - ✓ Technical Assistance Grants
  - ✓ Technical Outreach Service for Communities

Nominating a potential provider

- Minimum qualifications are specified in rule
  - Demonstrated knowledge of issues
  - Training in relevant discipline
  - Ability to interpret technical issues to the community

- RAB/TRC can determine additional qualifications
  - Experience in local geology
  - Experience in working with community group
  - Specialized technical expertise

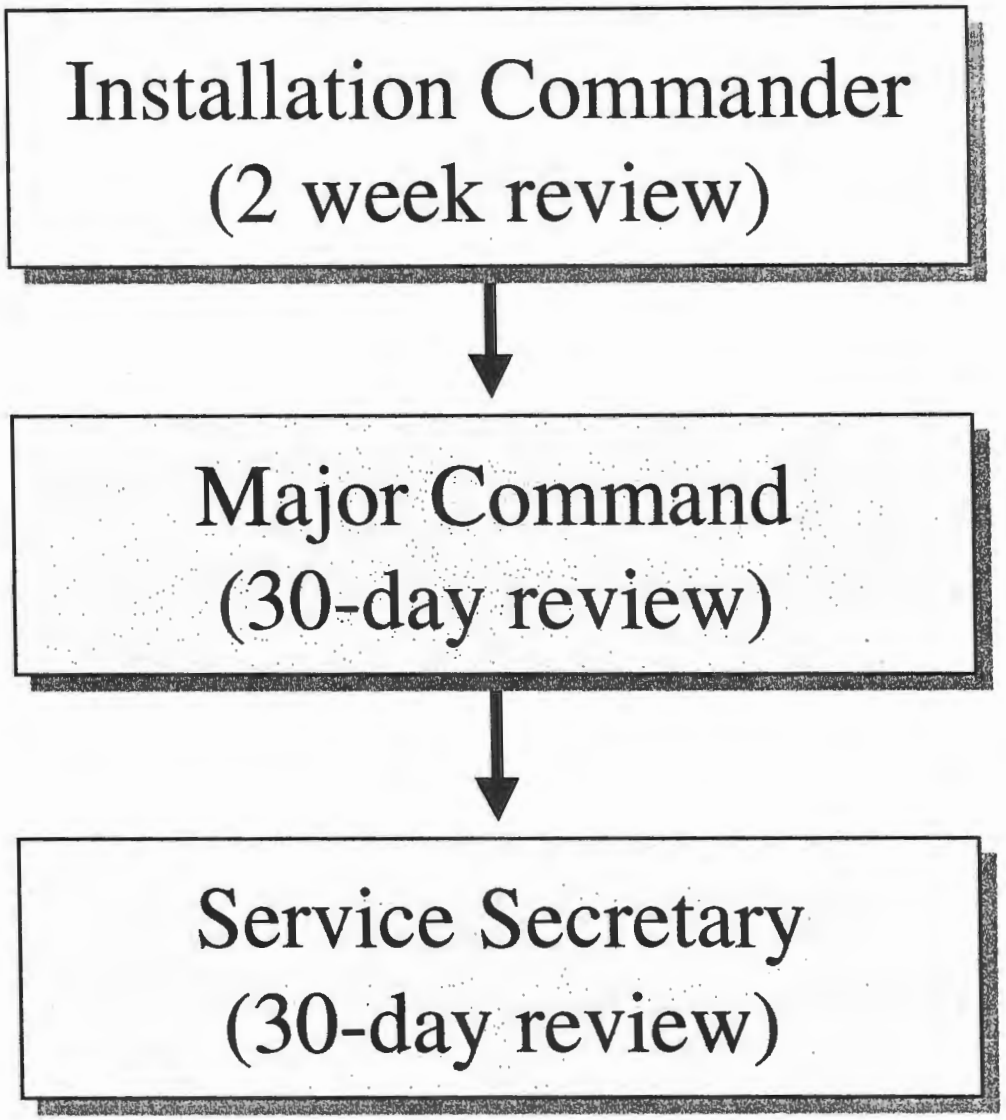
The TAPP Process



The Appeals Process

- Ground rules for appeal
  - ✓ Majority of RAB community members must agree
  - ✓ RAB/TRC must appoint single spokesperson
  - ✓ Written justification must accompany appeal
  - ✓ Appeals must follow process and cannot skip levels

The Appeals Process



Restoration Advisory Board
Meeting Agenda

May 19, 1998
Building 103 Training Room

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes from previous meeting** Mr. Stephen M. Absolom Army Co-chair
7:15	**Peer Review Process** TBD
7:45	**Open Discussion** -Summary of April community meeting -Future agenda topics -Set date for next meeting
8:30	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
FEBRUARY 17, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environment Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Dick Durst/Community Co-Chair
Brian Dombrowski, Pat Jones, Harold Kugelmass, Russell Miller, Ken Reimer

Community RAB Members Not Present:

Anne Herman (excused), Frank Ives, Richard Lewis, Lucinda Sangree(excused), Carmen Serrett, Henry Van Ness (excused), David Wagner (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Keith Hoddinott, USACHPPM
Joanne Ogden, Public Affairs Ofcr/Legal
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):
Drew Bryson, EOD Technology
Heather Clark, Community Member
Neil Chaffie, Ovid Gazette
Antje Baumner

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the February Restoration Advisory Board and outlined the evening's agenda. He then went around the room and asked for introductions of all in attendance.

3. The first hour of the evening was a meeting with community RAB members only without the government members present. Dr. Durst felt it was a positive meeting. They would like to continue that on a semi-regular basis either before the RAB meetings or on alternate months. Dr. Durst summarized the issues that came about in their meeting. They are:

- The community members would like to hear from representatives of DEC/EPA, on i.e., how operation is going, and projects under discussion such as those being discussed at BCT meetings. They would also like to hear from the New York Department of Health.

- Would like to hear a presentation from someone from Seneca Meadows Landfill, i.e., how the landfill is treated, etc,

- In the area of community relations, maybe having the minutes from the meeting summarized and published in the newspaper. You may even include the names of the RAB members as people to contact with their concerns.

- Members would like to look into the TAPP Grants as a possibility for members to hire a consultant to review documentation to utilize since they don't really have the time or expertise to get into the details.

Some questions that were generated:

QUESTION: How do TAPP grants work?

ANSWER: It is a new program that allows for RAB members to apply for a consultant to provide advice on specific projects. It is not for an overall program review. You would have to decide on what specific projects you want. There are specific guidelines. Another alternative is TAG. That may be more in line with what you have discussed you need. Carla Struble will send some more information on this and it will be forwarded in the next mailing to RAB members.

QUESTION: In regards to giving out names of RAB members, would RAB members be willing to give out phone numbers, addresses.

ANSWER: This would be addressed in next meeting when there are more members present.

4. Minutes from the October 1997 meeting and the January 1998 meeting were signed and entered into the record. A change was made to page 4 of the January minutes, which will be included in the final signed copy, sent out to members. (TAG is EPA program. TAPP is the Department of Defense (DOD) program. They were reversed in the minutes).

5. Janet Fallo mentioned she has been working on the DRAFT guidebook for the RAB members. We will be sending it to RAB members for comments, suggestions etc., in the next mailing.

6. Next on the agenda, Stephen Absolom, Army Co-Chair, gave an overview on "The Big Picture" of all the projects that are on-going or planned for Fiscal Year 1998. The institutional area is Priority 1. The family housing area is now Priority 1. There are 51 sites. Right now we have approved 12.8 million. We had originally requested 18 million. We have a lot of work going on. A summary of the status of the projects is enclosed to these minutes. The handout provided at the meeting is also enclosed.

7. Steve opened the meeting for questions.

QUESTION: Dr. Durst wondered of the possibility of looking for site off base for meeting. Would that be viable.?

ANSWER: Yes. That is something we could look into.

8. Steve emphasized that we would be looking for new members. If members didn't show up or call, it is an unexcused absence. Wanted to remind members to call if you can't make the meeting.

9. Some suggestions for the next meeting's agenda items:

- State or EPA discuss views on process.

- Presentation by Mr. John Buck, AEC on TAPP on what it means, how do we apply for it, etc.

- Presentation by representative from Seneca Meadows Landfill.

10. There being no further business, the meeting was adjourned at 9:15 p.m. The next RAB meeting will be held on 17 March 1998 at 7:00 p.m. at the NCO Club. There will not be a separate meeting for community members for the March meeting.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
MAY 19, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation

Government RAB Members Not Present:

Carla Struble, U.S. Environmental Protection Agency (excused)

Community RAB Members Present:

Dr. Dick Durst, Community Co-Chair,
Brian Dombrowski, Frank Ives, Harold Kugelmass,
Russell Miller, Ken Reimer, Lucinda Sangree
Henry Van Ness, David Wagner

Community RAB Members Not Present:

Anne Herman(excused), Pat Jones,(excused)

Environmental Support Personnel Present:

John Buck, USAEC
Mr. Marsden Chen, NYS Department of Environmental Conservation
Michael Duchesneau, Parsons Engineering Science, Inc.
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Mr. Keith Hoddinott, USACHPPM
Mr. Kevin Healy, USACOE, Hunstville, AL
Ms. Robin Mills, HQ US Army BRAC Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Heather Clark, Community Member
Fred Swain (prospective new member), Romulus
Robert Stevens (prospective new member), Romulus
Lee Ann Irwin (visiting), Connecticut
R. A. Young (prospective new member), Varick
Dave & Jan Schneider (prospective new members), Varick

2. LTC Olson provided the opening remarks for the meeting. He welcomed prospective new members in attendance. He also commented that depending on attendance at meetings, if we need to just meet every other month, that would be something for current as well as new members to discuss. He then went around the room asking for introductions of all attending.

3. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the May Restoration Advisory Board and outlined the evening's agenda. The minutes from the February and March meetings were signed and entered into the record. Signed copies will be forwarded to members.

4. Steve introduced Robin Mills from the DA BRAC Office at the Pentagon. She gave a presentation on the Peer Review (PR) process. Seneca Army Depot Activity was visited last year as a pilot. This year PR is in full implementation. Some highlights from her presentations:

· A few years back Congress put pressure to validate the clean up program. The Air Force uses the Peer Review Program. They bring in independent experts to review the program. The Army PR is based on how the Air Force does it. Army experts come in and help provide technical assistance on recommendations for a reviewed project. PR is to ensure they have closeout and get to an end in a cost-effective manner while still protecting health and environment.

· Seneca's PR Team collectively has 28-30 years of experience in environmental business. They are a great source of information.

· Peer Review Team's purpose is to present technical recommendations through Army chain of command.

· It is a not decision making process. What PR is doing this week is reviewing projects that are to be funded FY 99-00. Some are on going. They will make recommendations, give to Steve and BCT to go back and review. Recommendations come up to the BRAC Office. This office weighs all outside factors. BRAC's main mission is based on beneficial reuse.

· They have also done other Peer Reviews at Fort Monmouth, Letterkenny Army Depot, Lexington Army Depot, Fort McClellen, all over the country. They are seeing good results. It is a strong program. The BRAC Cleanup Team can use the Peer Review Team for technical assistance. It is a positive thing.

· Why do we have the process?

To insure to leadership that the program is technically defensible. It also helps to prioritize the work to most effectively use limited resources. It helps to assure a program is cost effective and technically sound.

· Peer Review Team - visible to the highest level. The BRAC Office uses the Peer Review recommendations to brief Congress at hearings. Peer Review process is here to stay.

· Installation resources - continue to support the BRAC program.

· Installation needs to support Peer Review Team with information flow and use Peer Review Team to enhance restoration program.

Some questions that were generated are as follows:

Question: In referring to a slide on the budget, why is the budget down in year 2001?
Answer: It is a six-year process. Costs are up 3rd and 4th year. Money shows a decrease for long term monitoring of system. It starts off low, peaks and then goes down.

Question: Peer Review Team in academia means an independent review. You use the word "independent" review several times. BRAC is part of the Army. What does independent mean? How can they be independent because not outside the Army?
Answer: Yes, they are, i.e., contractors, professors, and some government personnel. They are not all people from Army but Army brings them in.

Question: One of the members likes the redundancy of overseeing the site, i.e., EPA, DEC, Health Department. He also gets the feeling there are sometimes too many cooks, etc. Army/PR can be at odds with regulators. Who has the final word in that instance?

Answer: DOD has for the PR issues. If there is disagreement dispute, the DOD must look at what is required legally. The Army would look at making sure they are doing the right thing legally.

Question: One member expressed concerns that even though there have been a number of processes before, has not much been learned from them? There doesn't seem to be any SOPs, etc., as something to rely on as a model. Has anything been learned from previous BRACs?

Answer: The BRAC didn't change any environmental laws/regulations. We have been following it since 1980's. BRAC process did not cause new regulations. Still follow CERCLA process.

Question: Do any other processes have a decision tree?

Answer: EPA has them. They have always existed. They were not invented solely for BRAC.

Question: In regards to the exclusion area, Seneca has always done what they want. Private industry doesn't have everything that was here. Individual feels it's time the Army fesses up to what has gone on at Seneca. Feels Romulus has been a community held in hostage.

Answer: In all cleanup we want to ensure protection of human health and environment.

Question: Regarding the same topic, if DOD cannot inform public as to what was on base how can have a basis for Peer review to evaluate this?

Answer: Peer Review Team will not be addressing those clean up sites this year. RAB has been briefed on this in last few years. Nothing being hidden here for environmental cleanup.

Question: Part 1 - We would like to believe the Army is doing their best, but as long as stuff is secret, how much other information is being hidden? Heart of problem of the community is believing everything is being done?

Part 2 - Whatever hazards need to be assessed and left behind will the process render it safe? Can we say the Army has been negligent in providing information for process by not identifying the missions?

Answer: LTC Olson once again stated the DOD policy on this issue. "The Army can neither confirm nor deny the presence of nuclear weapons at SEDA." We have openly discussed the possible hazards associated with all missions that could have been performed at the depot. The clean up program has assessed the worst case in this area. We are being open to all possible hazards. The Commander reiterated that he has asked for relief from this policy, and the policy proponent still has not made the decision.

Question: Is there any possibility to have someone on the Peer Review Team to have clearance for this information to look at documentation on this. Need to have someone that is a specialist that can look at information.

Answer: Steve said last year radiation site in the Special Weapons area was looked at. There were comments to that project. Obtained requestor support in what they are doing. Though can't address topic specifically, we are asking for your trust. The Workplan covers all avenues of potential contamination. We are going to greater lengths than need be.

Question: Would it be unreasonable for residents of community to expect cleanup should it affect nuclear waste.

Answer: Our Cleanup has to be more conservative. Steve mentioned we would do an investigation to see if any residuals. All data of cleanup requirements would be available to look at. Marsden Chen then said that the state has discussed the workplan for this site. It includes sampling of bldg walls, floors and ceilings. Any residual including dust will be examined.

Question - Unfortunately, mistrust, information comes forward. A lot of information doesn't get out there. As community member, do we feel comfortable with the process? I don't.

Answer: Marsden - When Workplan is final, it is put in admin record. Then anyone can see it.

Question: We've had a lot of meetings. We've listened to a lot of presentations, some information is way beyond us. What are agencies doing, what are they here for, etc? Individual felt the public agencies should give more information on how they are monitoring things.

Answer: Marsden mentioned that with the RAB they are there as observers but are also there to give information. Their roles in the process is they act as policemen. There is quite a bit of correspondence going back and forth regarding how things are being done. All of these letters are available in the public record.

Question: Is the Peer Review Team addressing anticipated work for 98 or 99?

Answer: Mostly 99 and beyond.

Question: In regards to what is being discussed, the OBG clean up is not being held up because of these discussions?

Answer: That is correct.

Question: For FY99, 2000 and beyond studies, will you come back with another budget.

Answer: Yes, if at that point of project limited recommendations based on data. We may come back and get more information. Get early enough stage to ensure what is being done is sound. Even though BRAC six-year process—completion is not possible. The budget process is currently showing project completion through 05. Long term monitoring goes beyond that.

Question: Do you take into consideration any findings of ATSDR?

Answer: Yes, open to all data. Look at results of assessments. Yes, PR would take their findings into consideration. We have risk assessors on the Peer Review Team. If applicable to project, yes they look at them.

Question: Does someone know length of cleanup if there was a nuclear accident incident?

Answer: The length of time for cleanup depends on level of accidents. We have no cleanup plan for this because none is necessary.

Question: If was?
Answer: Depends on accident. There is no "typical" accident, but all necessary resources from the national level would have been placed on cleanup of any accident until complete.

Question: When griding those buildings - one meter square grids, sampling every one meter grid. Storage building area has been designated that are threats.
Answer: Steve Absolom mentioned still have mission storing and moving DU munitions, and do inspections annually. When the commodity is gone, we will survey buildings looking for releases. Another example would be DRMO junkyard where we would be looking for contaminants. They used to dismantle trucks there. Some gages and dials had radium paint. We won't transfer until it's clean.

Question: Have you heard anything further on DS2?
Answer: The Army is still reviewing its options for this commodity. There are four other depots that have been asked to submit bids to perform this mission, as well as several commercial firms. The Army is analyzing the data, but has not reached a decision yet. We will let you know as soon as we hear anything.

Question: Who is involved in assessing plan for monitoring?
Answer: No issue until removed and cleaned up. Right now no releases. If still there when Seneca goes away, Steve will be here and be responsible for monitoring and cleanup.

Question. Who is doing swiping/testing at SEDA?
Answer: RAD specialists at Seneca.

Question: Are they being monitored by agencies?
Answer: Marsden answered they are overseeing. They don't come all the time because of distance. LTC Olson stated that he is just as interested in cleaning up the environmental sites as you are. The land cannot be transferred until cleaned, and he is responsible for the "truthfulness" of the data. Jim Quinn interjected as we have authority to observe. Paper trail pretty detailed. Consulting firm also has to be accurate.

Dr. Durst interjected as when we started out he was devils advocate to make sure Seneca is doing conscientious job. The big concern was details they can't tell us about. With onsite regulatory agencies being very thorough, we should be very confident they are doing a reputable job. If any problem, can be taken care of very well.

5. At this point, Steve requested that for the benefit of new members looking to see if they are indeed interested in being on the RAB, that current RAB members talk about their experiences/perspective.

- Dr. Dick Durst, Community Co-Chairman, stated that in April they had their private community members only meeting with regulators. He would like to see that every third or 4th meeting. He found that to be very beneficial. He felt that April meeting was a move closer to be able to have the type of discussions we had this evening. Dr. Durst did mention that EPA is usually at meetings but Carla Struble was not able to be here tonight. She normally doesn't miss meetings.

- Frank Ives, a RAB member, mentioned any fault with it not working would lie with RAB members in their lack of participation. He himself at first didn't know RAB member's roles or others roles. Hopes to see RAB members more active.

- Frank Ives feels the role of RAB member is to try to understand what the process is and how it works. Do I think DOD/Army is fulfilling their obligation to the public? If I don't I ask questions.

- Dr. Durst mentioned that a suggestion to get out a notice in the newspaper on RAB meetings indicate topics under discussion, summarize previous meeting. He feels this would help with apathy in public. He has noticed with public meetings that hardly anyone comes. Now a press release is sent out to all media on upcoming meetings.

- Lucinda Sangree, another RAB member, expressed that the RAB is not a decision making board. It is advisory. Because there is no decision, it is hard for some people to understand why they are coming. Lucinda suggested because it is an advisory board, it is difficult at first, until you can realize your role as you're a non-expert. Stick with it. It is hard to image until you try it. It's a learning process.

Question: What is the most representation you have on reuse?
Answer: Pat Jones, IDA, but she was unable to attend tonight. In the past, Mary Ann Krupsak and Richard Sisson, LRA, attended. Because LRA has moved to an implementing agency, the IDA, those LRA members chose not to continue.

- Marsden mentioned that 20 years ago DEC could make decisions without the public. Now they have to have citizen participation. If EPA not doing it then DEC will. It is in the regulation that the public be involved, Their input is very important. The more vocal the public the better the process can be.

- Dr. Durst asked if other town supervisors came if it would be more beneficial.

- Ken Reimer, a RAB member, mentioned a concern he has as a town board representative. The warehouse area on the map is shown as disregarded. Romulus Town Board is worried about water/sewer. Looking at industry to rely on for this is concerning. If can't use warehouse area or Q area it impacts Romulus and its citizens as well as employment in the area. People have the desire to know what is going on.

- A suggestion was to send news releases to town boards, sending them copies of minutes, handouts, etc.

6. Steve opened the floor to prospective new members if they had any questions.

Question: What was the April meeting.
Answer: In April the RAB community members only met with regulators informally. They talked to regulators to get some their concerns answered.

LTC Olson reiterated that the normal format for meeting is different than it was tonight tonight. An example would be a presentation on a plan on what doing in 98, with a description of sites and plan for cleanup. Once experts brief us, then there are questions from the group and we would then move on to next presenter.

Janet Fallo mentioned she has been working on a guidebook. She is filling information in on the program which would be helpful to new members as well as current members. It should be done in the next month or so.

7. Steve opened the floor to any future agenda items to address:

- Seneca Meadows Landfill, how it's constructed, etc.

- Info on all Area landfills. Steve will look into this.

- What's happening this summer.

- Update or tour of sites.

8. There being no further business, the meeting was adjourned at 9:25 p.m. The next RAB meeting will be held on June 16 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Restoration Advisory Board
Meeting Agenda

June 16, 1998
NCO Club

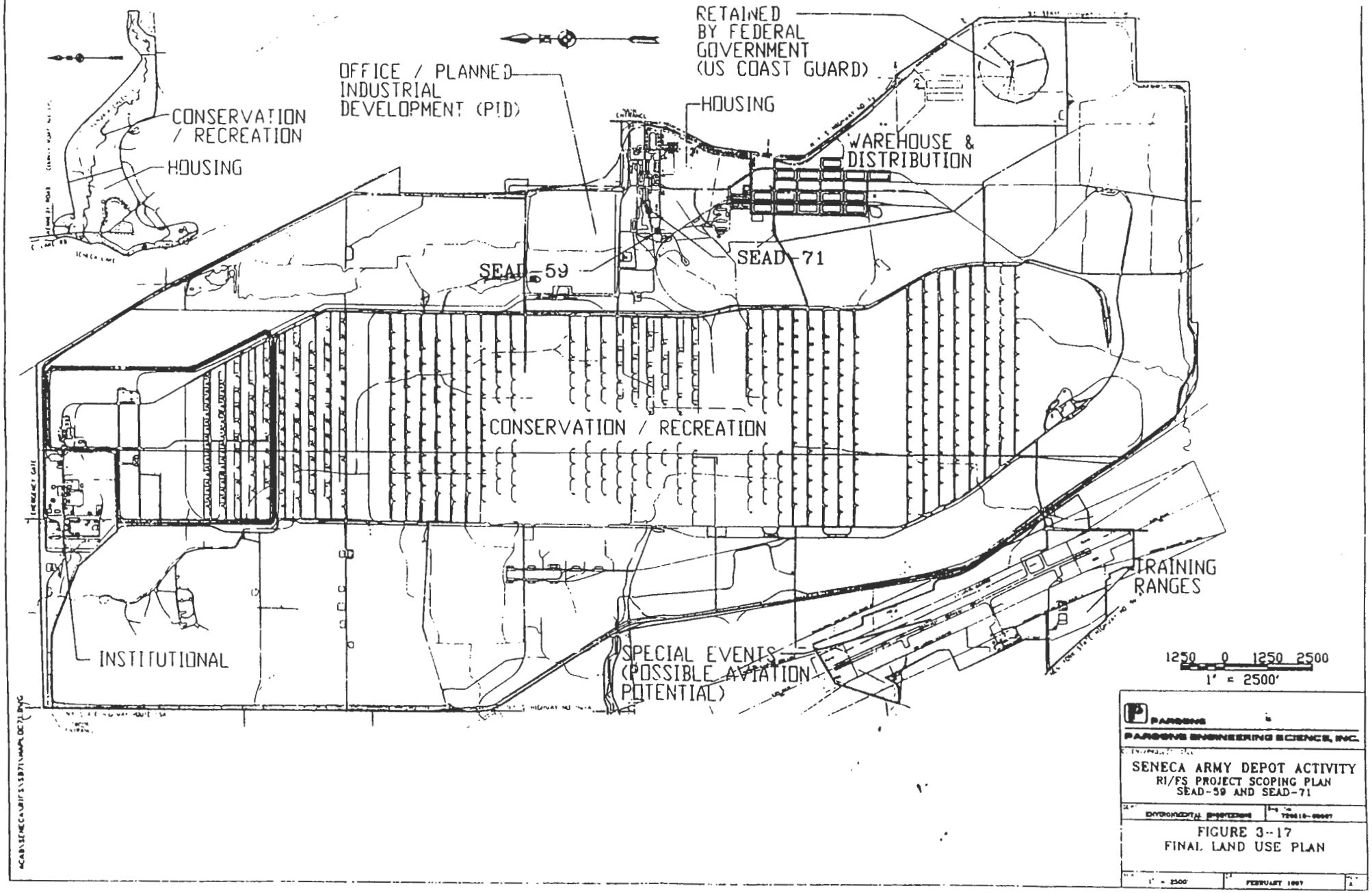
7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes from previous meeting** Dr. Dick Durst Community Co-Chair
7:10	**Summary of Fieldwork Results at EBS Sites** Mr. Mike Duchesneau Project Manager, Parsons Engineer Science
7:25	**Summary of Fieldwork Results at Paint Disposal Area (SEAD 59, 71)** Mr. Mike Duchesneau Project Manager, Parsons Engineer Science
7:40	**Status of Environmental Restoration Projects** Ms. Janet Fallo Project Manager, USACE NY District
7:50	**Break**
8:00	**Landfills – Requirements and Concerns** Mr. John Swanson Solid Waste Engineer, Dept of Environmental Conservation, Avon, NY
8:30	**Open Discussion**
9:00	**Adjourn**

Presentation to the RAB
June 16, 1998

Update on the Fill Area and Alleged Paint Disposal Sites, (SEAD-59 and SEAD-71),

Michael Duchesneau, P. E.

PARSONS ENGINEERING SCIENCE



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

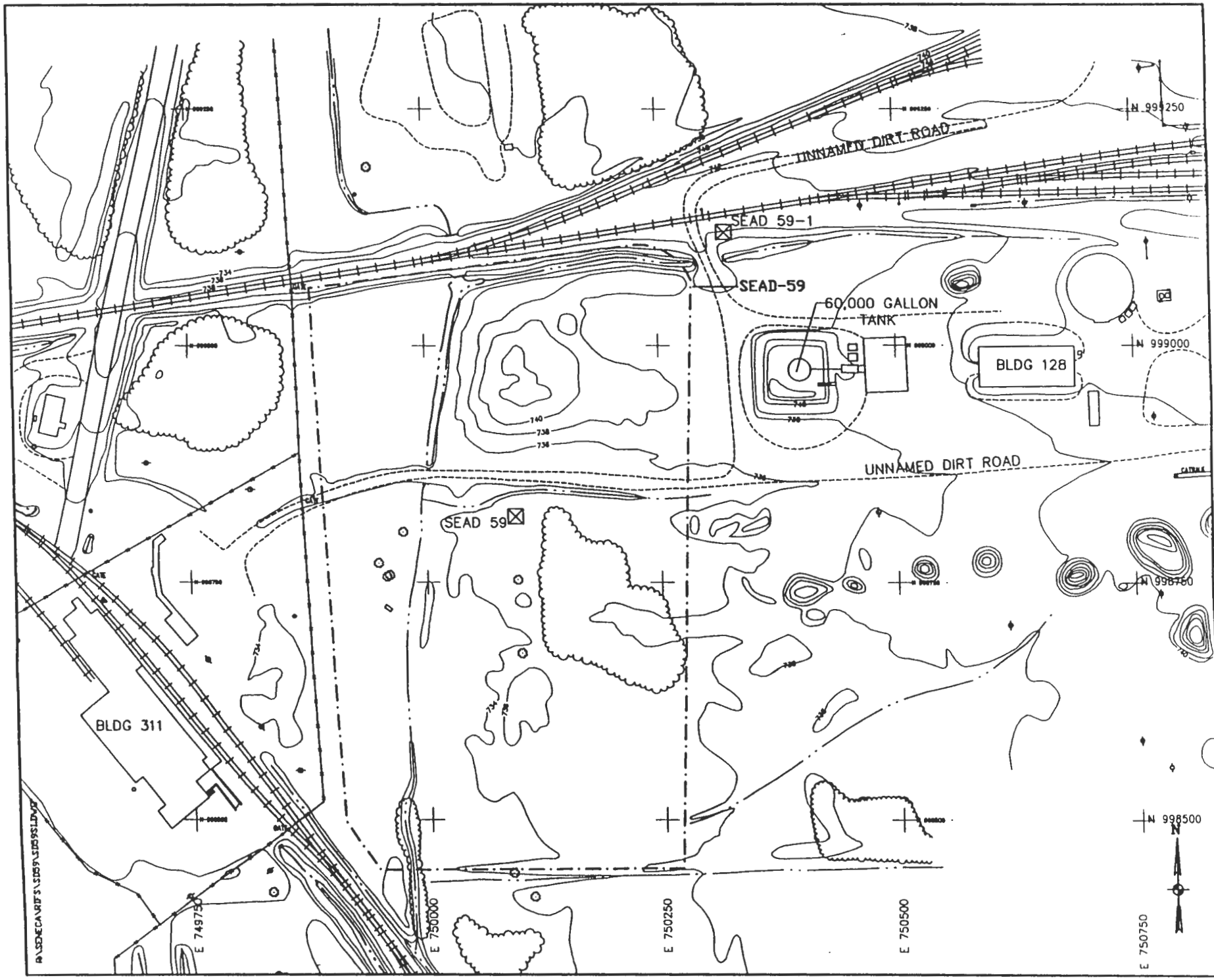
SENECA ARMY DEPOT ACTIVITY
RI/FS PROJECT SCOPING PLAN
SEAD-59 AND SEAD-71

ENVIRONMENTAL SCIENCES

FIGURE 3-17
FINAL LAND USE PLAN

1" = 2500'

FEBRUARY 1997


UNNAMED DIRT ROAD
SEAD 59-1
SEAD-59
60,000 GALLON TANK
BLDG 128
UNNAMED DIRT ROAD
SEAD 59
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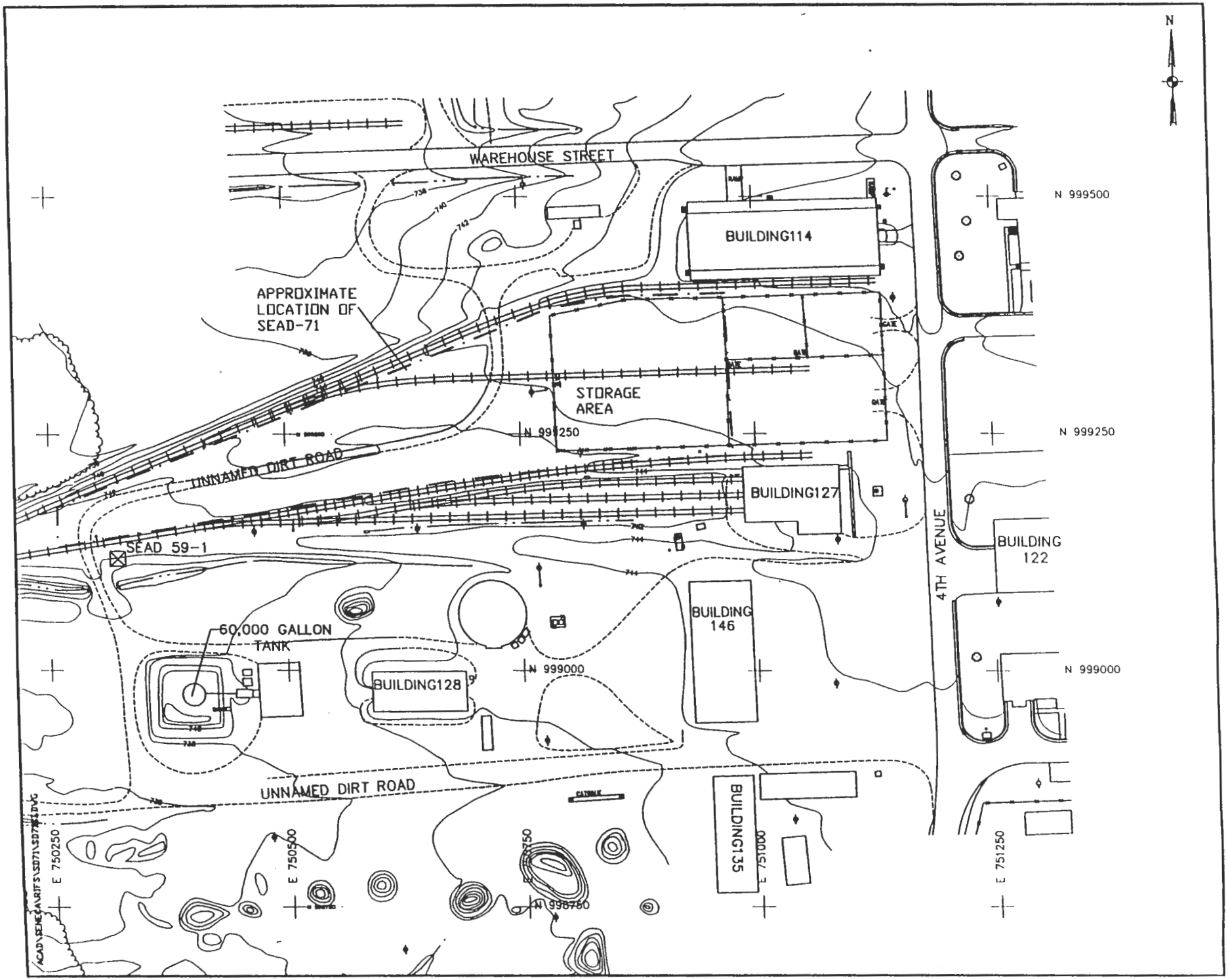
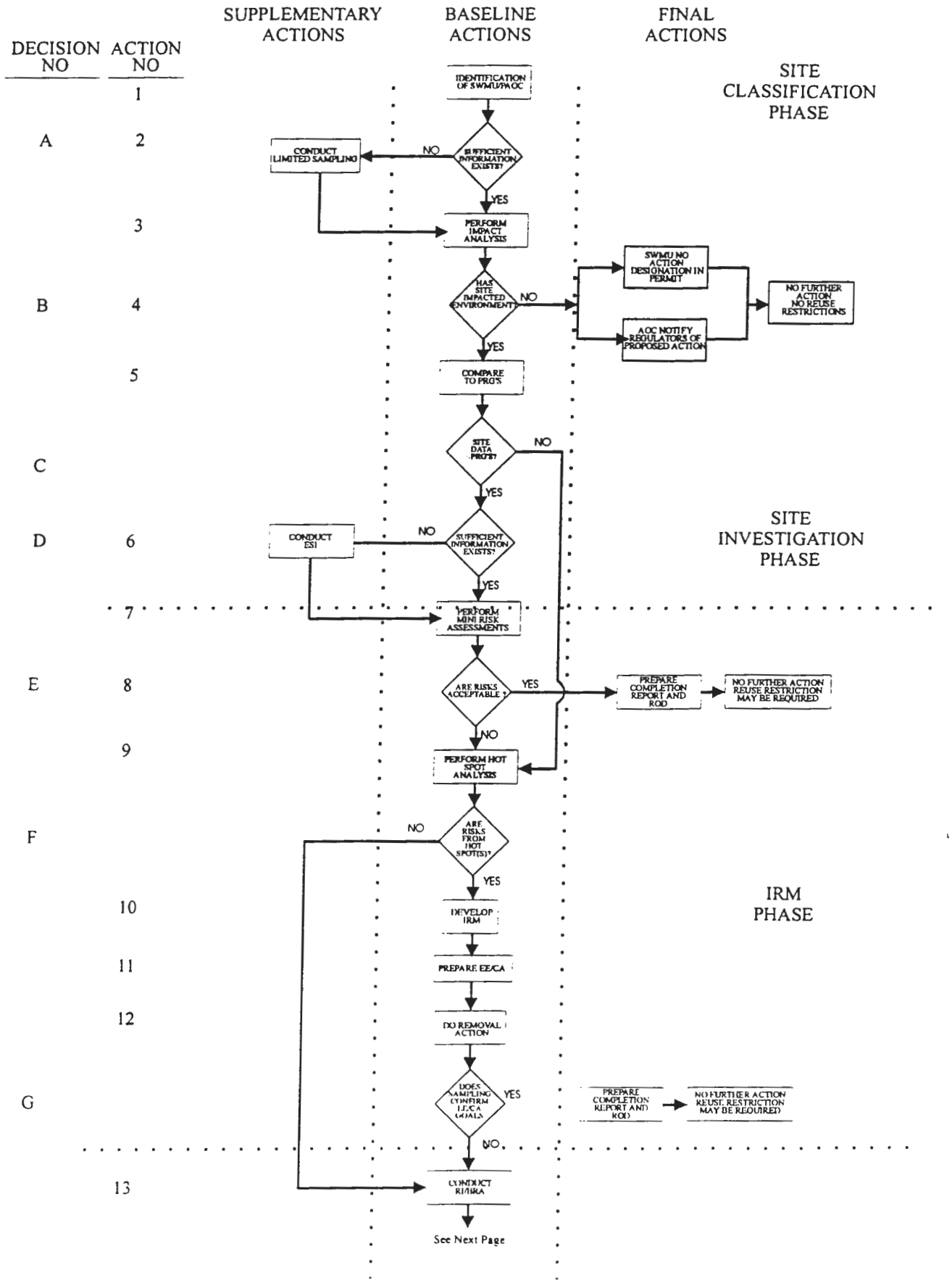

N
WAREHOUSE STREET
BUILDING114
APPROXIMATE LOCATION OF SEAD-71
STORAGE AREA
N 999250
UNNAMED DIRT ROAD
BUILDING127
SEAD 59-1
4TH AVENUE
BUILDING 122
60,000 GALLON TANK
BUILDING 146
N 999000
BUILDING128
UNNAMED DIRT ROAD
BUILDING135
N 999500
E 750250
E 750500
E 750750
E 751000
E 751250
N 998750

Background at SEAD-59 and SEAD-71

- *Fill Areas for Construction and Oily Debris*
- *(SEAD-59 ~6 Acres;SEAD-71 ~2 Acres)*
- *Current and Future Industrial Area*
- *Classified as Areas of Concern (AOC)*
- *Expanded Site Inspections (ESI)s*
- *Phased Investigation Underway*

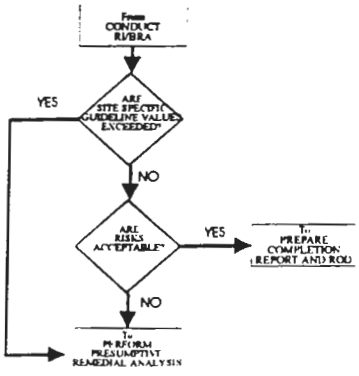
SENECA ARMY DEPOT ACTIVITY
Decision Criteria Flowchart



SENECA ARMY DEPOT ACTIVITY
Deccision Criteria Flowchart

DECISION NO	ACTION NO	SUPPLEMENTARY ACTIONS	BASELINE ACTIONS	FINAL ACTIONS
	13		CONDUCT RI/BRA	
H			ARE RISKS ACCEPTABLE? (See Below) — YES → PREPARE COMPLETION REPORT AND ROD → NO FURTHER ACTION REUSE RESTRICTION MAY BE REQUIRED	
	14		NO → PERFORM PRESUMPTIVE REMEDIAL ANALYSIS	
I			DOES PRESUMPTIVE REMEDY EXIST? — NO	RI/FS/RD/RA PHASE
	15		YES → PREPARE EE/CA	
	16		DO REMOVAL ACTION	
J			DOES SAMPLING CONFIRM EE/CA GOALS — YES → PREPARE COMPLETION REPORT AND ROD → NO FURTHER ACTION REUSE RESTRICTION MAY BE REQUIRED	
	17		NO → PREPARE FS	
K			SELECT REMEDY	
	18		PREPARE PRAP/ROD	
	19		PERFORM RD/RA → PREPARE CLOSEOUT REPORT → NO FURTHER ACTION	

Detail of Decision H



SEAD-59 & SEAD-71 Decision Process Summary

- *Final ESI Issued; April, 1995*
- *Final RI Workplan Issued, April 14, 1997*
- *RI/FS Recommended*
- *RI Phase 1 Fieldwork Completed, Nov. 1997*
- *Presumptive Remedy Under Consideration*

Summary of Site Conditions at the Fill Area SEAD-59

PARSONS ENGINEERING SCIENCE

Field Tasks Summary at SEAD-59,

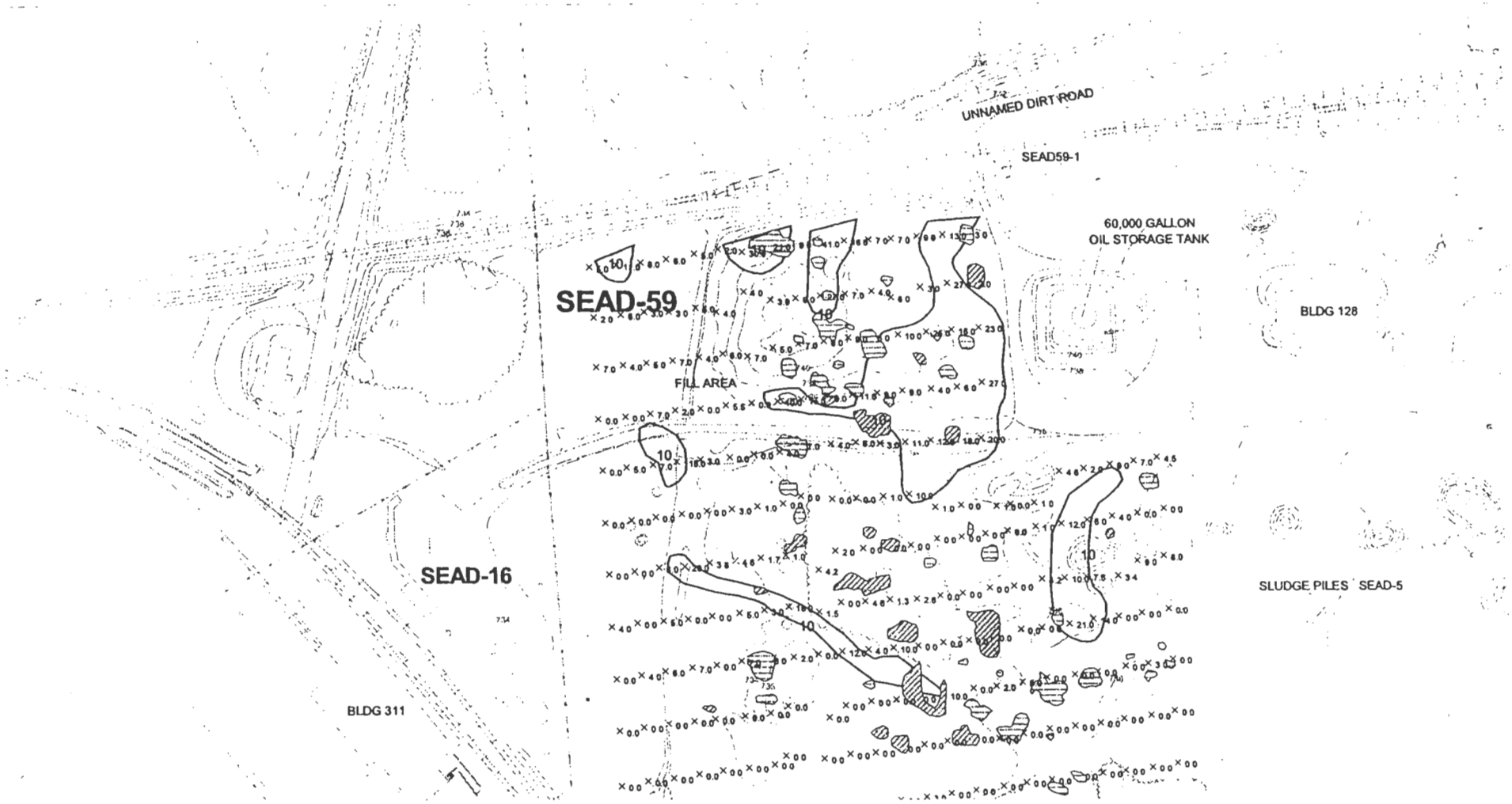
- *Seismic Refraction*
- *Electromagnetic Survey (EM-31)*
- *Ground Penetrating Radar (GPR)*
- *Soil Gas Survey (240 Points)*
- *Soil Borings (21 Borings)*
- *Test Pits (18 Test Pits)*
- *Monitoring Wells (3 Wells)*

Groundwater Sampling Summary for SEAD-59

- *No VOCs Detected*
- *TPH Detected,2 Downgradient Wells*
- *3 Metals above GA Standard*
  - *Fe, Mn & Na*

Soil Sampling Summary for SEAD-59

- *VOCs Exceeding TAGMs:*
  - *Benzene (3/56, 5.9 ppm, Max.)*
  - *Toluene (1/56, 830 ppm, Max.)*
  - *Xylenes (1/56, 1,000 ppm, Max.)*
- *TPH (No TAGM Available)*
  - *TPH (19/21, 7,870 ppm, Max.)*



Base Map Features

Suspected Source of Geophysical Anomalies

- Metal
- Unknown

Soil Gas

- 20 ppm or greater
- 10 ppm - 20 ppm

100 0 100 200 Feet

Soil Gas Sampling Data

10 10 ppm or Greater

N

Seneca Army Depot Activity

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

FIGURE 2
SENECA ARMY DEPOT ACTIVITY
Soil Gas Sampling Data

JOB NUMBER	DATE	SHEET No. 1 OF 1
731747-02000	June, 1996	

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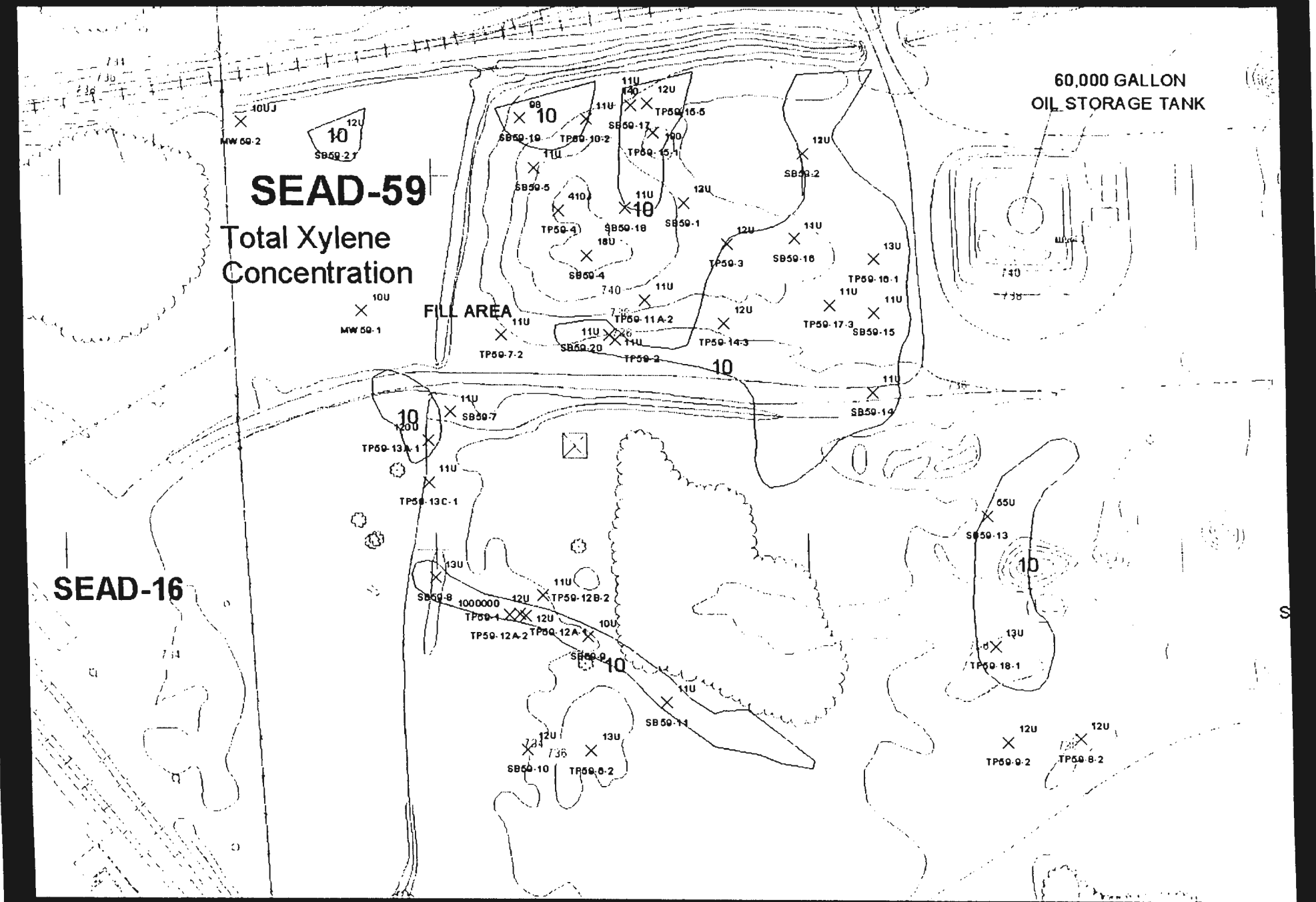
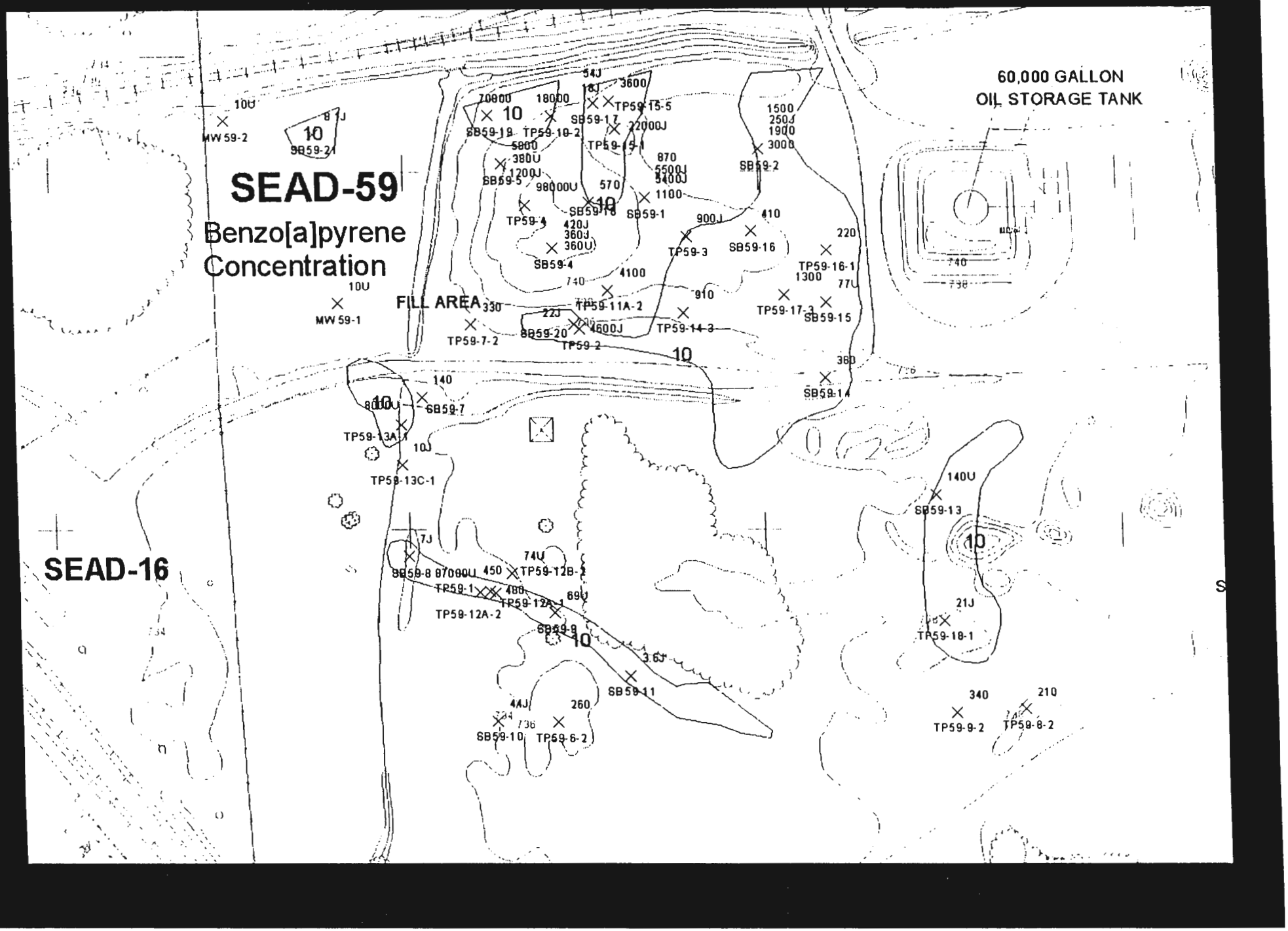

SEAD-59
Total Xylene
Concentration
60,000 GALLON
OIL STORAGE TANK
FILL AREA
SEAD-16
MW59-2
SB59-21
MW59-1
SB59-19
TP59-10-2
TP59-15-5
SB59-17
TP59-15-1
SB59-5
TP59-4
SB59-18
SB59-1
SB59-4
SB59-2
TP59-3
SB59-16
TP59-16-1
TP59-17-3
SB59-15
TP59-11A-2
TP59-14-3
SB59-20
TP59-7-2
SB59-14
SB59-7
TP59-13A-1
TP59-13C-1
SB59-13
TP59-18-1
SB59-8
TP59-12B-2
TP59-1
TP59-12A-2
TP59-12A-1
SB59-9
SB59-11
SB59-10
TP59-8-2
TP59-9-2
10
11U
12U
13U
10U
65U
1000000

Soil Sampling Summary for SEAD-59

- *PAHs (11) Exceeded TAGMs:*
  - *Benzo(a)Anthracene (31/55, 67 ppm, Max.)*
  - *Benzo(a)Pyrene (33/55, 70 ppm, Max.)*
  - *Dibenz(a,h) Anthracene(29/55, 17 ppm,Max.)*
  - *Chrysene (26/55, 63 ppm, Max.)*
  - *Benzo(b)Fluroanthene (13/55, 58 ppm, Max.)*
  - *Benzo(k)Fluroanthene (12/55, 48 ppm, Max.)*


SEAD-59
Benzo[a]pyrene
Concentration
SEAD-16
FILL AREA
60,000 GALLON
OIL STORAGE TANK
MW 59-2
SB59-21
MW 59-1
SB59-18
TP59-10-2
TP59-15-5
SB59-17
TP59-15-1
SB59-5
SB59-2
TP59-4
SB59-1
SB59-4
TP59-3
SB59-16
TP59-16-1
TP59-11A-2
TP59-14-3
TP59-17-3
SB59-15
TP59-7-2
SB59-20
TP59-2
SB59-14
SB59-7
TP59-13A-1
TP59-13C-1
SB59-13
TP59-18-1
SB59-8
TP59-1
TP59-12B-2
TP59-12A-1
TP59-12A-2
SB59-9
SB59-11
SB59-10
TP59-6-2
TP59-9-2
TP59-8-2

Summary of Site Conditions at SEAD-71

PARSONS ENGINEERING SCIENCE

Field Tasks Summary at SEAD-71

- *Seismic Refraction*
- *Electromagnetic Survey (EM-31)*
- *Ground Penetrating Radar (GPR)*
- *Surface Soils (20 Locations)*
- *Test Pits (6 Test Pits)*
- *Monitoring Wells (3 Wells)*

Groundwater Sampling Summary for SEAD-71

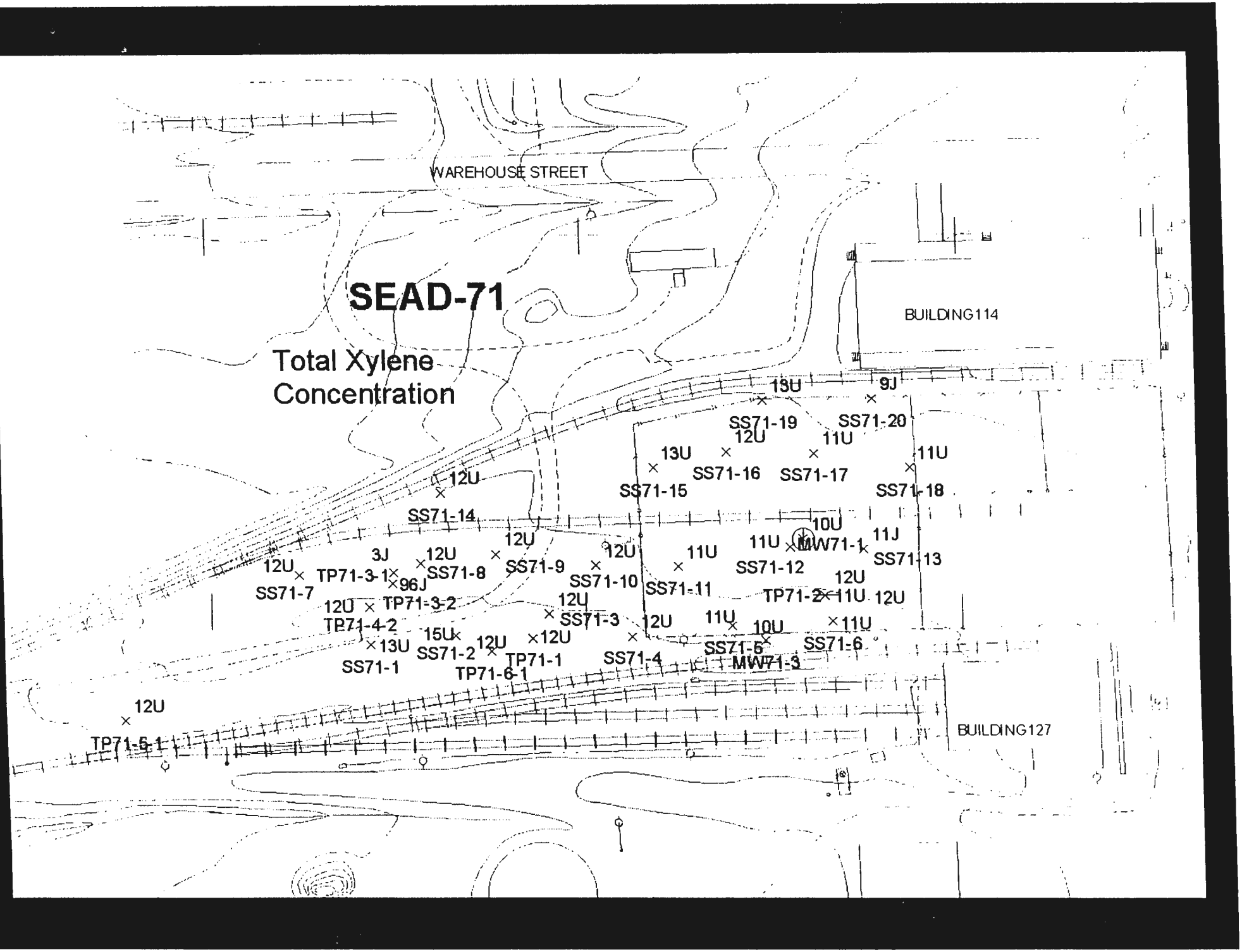
- *No VOCs Detected*
- *No Semi-Volatile Compounds Detected,*
- *No PCBs or Pesticides Detected*
- *2 Metals above GA Standard*
  - *Fe and Mn*

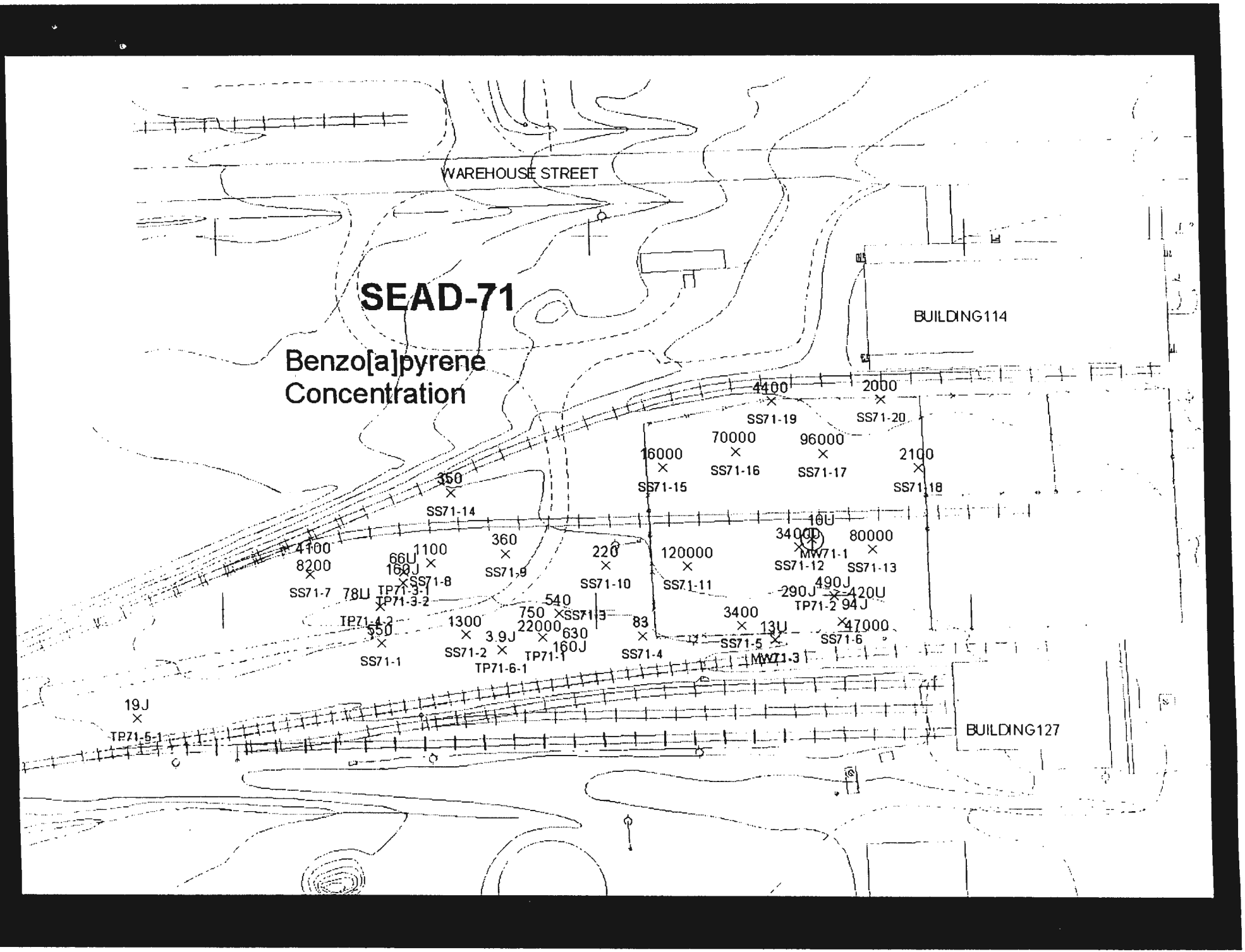
Soil Sampling Summary for SEAD-71

- *VOCs Exceeding TAGMs:*
  - *Acetone (1/35, 0.26 ppm, Max.)*
- *Pesticides Exceeding TAGMs:*
  - *DDE & DDT (1/39, 6.3 & 4.8 ppm, Max.)*
- *No PCBs Exceeded TAGMs*

Soil Sampling Summary for SEAD-71

- *PAHs (14) Exceeded TAGMs:*
  - *Benzo(a)Anthracene (29/39, 150 ppm, Max.)*
  - *Benzo(a)Pyrene (32/39, 120 ppm, Max.)*
  - *Dibenz(a,h) Anthracene(30/39, 25 ppm,Max.)*
  - *Chrysene (26/39, 150 ppm, Max.)*
  - *Benzo(b)Fluroanthene (18/39, 88 ppm, Max.)*
  - *Benzo(k)Fluroanthene (15/39, 130 ppm, Max.)*


SEAD-71
Total Xylene
Concentration
WAREHOUSE STREET
BUILDING114
BUILDING127
SS71-19
SS71-20
SS71-16
SS71-17
SS71-15
SS71-18
SS71-14
SS71-8
SS71-9
SS71-10
SS71-11
SS71-12
SS71-13
SS71-7
SS71-3
SS71-2
SS71-1
SS71-4
SS71-5
SS71-6
MW71-1
MW71-3
TP71-3-1
TP71-3-2
TP71-4-2
TP71-1
TP71-6-1
TP71-5-1
TP71-2
13U
9J
12U
11U
3J
96J
15U
10U
11J


SEAD-71
Benzo[a]pyrene
Concentration
WAREHOUSE STREET
BUILDING114
BUILDING127
4400
SS71-19
2000
SS71-20
70000
96000
16000
SS71-16
SS71-17
2100
SS71-15
SS71-18
350
SS71-14
10U
34000
80000
MW71-1
4100
1100
360
220
120000
SS71-12
SS71-13
8200
66U
160J
SS71-8
SS71-9
SS71-10
SS71-11
490J
SS71-7
78U
TP71-3-1
TP71-3-2
290J
420U
TP71-2
94J
540
750
SS71-3
3400
TP71-4-2
1300
22000
630
83
13U
47000
550
3.9J
160J
SS71-5
SS71-6
SS71-1
SS71-2
TP71-1
SS71-4
MW71-3
TP71-6-1
19J
TP71-5-1

Status of Environmental Projects

Janet R. Fallo
USACE, New York District

June 16, 1998

Ash Landfill
SEAD- 3, 6, 8, 14, 15

- ✓ Draft Proposed Remedial Action Plan (PRAP) submitted, we are addressing comments
- ✓ Discussing the need for a vegetative cover on the non-combustible fill area due to high levels of metals
- ✓ Iron filings trench project will happen this summer

Open Burning Grounds
SEAD- 23

✓ Draft Final Record of Decision (ROD) submitted, we are addressing comments

- ROD needs to be final to start cleanup
- Applicable or Relevant and Appropriate Requirements (ARARs) are being discussed for groundwater
- Explosive Safety requirements changed
- Workplan for cleanup is under review

Deactivation Furnaces
SEAD- 16, 17

✓ Draft Final Remedial Investigation (RI) and Draft Feasibility Study (FS) under review

✓ Not likely to use furnace at SEAD- 17 to clean soil

- Resource Conservation and Recovery Act (RCRA) closure requirements
- Final determination has not been issued

Fire Training Areas
SEAD- 25, 26

- ✓ Final Remedial Investigation (RI) submitted
- ✓ Draft Feasibility Study under review
- ✓ Treatability Study for Bioventing this summer

Radiation Sites
SEAD- 12, 63

- ✓ Remedial Investigation (RI) Workplan for SEAD- 12
  - New EPA guidelines (May 14, 1998) for Ecological Risk Assessment
  - Finalized this summer so RI can begin
- ✓ Engineering Evaluation/Cost Analysis (EE/CA) and Removal Action considered for SEAD- 63

Paint Disposal Areas
SEAD- 59, 71

✓ Remedial Investigation (RI)

- Partial fieldwork for the RI was performed due to a phased approach discussed in Peer Review 1997

✓ Report on fieldwork due this month

MINUTES
RESTORATION ADVISORY BOARD
JUNE 16, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair (TDY)

Community RAB Members Present:

Dr. Dick Durst, Community Co-Chair,
Jeffrey Beall, Brian Dombrowski, Frank Ives,
Frankie Young Long, Robert McCann, Ken Reimer,
Lucinda Sangree, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Henry Van Ness,
David Wagner

Community RAB Members Not Present:

Anne Herman (excused), Pat Jones (excused),
Harold Kugelmass (excused), Russell Miller

Environmental Support Personnel Present:

Mr. John Swanson, NYSDEC R-8
Michael Duchesneau, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Antje Baumer
Heather Clark, Community Member
Mr. Neil Chaffie, Ovid Gazette

2. LTC Olson provided the opening remarks for the meeting. He welcomed all members in attendance. He then went around the room asking for introductions of all attending.

3. Dr. Richard Durst, the Community Co-Chair, welcomed members and support staff to the June Restoration Advisory Board and outlined the evening's agenda. The minutes from May meeting were signed and will be accepted at the next meeting when Stephen Absolom signs them.

4. Mike Duchesneau then gave a presentation on the fieldwork results at EBS sites.

Some highlights from presentation:

The Environmental Baseline Survey (EBS) is part of the BRAC process. It came to light there were 25-30 different sites that needed to be further evaluated. Back in February we investigated those sites. They prioritized those sites from high, medium and low. They have submitted the data to the COE for review. More documents are still being prepared. They will be submitted within another week or so. They investigated 35 different sites. Of the sites, one of the sites that looked like a potential for future concern was the small arms range. We have not formally discussed all these results. At a later date we will provide that information.

Mike then directed the group to review the handout on SEAD 59/71 (enclosed). He presented an update on the Fill Area and Alleged Paint Disposal Sites (SEAD-59 and SEAD-71). Some highlights of the presentation:

- Back in November/December timeframe they looked at SEAD 59/71. SEAD 59 was a concern fill area 60,000 gallon storage facility. Close to 59 is SEAD 16. Next to 59 is 71. This is an area where there was paint disposal.

- Background - Good-sized sites in an area where the future use is as an industrial area. Currently there are no plans for residential. Back in 1994 expanded the site investigation. Implemented quick removal action. Decision tree expanded that to be more detailed and flexible so Army can implement removal. Each site was ranked with series of decisions based on ESI. Because of size and complexity, moved into remedial investigation.

Some questions that were generated:

Question: Area is classified as industrial. If it should change to residential, would it be more stringent?
Answer: Yes. The Army will take into consideration its use as defined by LRA. If its use changes before turnover, do another EBS.

LTC Olson interjected that if it changes, we are directed to use the reuse plan and follow it. The Army will clean up to point of reuse. If different i.e., industrial to residential, costs will be borne by the person contracted to use for residential.

Carla interjected that they would look at costs associated to clean up to residential. If turns out the additional cost is not much more, the Army might decide to do that.

Question: There is a reuse circumstance in existence. What is it?
Answer: The LRA - Local Redevelopment Authority (Industrial Development Agency now) developed the plan. There is interest in certain areas for residential. These areas were pointed out on the map. (NOTE: New members requested a copy of the map and one will be submitted with these minutes).

Question: In pointing out the yellow part on the map that is industrial, this is the area where we expect a proposed prison. Isn't that considered residential?
Answer: When we did an EBS we looked at the possibility of a prison. Site within the yellow was clean and ready to go. The prison is in the state budget. It is clean to that standard.

Summary -

We have done seismic refraction to define depth of bedrock.

We have done electromagnetic survey to define buried metallic objects.

We have done soil gas survey to identify areas where high volatiles --removing samples of gas.

We have done soil borings and test pits.

Question: How big is SEAD 59, just the area above or the whole thing?

Answer: About six acres.

Question: Are areas on bottom translocation material constantly moving?

Answer: No. Not talking groundwater, just soil. Have not done a lot of groundwater. If define extent of problem, it may be cost effective to remove. Then go back and see what kind of groundwater problem. Trying to save money until after cleanup. Then put the wells in.

Question: In the meantime, water moving, where going to, whom does it effect.

Answer: Groundwater pretty much moves across. Look at land contours and have not found a lot of groundwater movement in this area. TPH finding shows it hangs up in soil. Water is moving away from 96.

Question: Wondering if there is a way to get a handle on where contamination edge? My concern is with the lake.

Answer: In SEAD 16 we have not detected this. For that reason, decision focuses on soil at this point.

Question: How deep is pit at SEAD 59?

Answer: 8-10 feet deep. Historical information has been pretty accurate. There is also rock under whole place. Glacial till (sand, gravel and clay) 5-10 feet thick. Once get below that material - layer of rock/shale) under that is more shale. Shale doesn't transmit water. Looking at surface soil contamination. Because of high clay, doesn't allow water to transmit.

Question: Regarding soil sampling, you found concentrations of oil residue, diesel, coal tar, Did you look for dioxins?

Answer: No, did not look for them. Only two pesticides generate dioxins and we haven't found those pesticides there. Dioxin testing is very costly.

Question: Regarding SEAD 71, why would there be pesticides there?

Answer? Yes, odd but DDT was widely used for a long period of time during WWII. Could eventually go back to farming days.

5. Janet gave a brief update on the status of environmental projects going on. The ongoing projects are:

Ash Landfill
Opening Burning Grounds
Deactivation Furnaces
Fire Training Areas
Radiation Sites
Paint Disposal Areas

The attached handout summarizes the information. At the next meeting she will give an overview of the process.

6. Next, Mr. John Swanson from DEC gave a presentation on Landfills. Some points of interest:

He gave a brief history of the design of old town landfills.

In the past the garbage was open. There were no gates nor restrictions. It would be an old swamp, gravel pit, worthless piece of land. In the 70's the health department cracked down. Put a cover on it. When do landfilling put soil over it and walked away.

In the 70's DEC came into being.
In the 80's they regulated soil liners
In 1985 - seeing composite liners 18-24 inches in clay
In 1988 - Saw the first set of real regulations.
Information is available on Internet

He displayed a diagram showing following:
Liner
24 inch clay geomembrane
leak detection system
primary liner system and geomembrane
Based on hydraulic control.
Depth of liquid on prime liner. Minimum to maximum extent. Intimate contact with liner. If defect in liner, clay soak up liquid and act as a bandage to seal that up.

If cell exposed, check and see where leak. Have backup liner. Most of today's landfills being built are going deep in ground below water table.

- Some questions that were generated:

Question: How thick is the solid piece in the middle?

Answer: 100-250 feet thick. Put in 10-ft. layers and layer of soil.

Gas collection - bigger landfills, collect from way down deep

Quality end up with depends on how much effort put in quality control during construction.

Facility - before first piece liner material - go out on site. Check surface first. Pick up angular pebbles.

Question: On geomembrane, what is lifetime of material?

Answer: Forever as we know it.

What Seneca Meadows is doing is putting in leachate collection. They have been digging up garbage 25 years old. It looks like it did when put in. Liners will last.

Studies exposing liners to leachate materials show they hold up and have high density.

Every 500 linear feet - go out and do destructive test. Cut a hole 28 X 24 into strips and send to a lab and do pull test to see if seam fails before material fail.

Point of quality control. Each day after lunchtime and anytime change operator on fusion liquid
- have to be recertified.
- high temperature
- speed
- liner clean

very hi-tech operation.

He showed a photo of High Acres which is located in the town of Perinton in Monroe County on the East Side.

They put in wall and collection system in 1991-92.

It is a well-run facility and accepts No. 3 volume of waste, about 2000 ton per day.

- More questions that were generated:

Question: Are they in direct competition with Seneca Meadows?
Answer: Yes. Competitive nature keeps price down.

Question: Where is there a hazardous waste landfill?
Answer: Model City, Niagara County

Question: Material from here not hazardous waste?
Answer: Once solidified it is no longer hazardous. Then can be accepted at a sanitary landfill.

He then gave information on the Seneca Meadows/Tantillo Landfill. Some highlights are:

History

Original landfilling started on Route 414 and proceeded north with long strip of land (old Tantillo)

1974 - Operations moved across
Around 1981 applied for permit w/DEC
105 acres
original area unlined
They are in the process of installing perimeter in leachate collection system.
Getting better control
Remainder has soil liner. Pump leachate out of that.
Ponds - storm water retention
Sediment settles out of it
Have to get application to discharge water
1980 ponds - water in/out uncontrolled
Samples show no impact

Question: How deep is rock?
Answer: Rock closest 60/70 feet below surface.

Question: No same design as other?
Answer: Yes, but has soil liner and leachate collection.

Question: If someone applied permit today, could make a facility like that?
Answer: No, they couldn't.

Question: It is true wetland involved?
Answer: To west all around north. Wetlands all over. A portion was wetland before regulations came in to play.

Question: Any signs of leaks?
Answer: No impact from groundwater on tight soils. He referenced photo - where excavation perimeter leachate collection. No sign of anything in soil. Clean as can be. No staining, no smell.

Question: Why not build landfill at SEAD? Then wouldn't have to move material.
Answer: Have to look at less costly method. It is less costly to take to commercial rather than build one on site.

Question: Section over on RTE 414 where Sesslers dump out D2's? Is it being monitored?
Answer: No, not monitored.

Question: Was there a public meeting on that permit?
Answer: Has been a lot of them. Will be a legislative hearing probably in the fall.

Question: Whereabouts near Tantillo is the new Little League Field going to be?
Answer: Near the North Road.

Question: Big question/concern is the material from SEDA. We all recognize issue associated here. If landfill permitted and can accept waste, have no basis to say go somewhere else.
Answer: Over last 4-5 years, landfill operators realized that for daily operations, hauling in huge amount of soil - 50-100 loads a day. Also bring in contaminated soil from petroleum tank removals, construction debris, and paper sludge, put in there in bulk. Over the last 4-5 years used as daily cover. Cuts down on soils to bring in. Saves individual money in disposal fees. Worked out well. Only used in areas that won't be touched by people and truck traffic. Used on sloping part of walking face. It is compacted down - covered up with 6 inches soil - keeps birds out. Some facilities use incinerator ash - ground up construction debris - (wood, drywall) anticipate if contaminated soils from here, use that way. The rest can't be exposed for more than 24 hours and covered up with clean soil. Most contaminated soils would be solidified on site, and moved to facility that would accept it. Seneca Meadows doesn't do solid on site. High Acres does.

7. Dr. Durst made a motion to wrap up the meeting. We will reconvene on 18 August. If you think of any items to cover, contact Dr. Durst, Stephen Absolom or Laura Sposato to put on agenda.

8. There being no further business, the meeting was adjourned at 9:45 p.m. The next RAB meeting will be held on August 18 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
August 18, 1998 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
James Quinn, NYS Department of Environmental Conservation

Government RAB Members Not Present:

LTC Donald Olson, SEDA Commander (excused)
Carla Struble, U.S. Environmental Protection Agency (excused)

Community RAB Members Present:

Dr. Dick Durst, Community Co-Chair,
Antje Baeumner, Jeffrey Beall, Brian Dombrowski, Anne Herman, Frank Ives, Patricia Jones, Frankie Young Long, Robert McCann, Russell Miller, Ken Reimer, Lucinda Sangree, Dave Schneider, Jan Schneider, Fred Swain, Karen Tackett, Henry Van Ness, David Wagner

Community RAB Members Not Present:

Harold Kugelmass (excused)

Environmental Support Personnel Present:

David E. O'Dell, NYSDEC, Avon
Jackie Travers, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Kevin Healy, US Army Corps of Engineers, Huntsville
Mary Farnsworth, Eng/Env Div, SEDA
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Neil Chaffie, Ovid Gazette
Glenn White, Community Member

2. Stephen Absolom provided the opening remarks for the meeting, welcomed all members and support staff to the August Restoration Advisory Board and outlined the evening's agenda. He then went around the room asking for introductions of all attending. The minutes from the June meeting were signed and entered into the record.

3. Thomas Enroth of the U.S. Army Corps of Engineers, NY District, SEDA Resident Office gave an Overview of the Clean Up Process. A copy of the handout provided at the meeting is forwarded with these minutes.

Some highlights from the presentation:

- History of SEDA. One of the main reasons why SEAD was chosen for its initial mission is it is away from the ocean and had adequate transportation routes. Also had IPE and refurbished equipment. He reiterated that where SEDA's mission was once the receipt, storage, maintenance, distribution and demilitarization of ammunition, the mission now is closure and the transfer of the land back to the public or other agencies.

- Also talked about laws and regulations governing the cleanup.

- Talked about how clean up is funded.

- The phases in the clean up process

- Site identification documents

- Reiterated that there is an Information Repository in Building 116 which is open to the general public. In it are final documents regarding the study and cleanup projects going on at SEDA.

Many questions were generated:

Question: Are there some non-evaluated sites because the Army is still using for DS2, i.e., SEAD 12?
Answer: SEAD 12 is being investigated. DS2 does not require any type of evaluation. They would, however, have to monitor DS2 containers for leakage. There is no ground water monitoring.

Question: Want to see dirt digging. Lot of studies, not much action. When will start seeing this, i.e., warehouses.

Answer: The Open Burning Grounds was to begin earlier this summer. Can't always control this. Many documents go back and forth. Have to have them approved. The process is lengthy. With OBG we can't go out and do this until the ROD is signed. You should see a flurry of activity in the late fall timeframe. We have to get all the documents in place first.

Question: Does this work have to go out on bid?

Answer: Some work is done by personnel here and some we use contractors from preplaced remedial contracts. Then you don't have the delay caused by the bidding process.

Question: Regarding the Superfund, is it funded by industry?

Answer: Yes, but the federal Superfund sites are funded thorough Congress.

Question: When was first citizen group, the Technical Review Committee formed?

Answer: 1994 or so.

Question: So an agreement was signed before a citizen committee started?

Answer: Interagency Agreement (IAG) and Federal Facility Agreement (FFA)is the legal document EPA and state uses. That document is the authority to initiate a technical review committee.

Question: Regarding funding received for FY 98, have we requested 12 million?

Answer: We got almost what we requested. We had requested more than that.

Question: Is there a carry over of funds from one fiscal year to another?

Answer: Yes, it is obligated. Have to show the reason though.

Question: Explain where you use the Intermediate Remediate Action before FS.

Answer: When you have a problem look at site, i.e., oil stain, interim removal action, remove source of contamination while still studying the site. Taken care of problem while you continue with the process. IRM solves problem. We did it at the ash landfill. Cooked soil to solve problem while still working at the ash landfill.

Question: What about status of OBG and ash landfill?
Answer: Public meeting on OBG. Looking at DRAFT ROD. Ash landfill - looking at PRAP currently.

4. The next presenter was Mr. David O'Dell of NYSDEC in Avon, NY. The NYSDEC is interested in the conservation area. They are finding out if they can afford this and are working through all this. This is not a done deal. Some highlights of the presentation:

Mr. O'Dell is a biologist who has been involved with managing the deer herd. They are still involved. There is management on number of permits used to hunt anterless deer. SEDA is not foreign to them. They have collected biological data on brown and white deer. Reason they are involved with the closure of Seneca Army Depot is there is public concern for the loss of the white deer herd. When it comes to wildlife in any way, they get involved. Natural Resource Agency was first interested in this. Passed from them to LRA. They opened to other takers. Next level of government, the state gets involved. The Federal government put in a proposal for 8500 acres. They were the foot in the door to keep open for state. When state got proposal and presented to LRA, Fish and Wildlife Service withdrew saying the state is in better position to manage the resources here. Proposed transfer and management on about 9000 acres. They have three goals:

- Because of public desire expressed keep white deer herd.

- Increase wildlife species other than deer

- Optimize public use as long as it doesn't interfere with objectives.

Some questions that were generated:

Question: You said you want to increase diversity. Will you bring in animals?
Answer: Rarely do this unless have to, i.e., wild turkey, trapping moving into habitat ready for them. Try not to bring in any exotics in active management. Species here have a good cross section.

- White deer herd is here because artificial - fence. Part of management will be maintaining the fence. White deer normally occur low percent all white--not albino. What happens when only a few of them, they get shot. Hunters

seek them. When you have the fence, few white deer. Brown deer carries gene for white deer. Fence captures large herd of deer. Not moving. Created herd about 300 in addition 5-600 brown deer. It is not an endangered species - SEDA has a unique situation. No other place in the world such as this.

- Manage grasslands and wetlands. Have been a resource lost. Endangered species use wetlands. Most prod habitat - grasslands overlooked. Managed grasslands important rare resource in state (WHIP) cost sharing in NY state. It is a program to replant grasslands to benefit the species. Shrublands support birds. Look at them and in the process increase bluebirds, offsprays, woodduck. Use habitat management. The bluebird, use bluebird boxes. Also use artificial nesting boxes for woodduck. Sometimes artificial help until bring forest back. Offspray - fish and eagle put up additional nesting platforms. Open area to public use. These are all proposals.

- They could have auto tours, hunts, fishing sites. generate money in user fees, timber sales, and crop rental.

- One of the goals is to make it self-sustaining. Boost local economy - tourism, jobs, and shared money. If it were to happen involve groups, stakeholders. Have immediately available $10-20,000 to start out with now. Could have 8-10 additional employees in this area. Could grow to 12-15 employees. We could sustain 10-20,000 from sale of timber. Managed so benefit wildlife.

- We had of lot of groups express interest to us. Ducks, Unlimited, Pheasants Forever, FL and Western New York Waterfowlers. AUTOBON Finger Lakes Land trust, Wildlife Forever - out of Minnesota.

Question: Regarding the fence, is there any other way to do this?
Answer: Once fence goes down, can't

Question: How many different species of predators at Seneca?
Answer: Foxes, coyotes, mink, offsprays, hawks, owls.

Question: Is whiteness in white deer a recessive trait?
Answer: Yes it is, That is why not expressed out in the wilds.

Question: Any other wildlife areas in NY State?
Answer: No, this is a unique situation.

Question: How does this compare in size with other wildlife areas?

Answer: This is on the large size. There are a couple to 15000 most are 5-10,000. 8500 acres is s good chunk of land. The Finger Lakes Natural Forest has 14,000 - 15000 acres. Manage open grasslands there. Have sparrows. SEDA sits between them and Montezuma.

Question: Hiking trails - would you do this.

Answer: Did put nature and historical tours, not hiking trails.

- Montezuma gets 175,000 visitors/year. That potential exists here. Lot of natural refuge/gate fee. That can help with maintenance. Maybe form a local Friends of Seneca Army Depot group to oversee this. Can turn over aspects to local group. Looking into this.

Question: This could be a place for school field trips, science interest?

Answer: Yes, primarily used for education. Do this all the time.

Question: Is deer management an essential part of this?

Answer: Yes, not possible without herd.

- Results of Cornell Study on deer. Immunocontraception study. Block of deer treated and untreated. Going on with study in Rochester. See what costs in field to administer drug/monitor them and boost them. Results not public. Finding expensive and almost impossible. Only worked on a small island.

Question: Has governor or Commissioner of DEC been appraised?

Answer: Yes - Commissioner Cahill has been briefed. Governor has been here. Potential is awesome.

Question: When will make a decision on this.

Answer: No idea.

Question: Is creating wetlands an expensive process?

Answer: Areas here could restore or create small wetlands. Once the facility is closed - no longer necessary cut down beaver dam.

Question: How closely group following restoration process here - taking this in consideration?

Answer: See a lot of stuff go back and forth. Review stuff has impact. We do have input. Regulations deal with that. Wildlife is here now. If it were so contaminated,

wildlife wouldn't be here now.

Question: Your decision would be a financial one?
Answer: Yes.

5. Steve opened the floor for open discussion and established some future agenda items. Some, suggestions were:

- Dr. Durst mentioned that Heather Clark went to a meeting in May assessing the RAB at SEDA as a model for participation. Would like to invite her here.

- Another suggestion was to have someone from another base that closed talk about how they successfully transformed a closed base.

- Update on projects - Steve could do one in future.

- Someone also suggested the group be provided a list of topics discussed in the past We will get one out so they can see what has been covered in the past.

- A presentation on environmental law by a lawyer from EPA - maybe after start of FY.

- Steve mentioned with the next mailing will put out a survey with suggested dates for tour

6. There being no further business, the meeting was adjourned at 9:00 p.m. The next RAB meeting will be held on September 15 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Overview of the Clean-up Process

Thomas R. Enroth
USACE, New York District

August 18, 1998

Presentation Overview

- Depot History
- Laws and Regulations
- Participants In The Cleanup Process
- Phases in the Cleanup Process
- Funding
- Site Identification Documents
- Other Information

History of Seneca Army Depot (SEDA)

- In 1941, this land was acquired and the construction of 500 ammunition storage structures and support buildings began
- Mission was the receipt, storage, maintenance, distribution, and demilitarization of ammunition
- Today the mission is closure of the installation and transfer of the land

Laws and Regulations

- Comprehensive Environmental Response, Compensation, and Liability Act (*CERCLA)*
  - Establishes a fund (Superfund)
  - Establishes a National Priority List of sites
  - Establishes a way to determine appropriate action at the sites (National Contingency Plan)
  - Establishes a liability system to pay for cleanup

Laws and Regulations (cont.)

- Superfund Amendments and Reauthorization Act (SARA)
  - Reauthorize CERCLA
  - Added additional funding
- National Priorities List (NPL)
  - Listed sites that pose the greatest health risk*
  - Ash Landfill and the Open Burning/Open Detonation Grounds evaluated for the ranking
  - SEDA listed in July 1989

**Note: Cleanup is based on risk per land use area*

Laws and Regulations (cont.)

- National Contingency Plan
  - Provides detailed direction on action to be taken at a site including steps to follow for evaluation if not enough information exists
  - Describes emergency response actions
  - Describes method to rank sites
  - Establish a priority for future actions

Laws and Regulations (cont.)

- Federal Facility Agreement (FFA) or Interagency Agreement (IAG)
  - A legal document between the Army, the Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC)
  - Establishes procedures and schedules for depot cleanup program milestones
  - Agreed to and signed by all parties in 1993

Participants In The Cleanup Process

- United States Army
- United States Environmental Protection Agency
- N. Y. S. Dept. of Environmental Conservation
- N. Y. S. Department of Health
- U. S. Army Corps of Engineers
- U. S. Army Center for Health Promotion and Preventive Medicine
- U. S. Army Environmental Center
- Seneca County Industrial Development Agency
- The Community

Funding

- The installation identifies the funding requirements for each year and for future years to support the planned environmental work
- This information is submitted through channels to the BRAC office
- Installation reviews current program and the funding necessary with the BRAC office
- Funding received for FY 98 approx. $12 M

Phases In The Cleanup Process

- Solid Waste Management Unit (SWMU) Identification
- Area of Concern (AOC)
- Preliminary Assessment/Site Inspection (PA/SI)
- Expanded Site Investigation (ESI)
- Remedial Investigation (RI)

Phases In The Cleanup Process (cont.)

- Feasibility Study (FS)
- Proposed Remedial Action Plan (PRAP)
- Record of Decision (ROD)
- Remedial Action (RA)
- Long Term Operation (LTO)
- Long Term Monitoring (LTM)

Site Identification Documents

- SWMU Classification Report- the report that describes and evaluates each location where solid or hazardous materials were stored, handled, or released. Contains information on 75 sites identified as either an AOC or No Action site.

- Environmental Baseline Survey (EBS)- the survey to classify areas of real property by environmental condition for transfer or lease. Additional areas have been identified for environmental assessment.

Other Information

- Information Repository- in Building 116
- A Land Use Plan has been developed and approved for the installation
- Cleanup goals are risk based for sites at these designated land use areas
- RAB discussion topics- let us know what you would like to be informed about

MINUTES
RESTORATION ADVISORY BOARD
JUNE 16, 1998 MEETING

1. Attendance:

Government RAB Members Present:

LTC Donald Olson, SEDA Commander
Dan Geraghty, NYS Department of Health
Mr. James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair (TDY)

Community RAB Members Present:

Dr. Dick Durst, Community Co-Chair,
Jeffrey Beall, Brian Dombrowski, Frank Ives,
Frankie Young Long, Robert McCann, Ken Reimer,
Lucinda Sangree, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Henry Van Ness,
David Wagner

Community RAB Members Not Present:

Anne Herman (excused), Pat Jones (excused),
Harold Kugelmass (excused), Russell Miller

Environmental Support Personnel Present:

Mr. John Swanson, NYSDEC R-8
Michael Duchesneau, Parsons Engineering Science, Inc.
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Antje Baumer
Heather Clark, Community Member
Mr. Neil Chaffie, Ovid Gazette

JUNE MINUTES

2. LTC Olson provided the opening remarks for the meeting. He welcomed all members in attendance. He then went around the room asking for introductions of all attending.

3. Dr. Richard Durst, the Community Co-Chair, welcomed members and support staff to the June Restoration Advisory Board and outlined the evening's agenda. The minutes from May meeting were signed and will be accepted at the next meeting when Stephen Absolom signs them.

4. Mike Duchesneau then gave a presentation on the fieldwork results at EBS sites.

Some highlights from presentation:

The Environmental Baseline Survey (EBS) is part of the BRAC process. It came to light there were 25-30 different sites that needed to be further evaluated. Back in February we investigated those sites. They prioritized those sites from high, medium and low. They have submitted the data to the COE for review. More documents are still being prepared. They will be submitted within another week or so. They investigated 35 different sites. Of the sites, one of the sites that looked like a potential for future concern was the small arms range. We have not formally discussed all these results. At a later date we will provide that information.

Mike then directed the group to review the handout on SEAD 59/71 (enclosed). He presented an update on the Fill Area and Alleged Paint Disposal Sites (SEAD-59 and SEAD-71). Some highlights of the presentation:

- Back in November/December timeframe they looked at SEAD 59/71. SEAD 59 was a concern fill area 60,000 gallon storage facility. Close to 59 is SEAD 16. Next to 59 is 71. This is an area where there was paint disposal.

- Background - Good-sized sites in an area where the future use is as an industrial area. Currently there are no plans for residential. Back in 1994 expanded the site investigation. Implemented quick removal action. Decision tree expanded that to be more detailed and flexible so Army can implement removal. Each site was ranked with series of decisions based on ESI. Because of size and complexity, moved into remedial investigation.

Some questions that were generated:

Question: Area is classified as industrial. If it should change to residential, would it be more stringent?
Answer: Yes. The Army will take into consideration its use as defined by LRA. If its use changes before turnover, do another EBS.

LTC Olson interjected that if it changes, we are directed to use the reuse plan and follow it. The Army will clean up to point of reuse. If different i.e., industrial to residential, costs will be borne by the person contracted to use for residential.

Carla interjected that they would look at costs associated to clean up to residential. If turns out the additional cost is not much more, the Army might decide to do that.

Question: There is a reuse circumstance in existence. What is it?
Answer: The LRA - Local Redevelopment Authority (Industrial Development Agency now) developed the plan. There is interest in certain areas for residential. These areas were pointed out on the map. (NOTE: New members requested a copy of the map and one will be submitted with these minutes).

Question: In pointing out the yellow part on the map that is industrial, this is the area where we expect a proposed prison. Isn't that considered residential?
Answer: When we did an EBS we looked at the possibility of a prison. Site within the yellow was clean and ready to go. The prison is in the state budget. It is clean to that standard.

Summary -

We have done seismic refraction to define depth of bedrock.

We have done electromagnetic survey to define buried metallic objects.

We have done soil gas survey to identify areas where high volatiles --removing samples of gas.

- We have done soil borings and test pits.

Question: How big is SEAD 59, just the area above or the whole thing?

Answer: About six acres.

Question: Are areas on bottom translocation material constantly moving?

Answer: No. Not talking groundwater, just soil. Have not done a lot of groundwater. If define extent of problem, it may be cost effective to remove. Then go back and see what kind of groundwater problem. Trying to save money until after cleanup. Then put the wells in.

Question: In the meantime, water moving, where going to, whom does it effect.

Answer: Groundwater pretty much moves across. Look at land contours and have not found a lot of groundwater movement in this area. TPH finding shows it hangs up in soil. Water is moving away from 96.

Question: Wondering if there is a way to get a handle on where contamination edge? My concern is with the lake.

Answer: In SEAD 16 we have not detected this. For that reason, decision focuses on soil at this point.

Question: How deep is pit at SEAD 59?

Answer: 8-10 feet deep. Historical information has been pretty accurate. There is also rock under whole place. Glacial till (sand, gravel and clay) 5-10 feet thick. Once get below that material - layer of rock/shale) under that is more shale. Shale doesn't transmit water. Looking at surface soil contamination. Because of high clay, doesn't allow water to transmit.

Question: Regarding soil sampling, you found concentrations of oil residue, diesel, coal tar, Did you look for dioxins?

Answer: No, did not look for them. Only two pesticides generate dioxins and we haven't found those pesticides there. Dioxin testing is very costly.

Question: Regarding SEAD 71, why would there be pesticides there?

Answer? Yes, odd but DDT was widely used for a long period of time during WWII. Could eventually go back to farming days.

5. Janet gave a brief update on the status of environmental projects going on. The ongoing projects are:

Ash Landfill
Opening Burning Grounds
Deactivation Furnaces
Fire Training Areas
Radiation Sites
Paint Disposal Areas

The attached handout summarizes the information. At the next meeting she will give an overview of the process.

6. Next, Mr. John Swanson from DEC gave a presentation on Landfills. Some points of interest:

He gave a brief history of the design of old town landfills.

In the past the garbage was open. There were no gates nor restrictions. It would be an old swamp, gravel pit, worthless piece of land. In the 70's the health department cracked down. Put a cover on it. When do landfilling put soil over it and walked away.

In the 70's DEC came into being.
In the 80's they regulated soil liners
In 1985 - seeing composite liners 18-24 inches in clay
In 1988 - Saw the first set of real regulations.
Information is available on Internet

He displayed a diagram showing following:
Liner
24 inch clay geomembrane
leak detection system
primary liner system and geomembrane
Based on hydraulic control.
Depth of liquid on prime liner. Minimum to maximum extent. Intimate contact with liner. If defect in liner, clay soak up liquid and act as a bandage to seal that up.

If cell exposed, check and see where leak. Have backup liner. Most of today's landfills being built are going deep in ground below water table.

- Some questions that were generated:

Question: How thick is the solid piece in the middle?
Answer: 100-250 feet thick. Put in 10-ft. layers and layer of soil.

Gas collection - bigger landfills, collect from way down deep

Quality end up with depends on how much effort put in quality control during construction.

Facility - before first piece liner material - go out on site. Check surface first. Pick up angular pebbles.

Question: On geomembrane, what is lifetime of material?
Answer: Forever as we know it.

What Seneca Meadows is doing is putting in leachate collection. They have been digging up garbage 25 years old. It looks like it did when put in. Liners will last.

Studies exposing liners to leachate materials show they hold up and have high density.

Every 500 linear feet - go out and do destructive test. Cut a hole 28 X 24 into strips and send to a lab and do pull test to see if seam fails before material fail.

Point of quality control. Each day after lunchtime and anytime change operator on fusion liquid
- have to be recertified.
- high temperature
- speed
- liner clean

very hi-tech operation.

He showed a photo of High Acres which is located in the town of Perinton in Monroe County on the East Side.

They put in wall and collection system in 1991-92.

It is a well-run facility and accepts No. 3 volume of waste, about 2000 ton per day.

- More questions that were generated:

Question: Are they in direct competition with Seneca Meadows?
Answer: Yes. Competitive nature keeps price down.

Question: Where is there a hazardous waste landfill?
Answer: Model City, Niagara County

Question: Material from here not hazardous waste?
Answer: Once solidified it is no longer hazardous. Then can be accepted at a sanitary landfill.

He then gave information on the Seneca Meadows/Tantillo Landfill. Some highlights are:

History

Original landfilling started on Route 414 and proceeded north with long strip of land (old Tantillo)

1974 - Operations moved across
Around 1981 applied for permit w/DEC
105 acres
original area unlined
They are in the process of installing perimeter in leachate collection system.
Getting better control
Remainder has soil liner. Pump leachate out of that.
Ponds - storm water retention
Sediment settles out of it
Have to get application to discharge water
1980 ponds - water in/out uncontrolled
Samples show no impact

Question: How deep is rock?
Answer: Rock closest 60/70 feet below surface.

Question: No same design as other?
Answer: Yes, but has soil liner and leachate collection.

Question: If someone applied permit today, could make a facility like that?
Answer: No, they couldn't.

Question: It is true wetland involved?
Answer: To west all around north. Wetlands all over. A portion was wetland before regulations came in to play.

Question: Any signs of leaks?
Answer: No impact from groundwater on tight soils. He referenced photo - where excavation perimeter leachate collection. No sign of anything in soil. Clean as can be. No staining, no smell.

Question: Why not build landfill at SEAD? Then wouldn't have to move material.
Answer: Have to look at less costly method. It is less costly to take to commercial rather than build one on site.

Question: Section over on RTE 414 where Sesslers dump out D2's? Is it being monitored?
Answer: No, not monitored.

Question: Was there a public meeting on that permit?
Answer: Has been a lot of them. Will be a legislative hearing probably in the fall.

Question: Whereabouts near Tantillo is the new Little League Field going to be?
Answer: Near the North Road.

Question: Big question/concern is the material from SEDA. We all recognize issue associated here. If landfill permitted and can accept waste, have no basis to say go somewhere else.
Answer: Over last 4-5 years, landfill operators realized that for daily operations, hauling in huge amount of soil - 50-100 loads a day. Also bring in contaminated soil from petroleum tank removals, construction debris, and paper sludge, put in there in bulk. Over the last 4-5 years used as daily cover. Cuts down on soils to bring in. Saves individual money in disposal fees. Worked out well. Only used in areas that won't be touched by people and truck traffic. Used on sloping part of walking face. It is compacted down - covered up with 6 inches soil - keeps birds out. Some facilities use incinerator ash - ground up construction debris - (wood, drywall) anticipate if contaminated soils from here, use that way. The rest can't be exposed for more than 24 hours and covered up with clean soil. Most contaminated soils would be solidified on site, and moved to facility that would accept it. Seneca Meadows doesn't do solid on site. High Acres does.

7. Dr. Durst made a motion to wrap up the meeting. We will reconvene on 18 August. If you think of any items to cover, contact Dr. Durst, Stephen Absolom or Laura Sposato to put on agenda.

8. There being no further business, the meeting was adjourned at 9:45 p.m. The next RAB meeting will be held on August 18 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

Richard A. Durst

RICHARD A. DURST
Community Co-Chair

Restoration Advisory Board
Meeting Agenda

October 20, 1998
NCO Club

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes from previous meeting** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-Chair
7:10	**Iron Filings Groundwater Trenches at the Ash Landfill** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
7:40	Break
7:50	**Bioventing Treatability Study at the Fire Training Demonstration Pad** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
8:20	**Open Discussion** -National Stakeholders' Forum on Monitored Natural Attenuation (Russell Miller attended) -Heather Clark's thesis at Cornell University -Future agenda topics -Set date for next meeting
9:00	**Adjourn**

Presentation to the RAB
October 20, 1998

Remedial Technologies
Treatability Studies

Michael Duchesneau, P. E.

PARSONS ENGINEERING SCIENCE

Superfund Policy on Treatability Studies

CERCLA states :

"Bench - or pilot-scale treatability studies shall be conducted, when appropriate and practicable, to provide additional data to support engineering design of remedial alternatives"

Purpose of Treatabilty Study

- *Provide site-specific treatment data*
- *Effectiveness of innovative technology*
- *Support selection of the remedy*
- *Provide data related to implementation of the selected remedy*

Sites and Technologies Selected for Treatability Studies

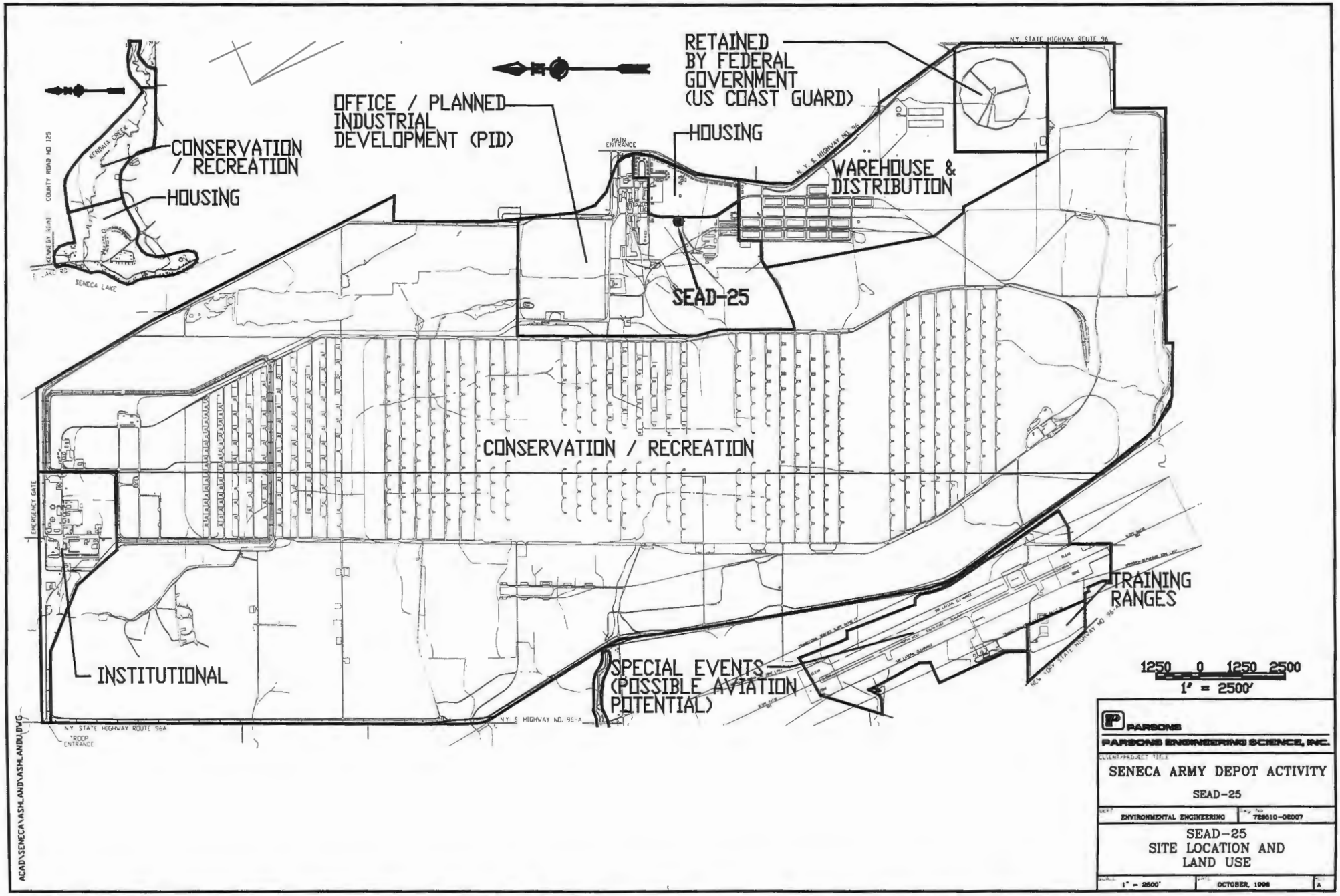
SEAD-25 (Fire Demonstration Pad)

In-situ Bioremediation Study (Bioventing)

SEAD-6 (Ash Landfill)

In-situ Zero Valent Iron

(Reactive Barrier Wall)



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY

SEAD-25

ENVIRONMENTAL ENGINEERING | 728610-08007

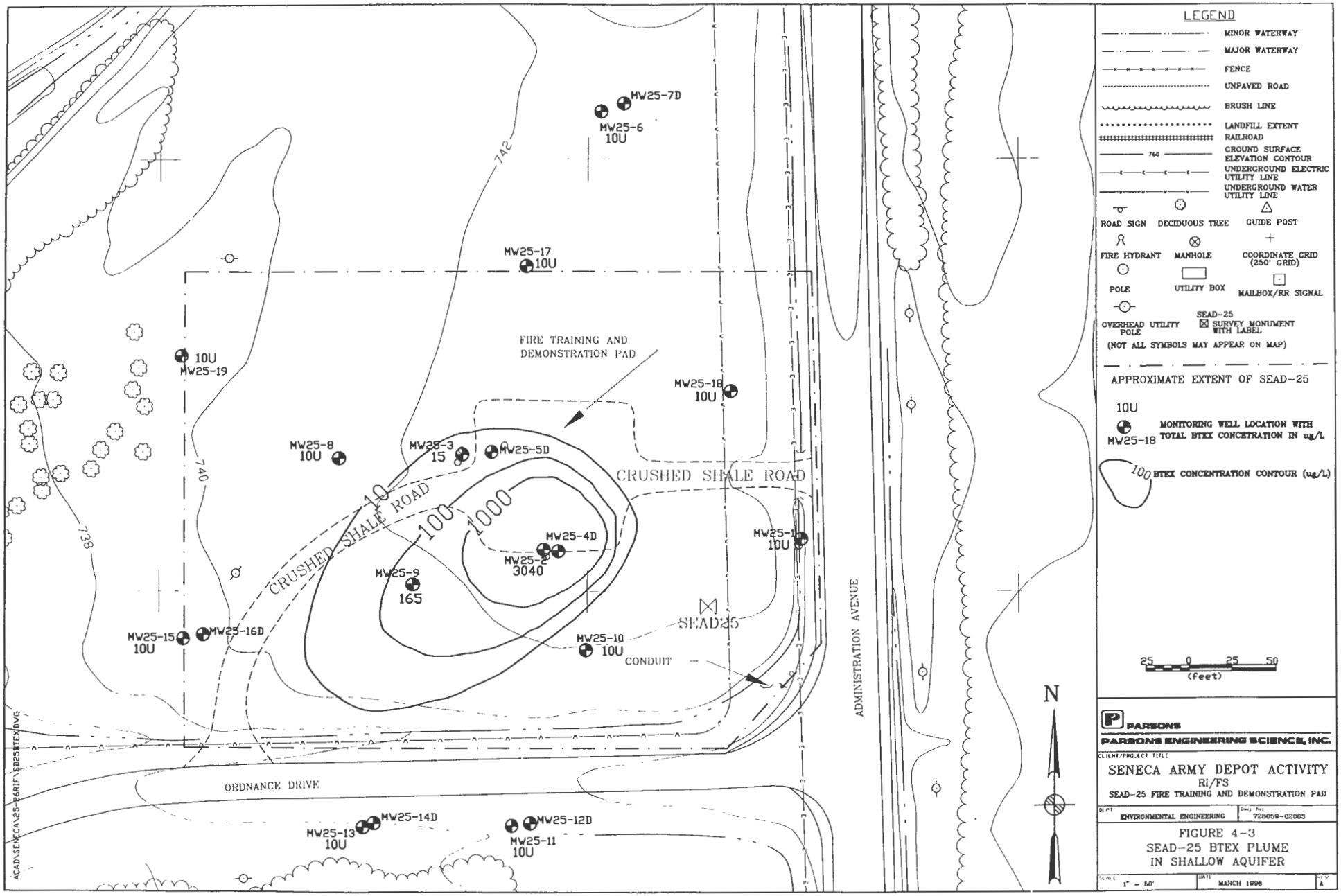
SEAD-25
SITE LOCATION AND LAND USE

1" = 2500' | OCTOBER, 1998 | A

ACAD\SENECA\VASHLAND\VASHLAND1.DWG

Summary of Site Conditions (SEAD-25)

- *Used for Fire Training Activities*
- *Within Industrial Land Use Area*
- *Constituents of Concern*
  - *Volatile and Semi-Volatile Petroleum Hydrocarbons (i.e. BTEX) in Soil and Groundwater*
- *Localized Source Area*
- *Limited Groundwater Plume*



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

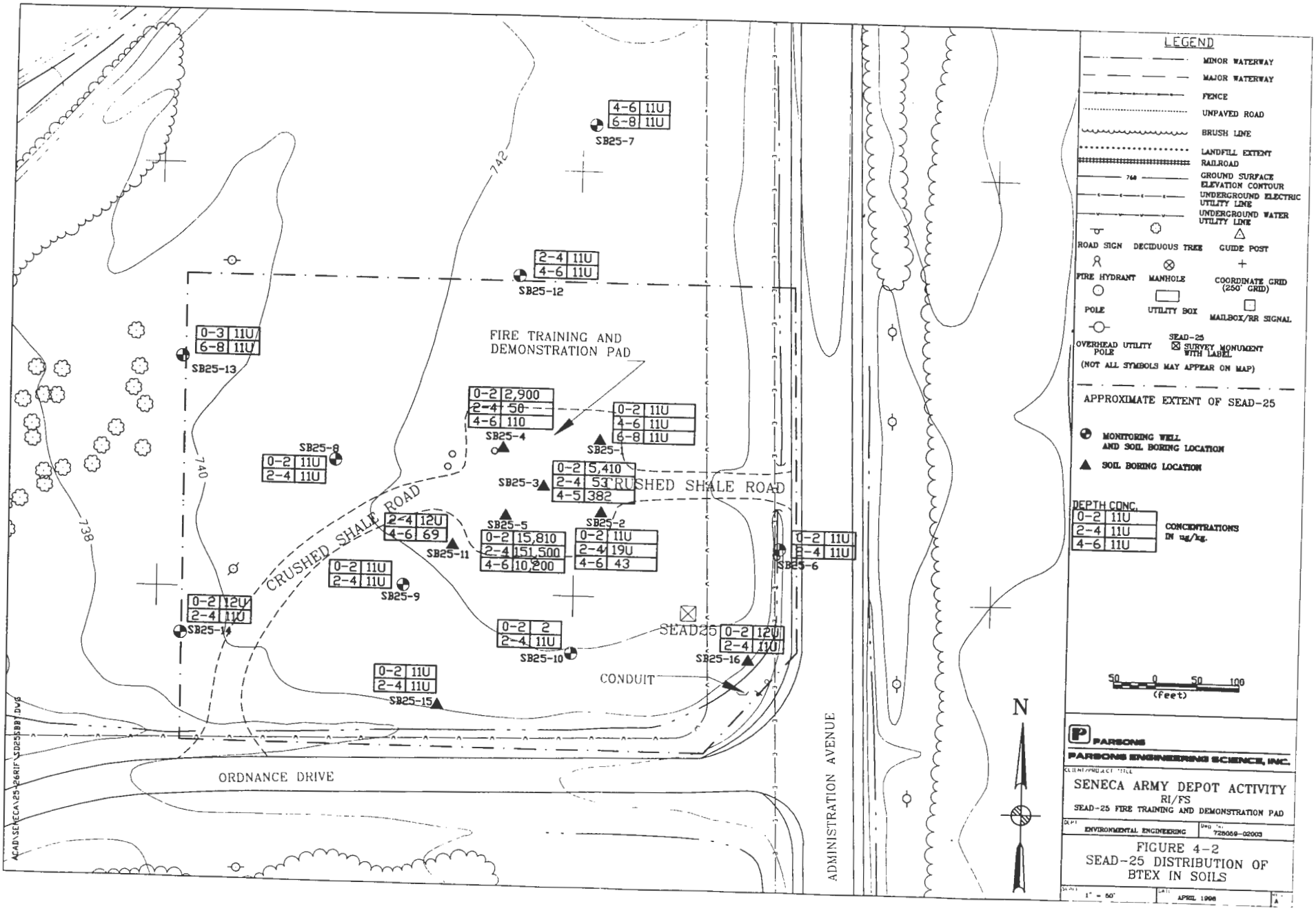
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD

DEPT: ENVIRONMENTAL ENGINEERING | Dwg No: 728059-02003

FIGURE 4-3
SEAD-25 BTEX PLUME
IN SHALLOW AQUIFER

SCALE: 1" = 50' | DATE: MARCH 1996 | REV: A

ACAD\SENECA\25-26RIFS\SD25TEXD.DWG


LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SEAD-25 SURVEY MONUMENT WITH LABEL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-25
MONITORING WELL AND SOIL BORING LOCATION
SOIL BORING LOCATION
DEPTH CONC.
0-2 11U
2-4 11U
4-6 11U
CONCENTRATIONS IN ug/kg.
50 0 50 100
(Feet)
FIRE TRAINING AND DEMONSTRATION PAD
CRUSHED SHALE ROAD
ORDNANCE DRIVE
ADMINISTRATION AVENUE
CONDUIT
SEAD25
742
740
738
SB25-1
0-2 11U
4-6 11U
6-8 11U
SB25-2
0-2 11U
2-4 19U
4-6 43
SB25-3
0-2 5,410
2-4 53
4-5 382
SB25-4
0-2 2,900
2-4 50
4-6 110
SB25-5
0-2 15,810
2-4 151,500
4-6 10,200
SB25-6
0-2 11U
2-4 11U
SB25-7
4-6 11U
6-8 11U
SB25-8
0-2 11U
2-4 11U
SB25-9
0-2 11U
2-4 11U
SB25-10
0-2 2
2-4 11U
SB25-11
2-4 12U
4-6 69
SB25-12
2-4 11U
4-6 11U
SB25-13
0-3 11U
6-8 11U
SB25-14
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0-2 12U
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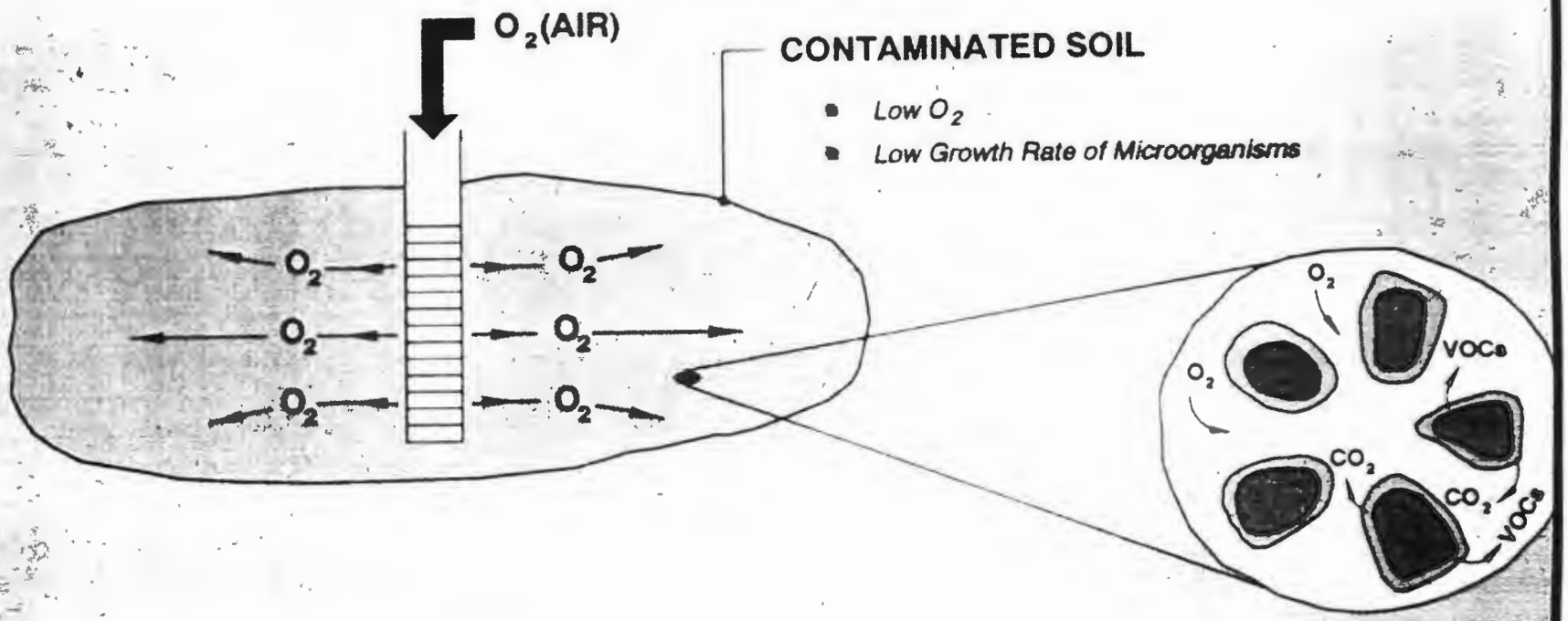
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD
ENVIRONMENTAL ENGINEERING
728059-02003
FIGURE 4-2
SEAD-25 DISTRIBUTION OF BTEX IN SOILS
1" = 50'
APRIL 1998

What is Bioventing ?

- *In-situ Soil Bioremedial Technology*
- *Addition of Oxygen (Air) Stimulates Natural Microbial Degradation*
- *Natural Biodegradation is Dependent upon Slow Natural O_2 Diffusion Rates*
- *Respiration Tests used to Evaluate Effectiveness*

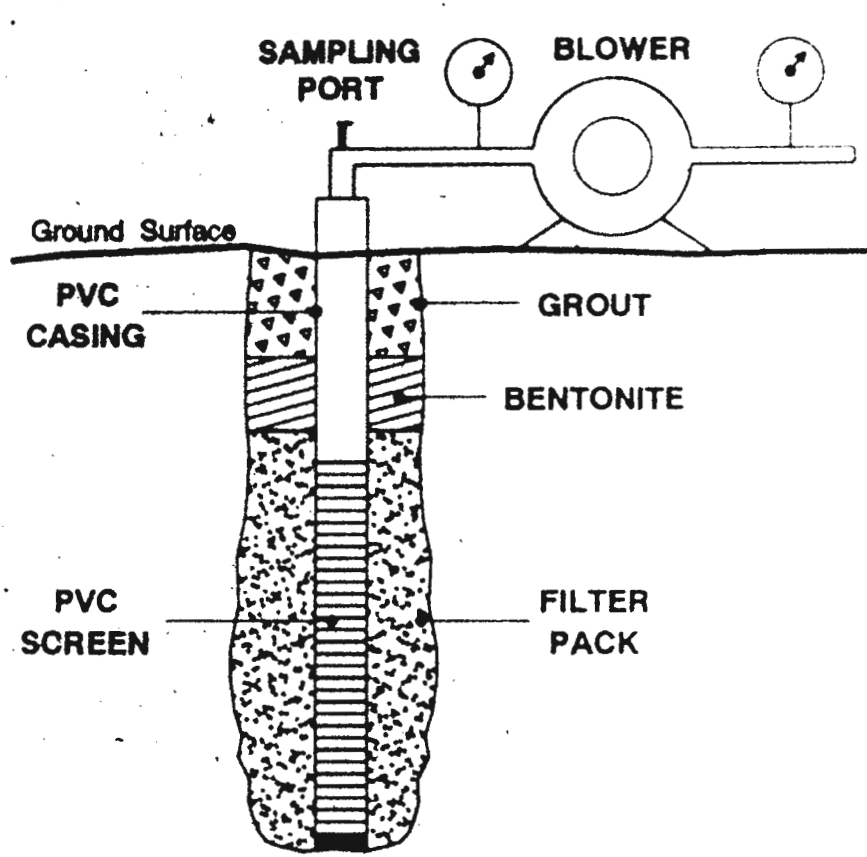
BIOVENTING PROCESS



RESULT OF VENTING PROCESS

- *O_2 STIMULATES NATURAL BIODEGRADATION OF CONTAMINANTS*
- *AIR MOVEMENT ENHANCES NATURAL VOLATILIZATION*
- *BIODEGRADATION RESULTS IN BREAKDOWN TO HARMLESS CONSTITUENTS (CO_2 AND H_2O)*
- *AIR INJECTION ELIMINATES OFF-GAS TREATMENT*

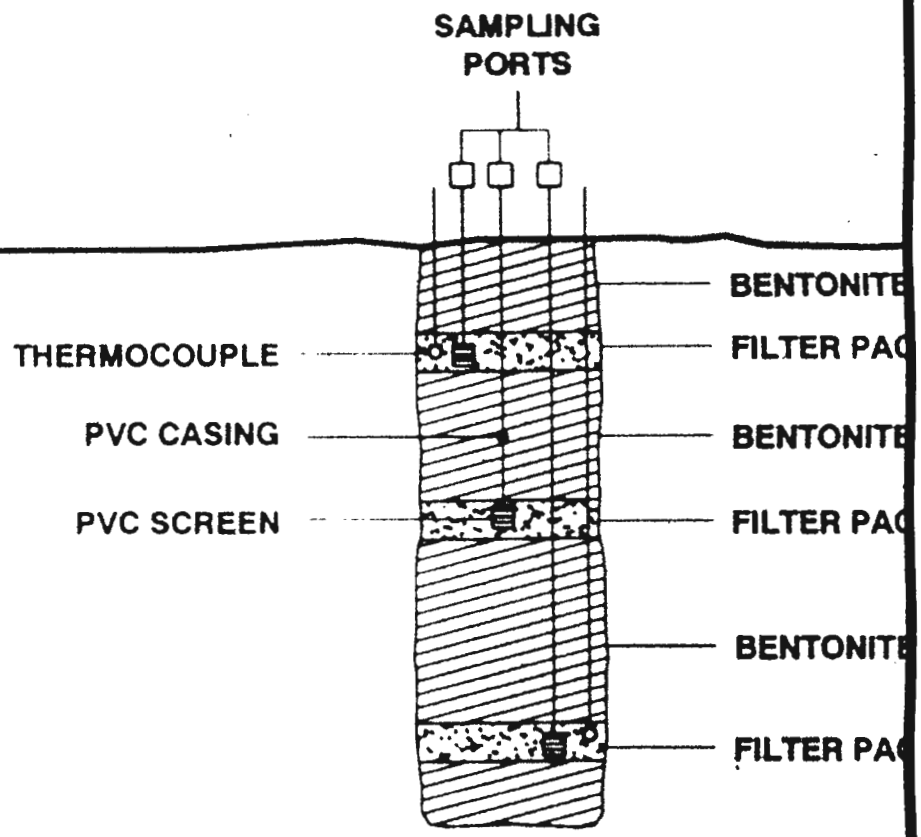
VW (VEW) AND VMP DESIGN



VW (VEW)

KEY FEATURE:

- *Screened throughout the contaminated interval*



VMP

KEY FEATURE:

- *Use of narrowly-screened intervals to sample soil gas from discrete interva*

Requirements for Bioventing

- *Established Natural Bacterial Population*
- *Adequate Carbon Source*
- *Available Nutrients*
- *Soil Moisture between 5% to 15%*
- *Sufficient Oxygen Supply*

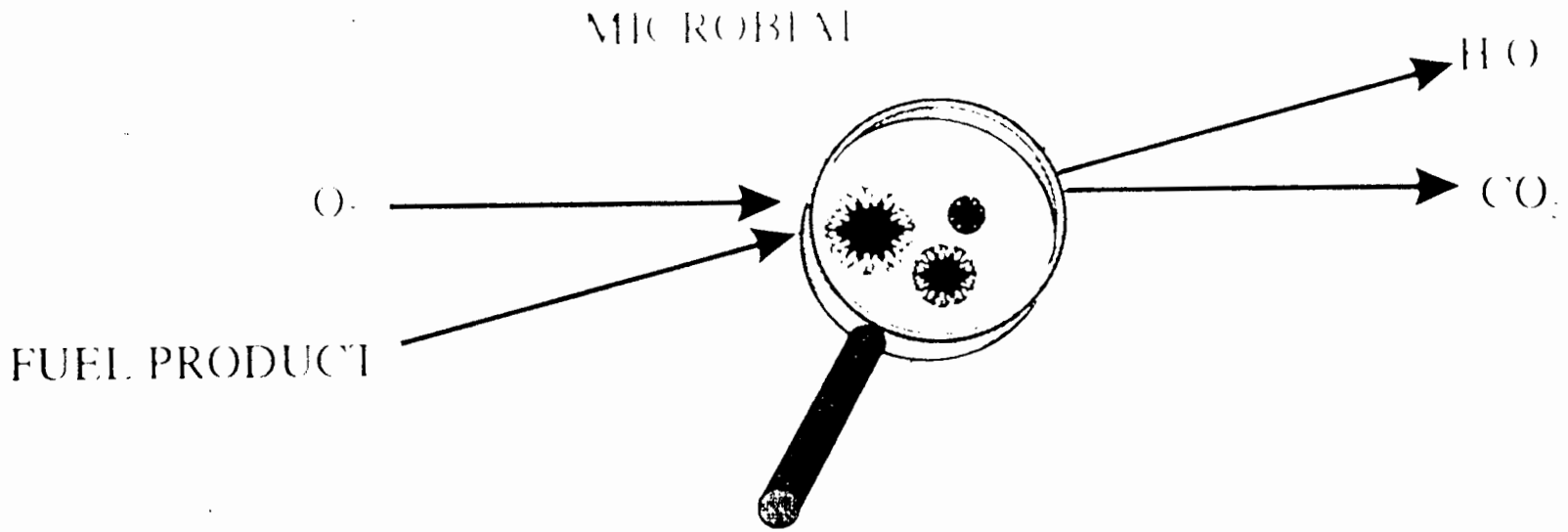
Bioventing Advantages & Disadvantages

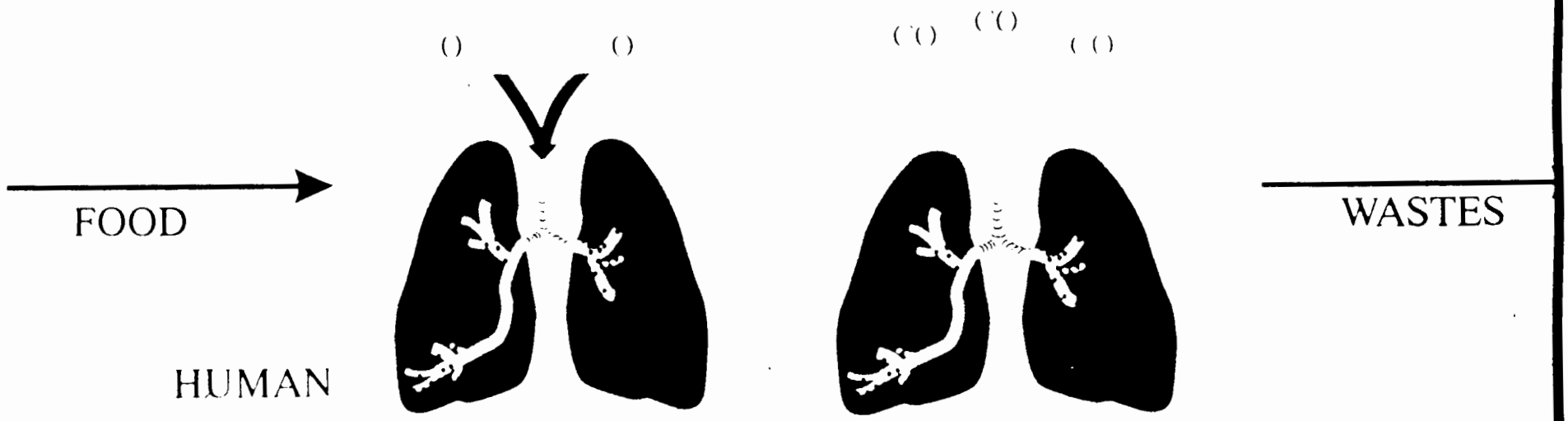
- *Advantages :*
  - *Simple and Effective Technology*
  - *Superior Oxygen Transport*
  - *Reduced Air Emissions*
  - *Cost Effective*
- *Disadvantages:*
  - *May not Reduce High MW Compounds*
  - *Increased Treatment Times*
  - *Temperature Sensitive*

What is Biodegradation ?

- *Biodegradation is a Biochemical Reaction*
- *Respiration is the Biochemical Reaction*
- *No Direct Test for Biodegradation*
- *Can Measure Gases Produced as End Products of Respiration*
- *Biodegradation Rates are Obtained from the In-situ Changes Observed*

RESPIRATION AND BIODEGRADATION





How Can Biodegradation be Measured ?

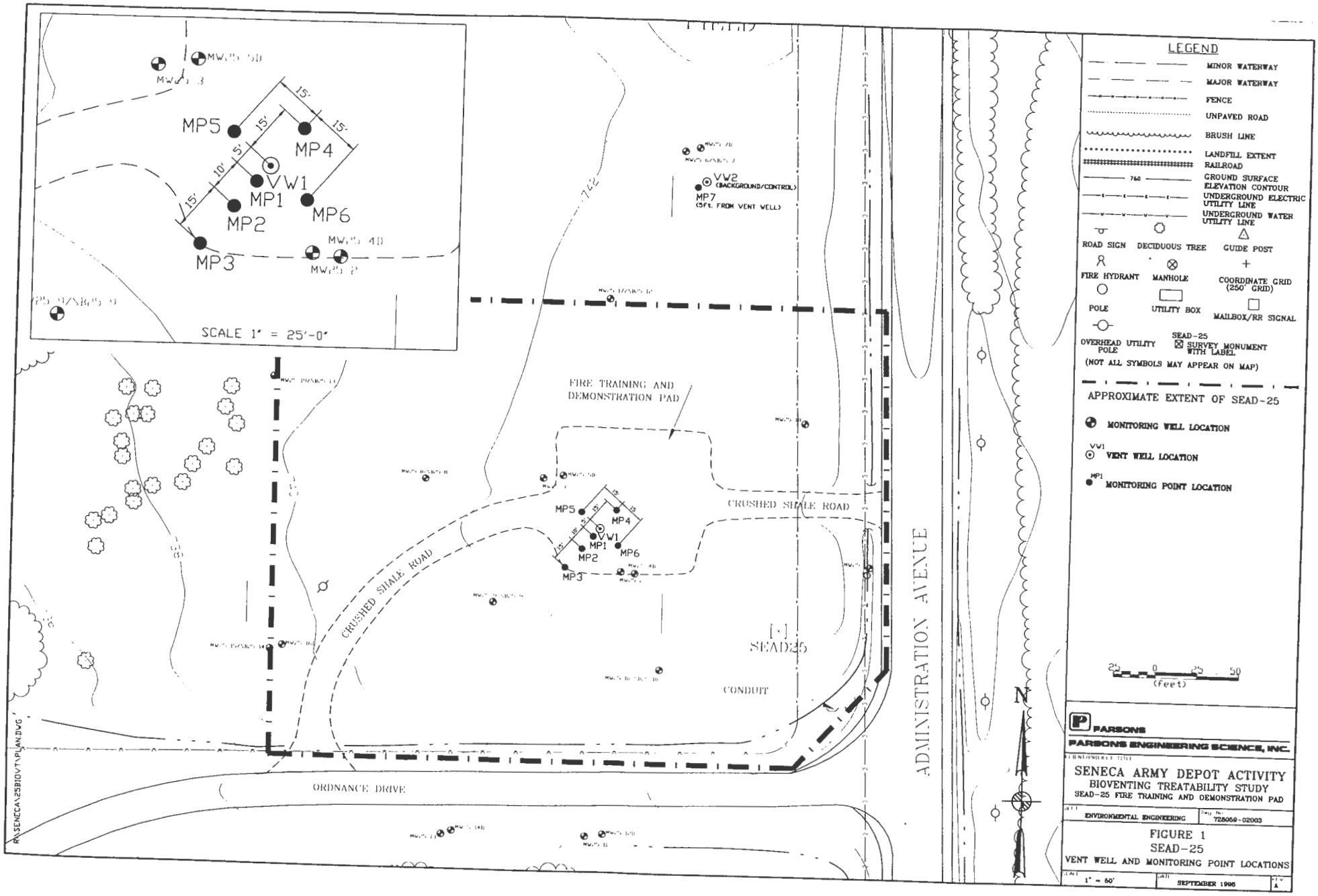
- *In-situ Respiration Test*
- *Saturate Soil with Air (Oxygen)*
- *Monitor the Changes of Gases*
  - *Oxygen (Loss due to Microbial Action)*
  - *Carbon Dioxide (Increase)*
- *Monitoring through Vapor Points*
- *Monitor Over Time to See Changes*
- *Monitor Conc. Changes of COCs in Soil*

Goals of Bioventing Study at (SEAD-25)

- *Demonstrate Concentation Reductions*
- *Evaluate Biodegradation Rate*
- *Determine Effective Radius of Air Movement*
- *Obtain Engineering Design Data*
  - *Required Air Pressure and Flow*
  - *Equipment Sizing*

SEAD-25, Bioventing Study Scope of Work

- *Prepare Workplan*
- *Install Vent Wells and Vapor Monitoring Points*
- *Perform Air Permeability Test*
- *Perform Respiration Tests*
  - *Initial, 6 Month and 12 Month*
- *Prepare Report*


MP5
MP4
VW1
MP1
MP2
MP6
MP3
15'
5'
10'
SCALE 1" = 25'-0"
VW2
(BACKGROUND/CONTROL)
MP7
(5Ft. FROM VENT WELL)
FIRE TRAINING AND
DEMONSTRATION PAD
CRUSHED SHALE ROAD
CRUSHED SHALE ROAD
SEAD25
CONDUIT
ADMINISTRATION AVENUE
ORDNANCE DRIVE
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SEAD-25
SURVEY MONUMENT WITH LABEL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-25
MONITORING WELL LOCATION
VW1
VENT WELL LOCATION
MP1
MONITORING POINT LOCATION
25 0 25 50
(feet)
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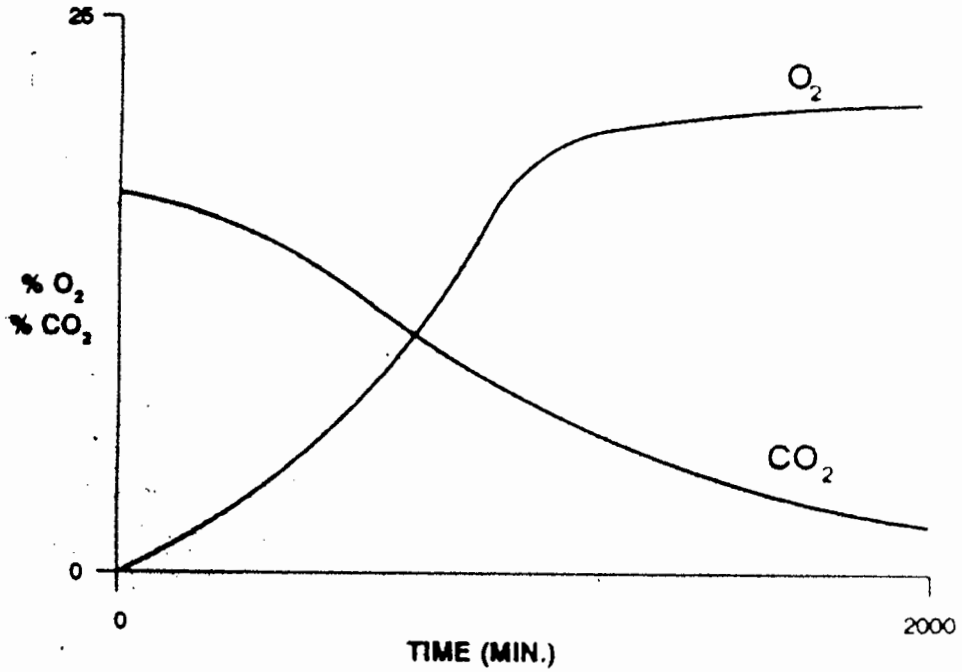
SENECA ARMY DEPOT ACTIVITY
BIOVENTING TREATABILITY STUDY
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD
ENVIRONMENTAL ENGINEERING
725059-02003
FIGURE 1
SEAD-25
VENT WELL AND MONITORING POINT LOCATIONS
1" = 50'
SEPTEMBER 1996
R:\SENECA\25BIOVT\PLAN.DVG

NITORING
WELL

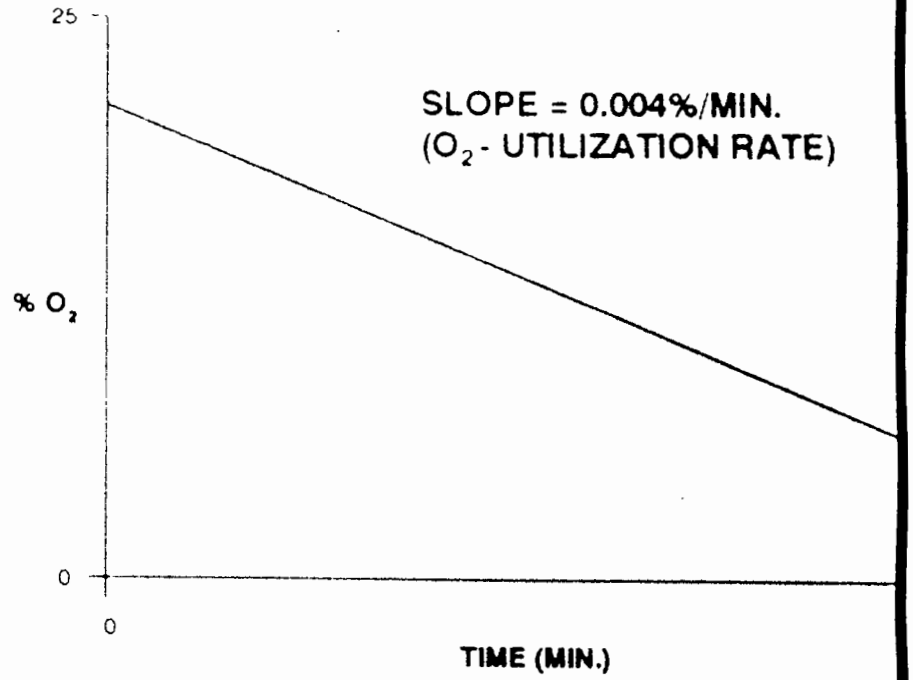
O_2 /CO_2 MONITORING

DURING VENTING

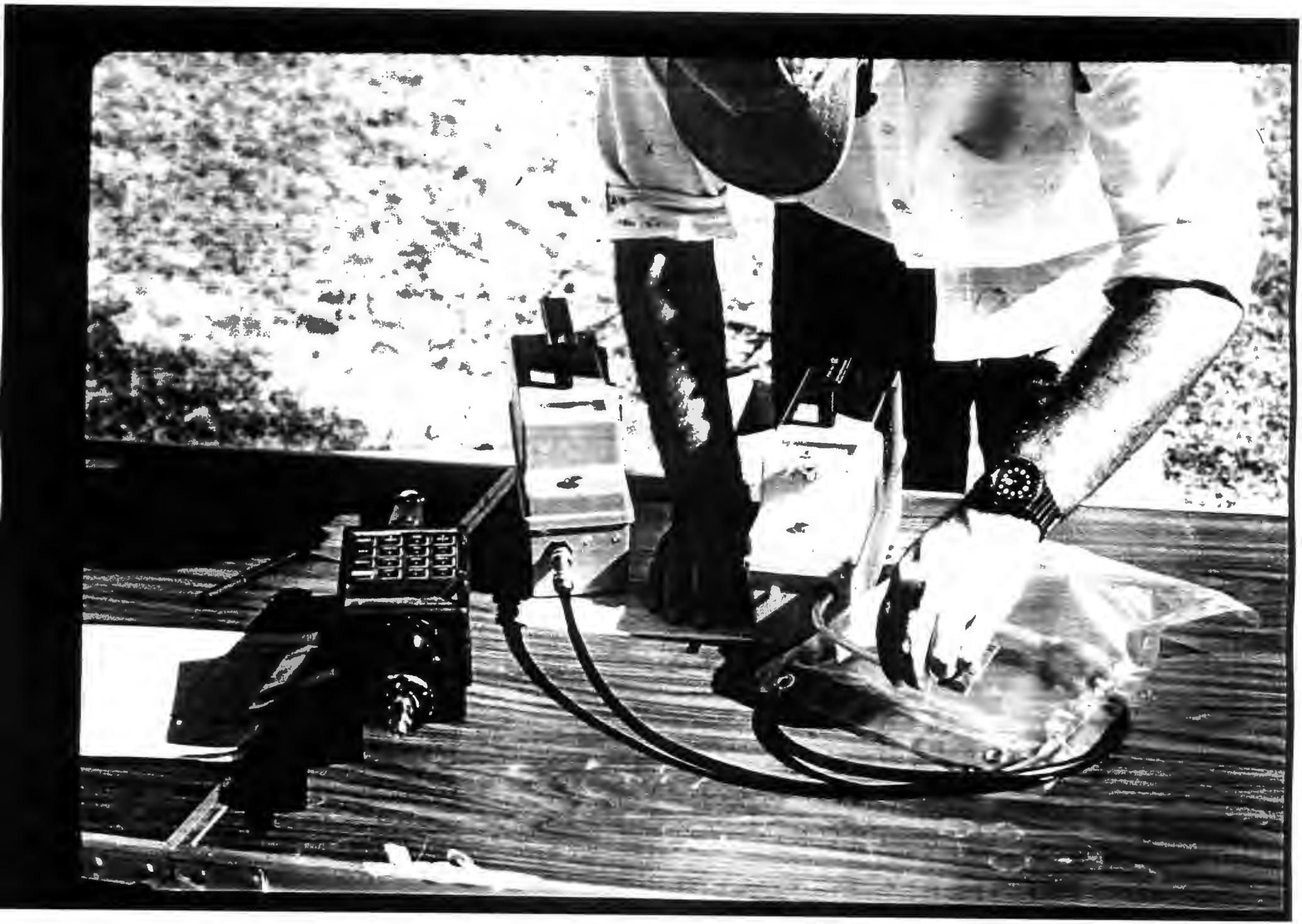


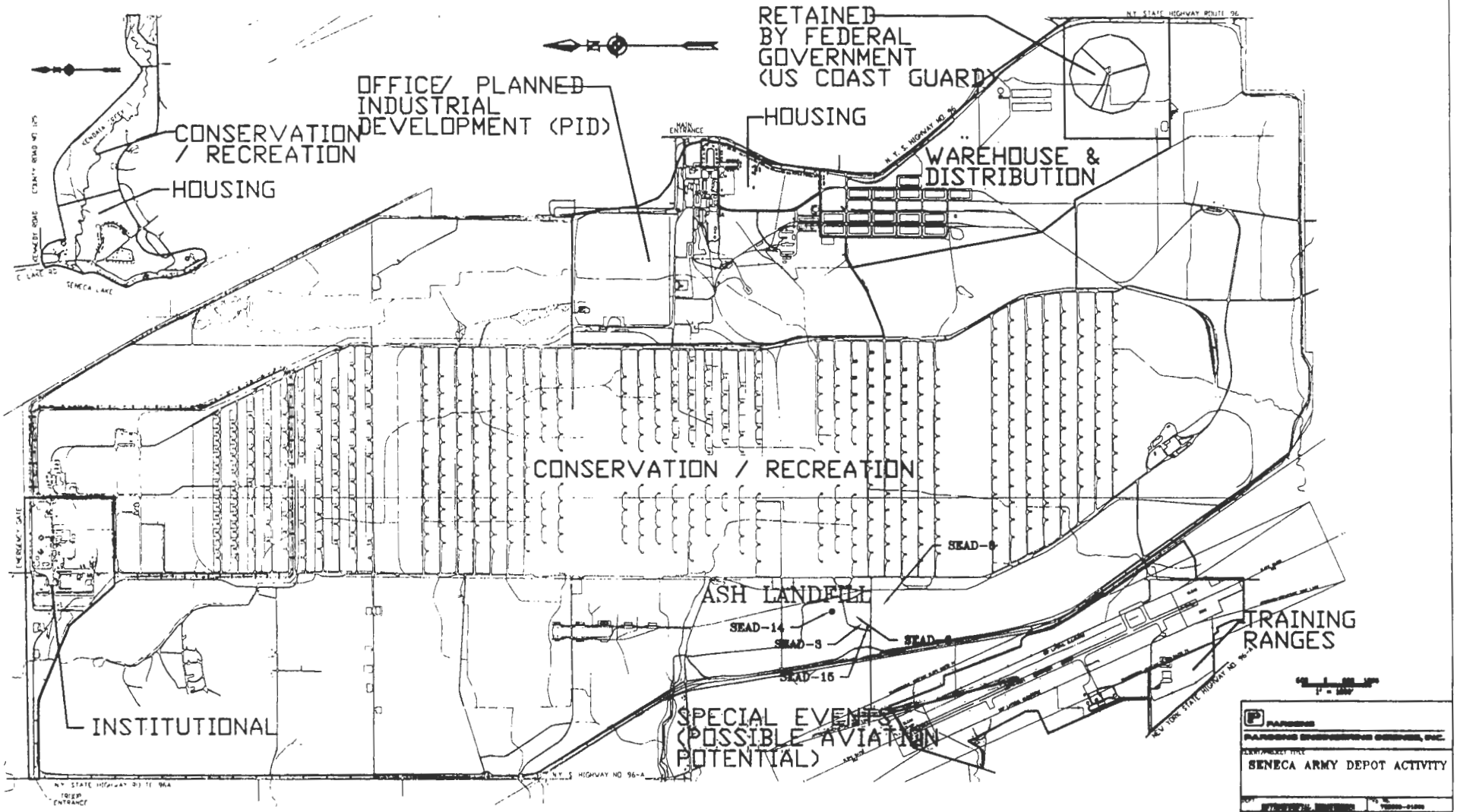
- MONITORED IN VMPs
- MONITORED IN GW MONITORING WELLS
- USE O_2 /CO_2 ANALYZER
- EXAMPLE IS IN CONTAMINATED SOIL

AFTER VENTING



- O_2 UTILIZED BY NATURAL BACTERIA IN SOIL
- SLOPE OF LINE IS THE O_2 - UTILIZATION RATE ("IN-SITU RESPIRATION RATE")





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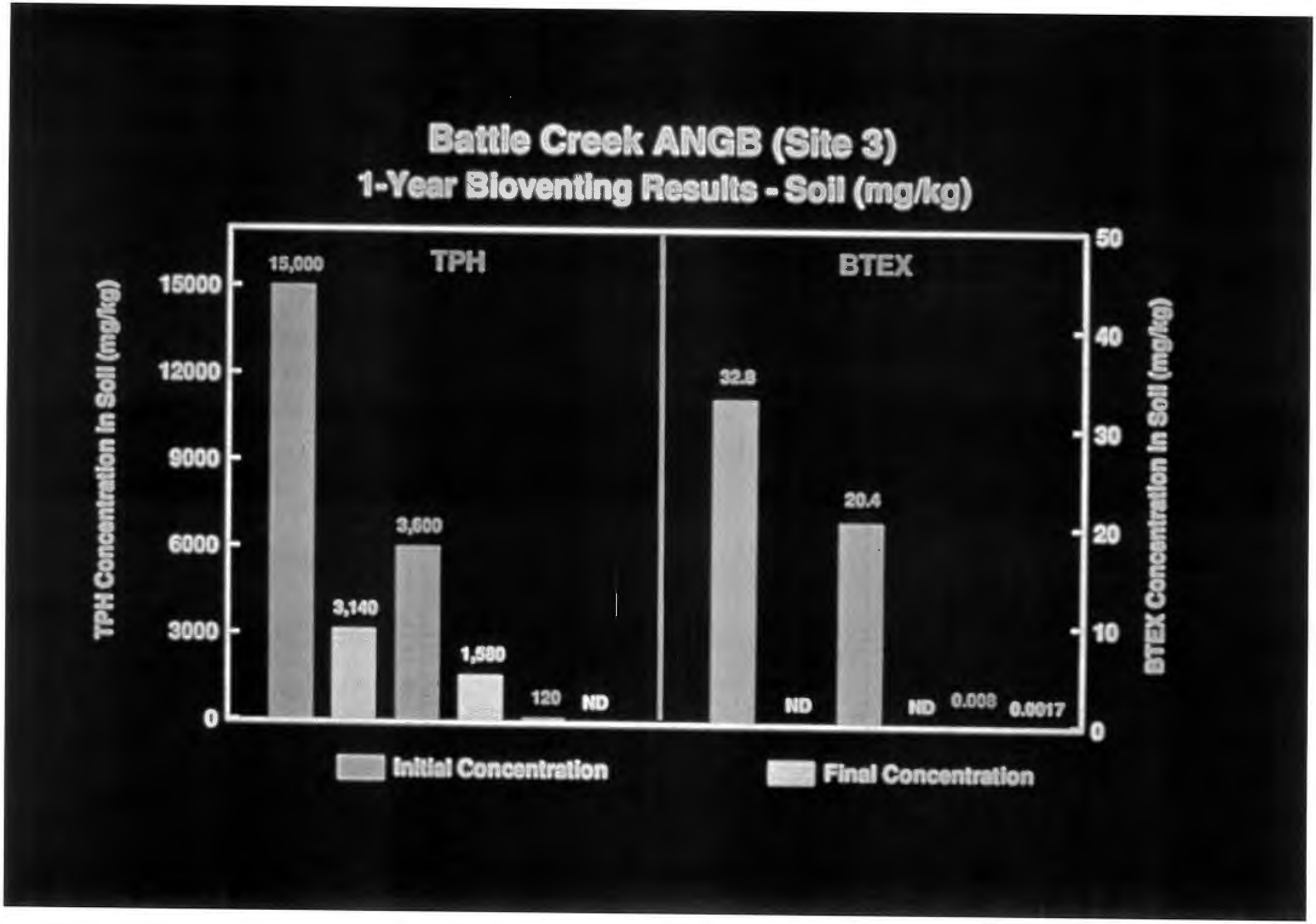

Battle Creek ANGB (Site 3)
1-Year Bioventing Results - Soil (mg/kg)
TPH
BTEX
TPH Concentration in Soil (mg/kg)
BTEX Concentration in Soil (mg/kg)
15000
12000
9000
6000
3000
0
50
40
30
20
10
0
15,000
3,140
3,600
1,580
120
ND
32.8
ND
20.4
ND
0.008
0.0017
Initial Concentration
Final Concentration

Summary of Site Conditions
Ash Landfill

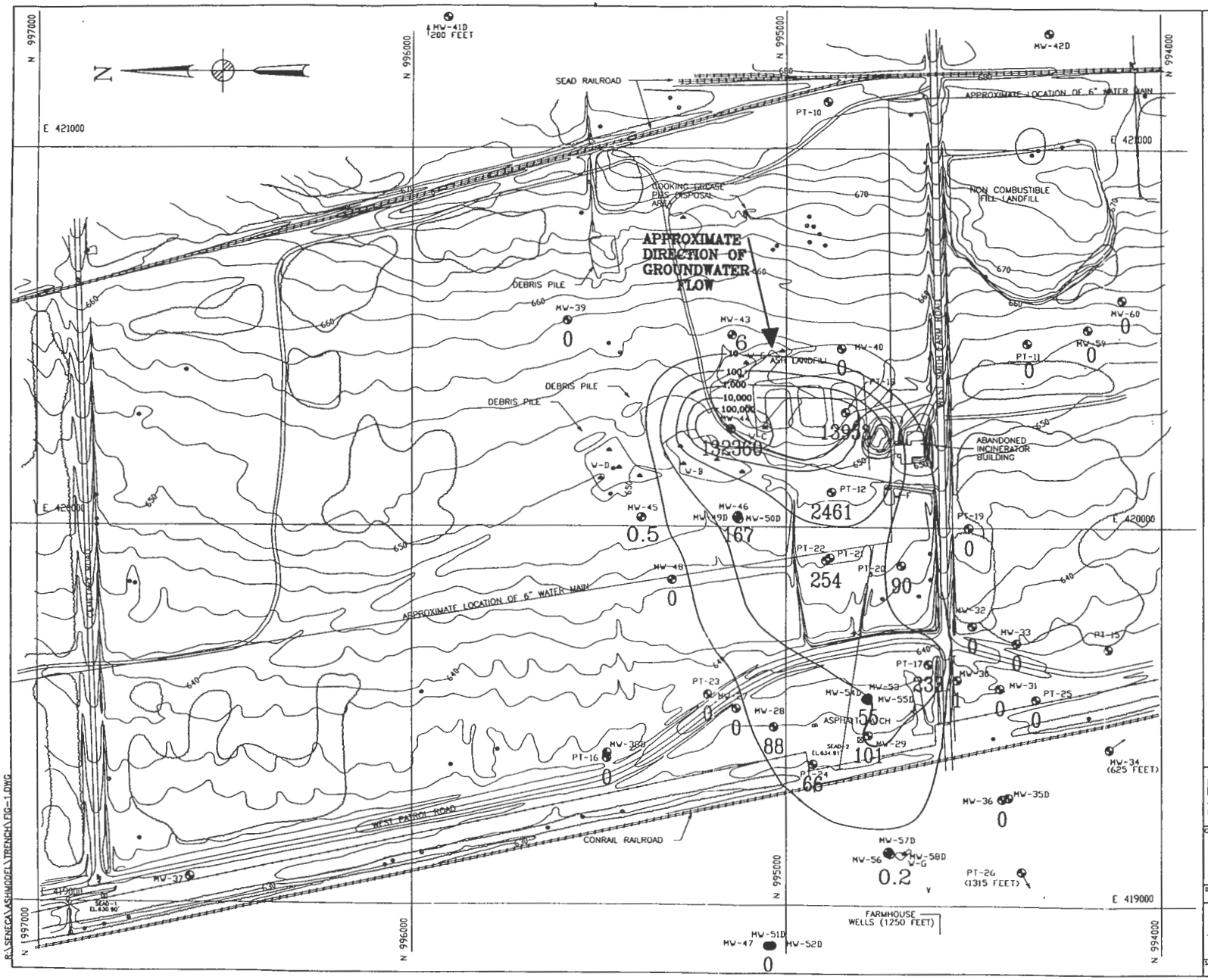
- *Former Trash Incinerator*
- *Within Conservation Land Use Area*
- *Constituents of Concern*
  - *Volatile Chlorinated Organics in Groundwater*
- *Source Area Eliminated in 1995 with an Interim Removal Action (IRM)*
- *Groundwater Plume at Depot Boundary*

Reactive Barrier Wall with Zero Valence Iron

- *In-situ Groundwater Remedial Technology*
- *Dissolved Chlorinated Organics are Chemically Destroyed*
- *Groundwater is Passed through Reactive Zones*
- *Emerging Technology*

EnviroMetal Process

- developed in 1989 at Institute for Groundwater Research, University of Waterloo
- various metals could remove VOCs from contaminated groundwater
- IRON
  - readily available
  - drinking water standards
  - relatively inexpensive



LEGEND:

- PAVED ROAD
- DIRT ROAD
- 650 — GROUND CONTOUR AND ELEVATION
- TREE
- W-B — WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SEAD-1 EL.630.90' — SURVEY MONUMENT
- PT-22 / MW-37 — MONITORING WELL AND DESIGNATION
- —10,000 — GROUNDWATER ISOCONTOUR (ug/L)

NOTE:
THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCREENED IN THE TILL/WEATHERED SHALE AQUIFER. THE VOC DATA ARE FROM SAMPLES COLLECTED IN JULY 1993.

125 0 125 250
1" = 250'

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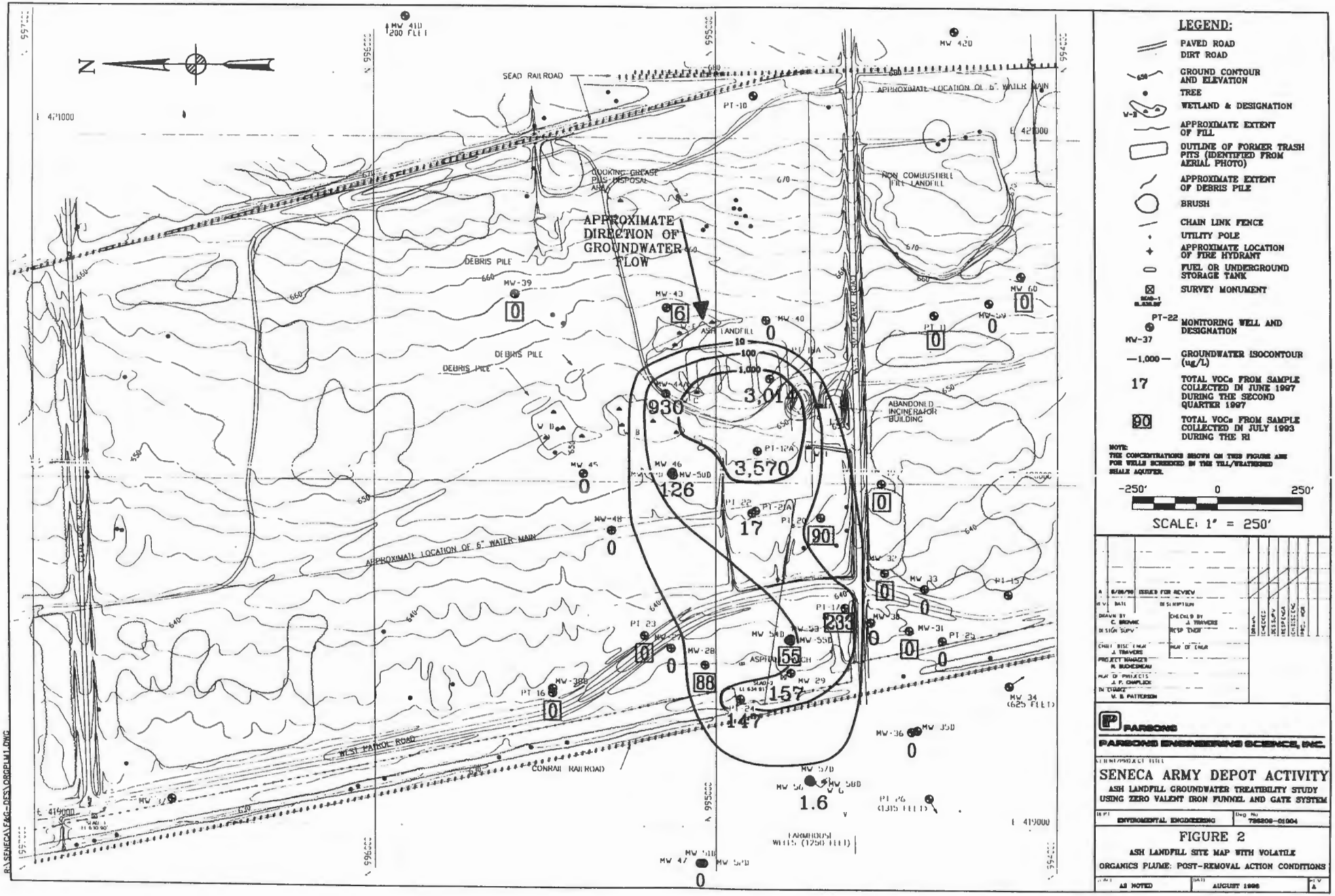
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

DEPT.	Dwg No.
ENVIROMENTAL ENGINEERING	728209-01002

FIGURE 1
ASH LANDFIL SITE MAP WITH VOLATILE ORGANICS PLUME: PRE-REMOVAL ACTION CONDITIONS

SCALE	DATE	REV
AS NOTED	DECEMBER 1997	0



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- PT-22 MONITORING WELL AND DESIGNATION
- MW-37
- —1,000— GROUNDWATER ISOCONTOUR (ug/L)
- 17 TOTAL VOCs FROM SAMPLE COLLECTED IN JUNE 1997 DURING THE SECOND QUARTER 1997
- 90 TOTAL VOCs FROM SAMPLE COLLECTED IN JULY 1993 DURING THE RI

NOTE:
THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCREENED IN THE TILL/WEATHERED SHALE AQUIFER.

-250' 0 250'

SCALE: 1" = 250'

REV	DATE	DESCRIPTION
A	6/26/98	ISSUED FOR REVIEW

DRAWN BY C. BROWN
DESIGN SUPV
CHECKED BY J. TRAVERS
RESP ENGR
CHIEF DISC ENGR J. TRAVERS
PROJECT MANAGER N. BUCHEKAU
MGR OF PROJECTS J. P. CAMPLICK
IN CHARGE W. B. PATTERSON
MGR OF ENGR

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER TREATABILITY STUDY
USING ZERO VALENT IRON FUNNEL AND GATE SYSTEM

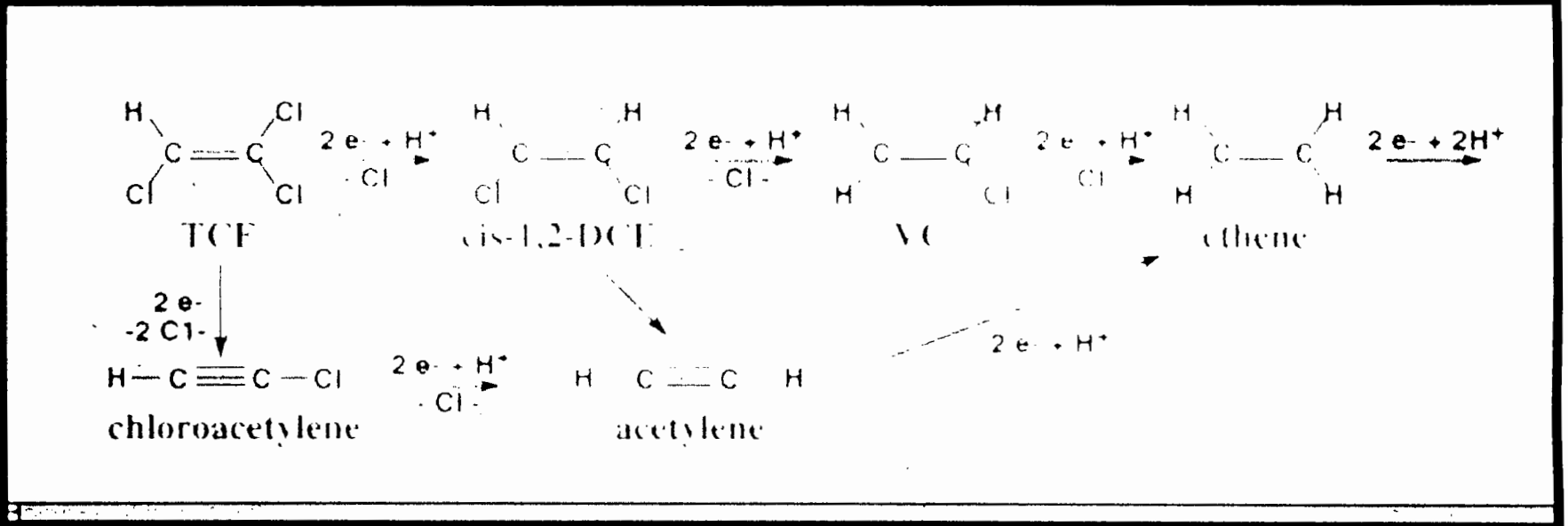
DEPT	Dwg No
ENVIRONMENTAL ENGINEERING	736206-01004

FIGURE 2
ASH LANDFILL SITE MAP WITH VOLATILE ORGANICS PLUME: POST-REMOVAL ACTION CONDITIONS

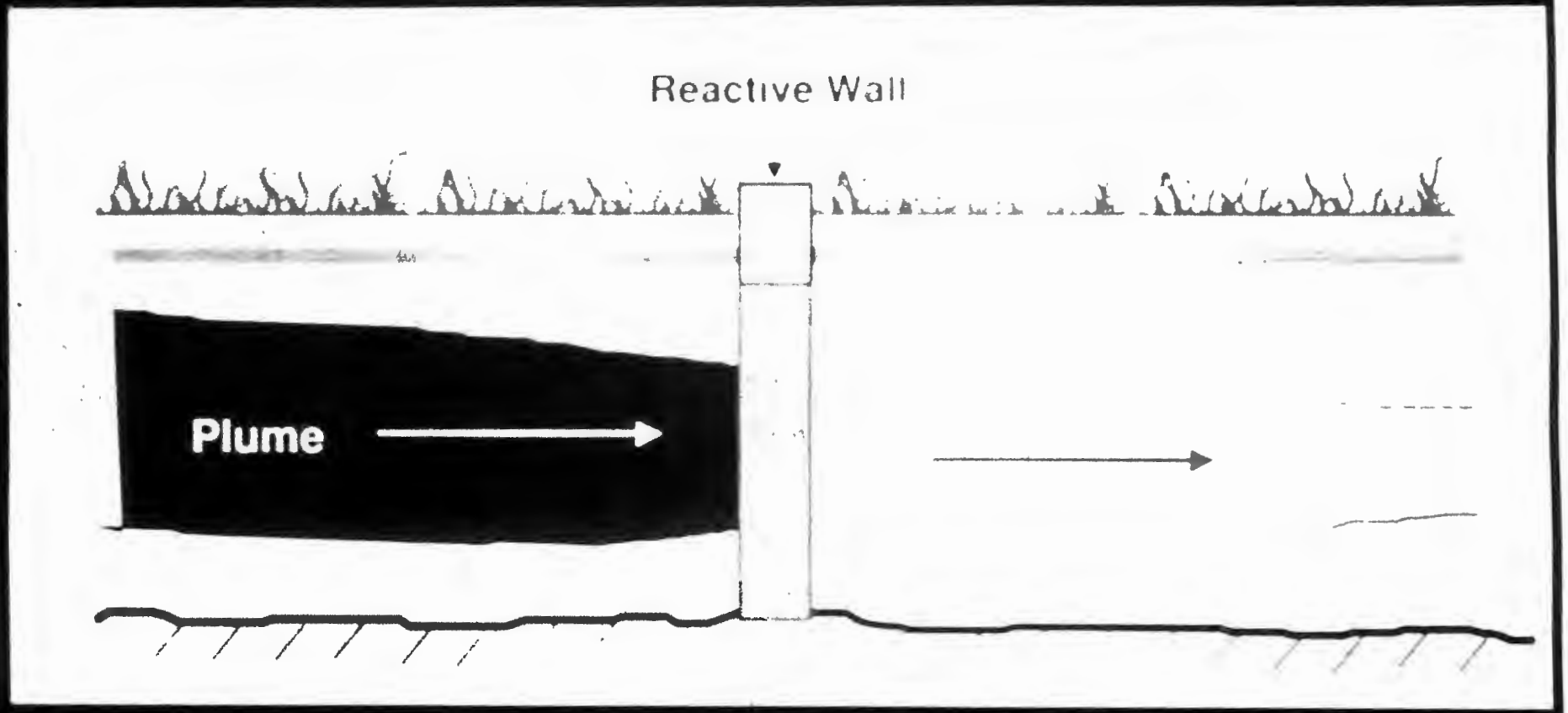
SCALE	DATE	REV
AS NOTED	AUGUST 1998	A

R:\SENECA\FIG-DES\ORGPLM1.DWG

EnviroMetal Process



EnviroMetal Process:
in situ application



Granular Iron

Site Design Summary

In-situ Pilot-Scale System, New York (May 1995)

Impermeable Zone:

- 15 ft of sealable joint sheet pile on either side of treatment zone
- 15 ft depth

Treatment Zone:

- 10 ft length
- 3› ft flow-through thickness

Influent Groundwater:

- 100s of ppb TCE, cisDCE, TCA

Pilot-Scale Installation, New York

Site History:

- installed May 1995
- monitored for six months through EPA SITE program (June - December 1995)
- in-situ velocity measurements Sept 1996, June 1997
- most recent VOC sampling June 1997
- cores obtained June 1997
- full-scale system installed December 1997

Success In Meeting Regulatory Criteria
In-Situ Installation, New York (May 1995)

VOC	Influent Conc. (ppb)	Downgradient Conc. (ppb)
TCE	32 - 330	< 1 - 1.6
cDCE	98 - 550	< 1 - 7.6
VC	8.1 - 79	< .5 - 1.2

Goals for Rective Barrier Wall Study at Ash Landfill

- *Demonstrate Concentation Reductions*
- *Evaluate Degradation Rate*
- *Determine Groundwater Flow Regime*
- *Obtain Engineering Design Data*
  - *Reactive Iron Volume*
  - *Hydraulic Charaterisitics of Barrier*

Reactive Barrier Wall Design Issues

- *Groundwater Fluctuations*
- *Continuous vs Funnel and Gate*
- *Thickness of Reactive Iron*
- *Ability to Adequately Seal and Divert Groundwater*
- *Monitoring Frequency and Location*

Reactive Barrier Wall Continuous vs Funnel and Gate

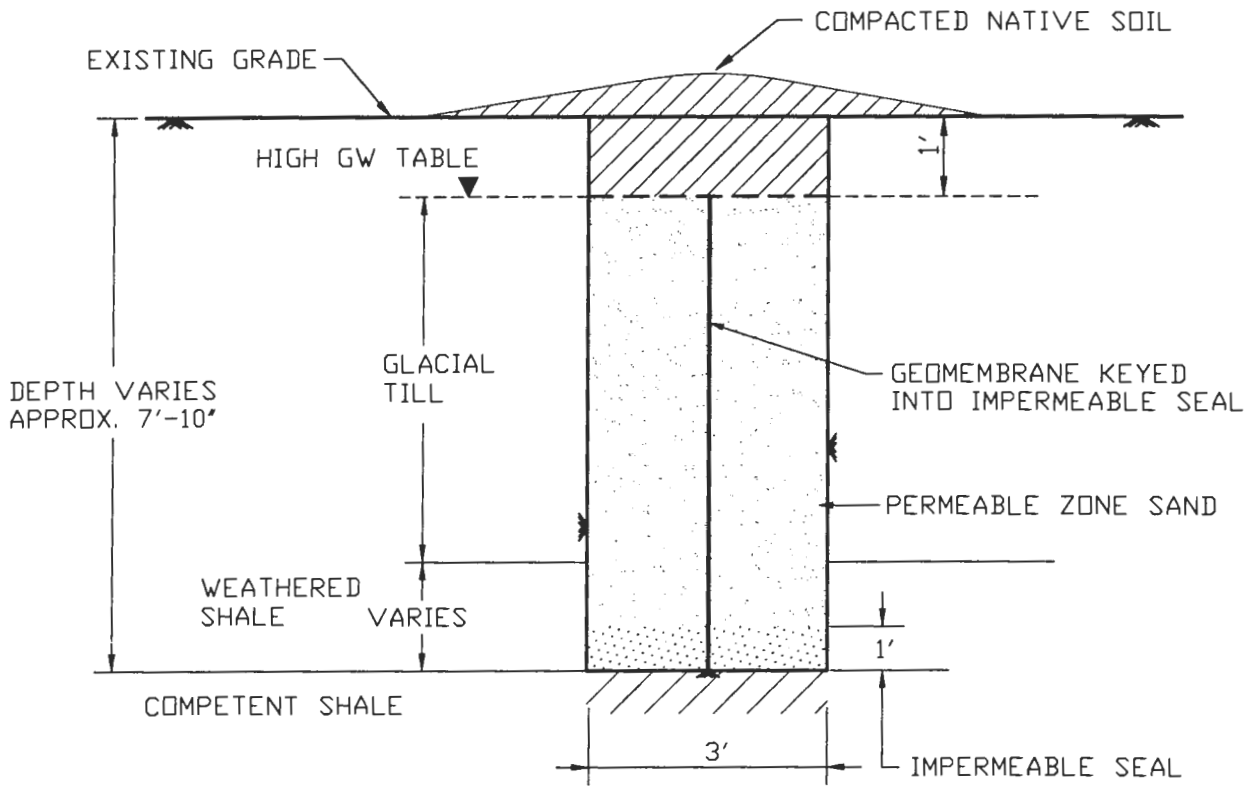
- *Groundwater Mounding*
- *Thickness of Reactive Iron*
- *Reactive Iron Changeouts*
- *Flexibility to Adapt to Alternative Technologies*
- *Monitoring Frequency and Location*

Ash Landfill, Reactive Barrier Wall Study, Scope of Work

- *Prepare Specifications*
- *Select Contractors*
  - *Enviremetals (Reactive Zero Valent Iron)*
  - *Trench Installation Contractor*
- *Install Reactive Wall*
- *Perform Groundwater Monitoring*
  - *6 Month and 12 Month*
- *Prepare Report*

NOTE(S):

1. EXCAVATION FOR THE TRENCH IS TO BE MADE TO THE TOP OF COMPETENT SHALE. THE TARGET ELEVATION OF COMPETENT SHALE IS 625 FEET. (SEE APPENDIX FOR BORING LOGS)



TYPICAL SECTION

REV	DATE	DESCRIPTION
B	9/16/98	ISSUED FOR BID
A	8/20/98	ISSUED FOR REVIEW

DRAWN BY: C. DROWNE | CHECKED BY: J. TRAVERS
DESIGN SUPV. | RESP. ENGR.
CHIEF DISC. ENGR.: J. TRAVERS | MGR. OF ENGR.
PROJECT MANAGER: M. DUCHESNEAU
MGR. OF PROJECTS: J. P. CHAPLICK
IN CHARGE: W. D. PATTERSON

DRAWN | CHECKED | DES.SUPV. | RESP.ENGR. | CH.DISC.ENG. | PROJ. MGR.

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

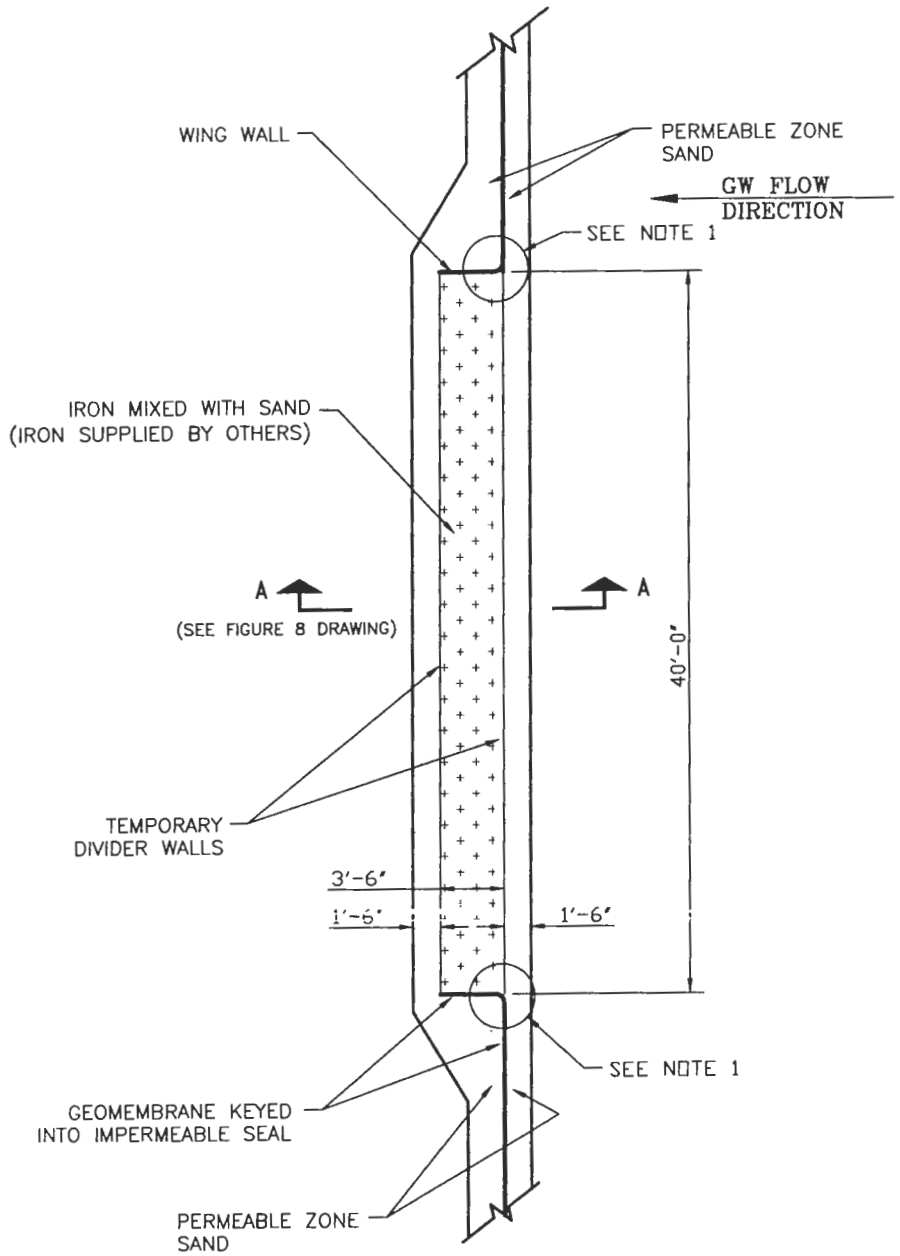
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER TREATABILITY STUDY
USING ZERO VALENT IRON FUNNEL AND GATE SYSTEM

DEPT: ENVIRONMENTAL ENGINEERING | Dwg. No.: 726209-01004

FIGURE 6
CROSS SECTION
FUNNEL SYSTEM

SCALE: NOT TO SCALE | DATE: SEPTEMBER 1998 | REV: B

R:\SENECA\FAG-DES\FNLSYS.DWG



PLAN VIEW

NOTE(S):

1. REFER TO SPECIFICATION 02372, ARTICLE 3.05, "CONSTRUCTING WING WALL CORNERS", FOR DETAILS.

REV	DATE	DESCRIPTION
B	9/16/98	ISSUED FOR BID
A	8/20/98	ISSUED FOR REVIEW

DRAWN BY: C. DROWNE	CHECKED BY: J. TRAVERS
DESIGN SUPV	RESP ENGR
CHIEF DISC ENGR: J. TRAVERS	MGR OF ENGR
PROJECT MANAGER: M. DUCHESNEAU	
MGR OF PROJECTS: J. P. CHAPLICK	
IN CHARGE: W. D. PATTERSON	

DRAWN | CHECKED | DES SUPV | RESP ENGR | CH DISCENG | PROJ MGR

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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY

ASH LANDFILL GROUNDWATER TRAETABILITY STUDY USING ZERO LANDFILL VALENT IRON FUNNEL AND GATE SYSTEM

DEPT: ENVIRONMENTAL ENGINEERING | Dwg No: 726209-01004

FIGURE 7
REACTIVE GATE

SCALE: NOT TO SCALE | DATE: SEPTEMBER 1998 | REV: B

LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- GROUNDWATER ELEVATION CONTOUR
- TREATMENT WALL GATE AND NUMBER
- PARTICLE TRACK

-100' 0 100'

SCALE: 1" = 100'

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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

DEPT	Dwg. No.
ENVIROMENTAL ENGINEERING	728209-01002

FIGURE 10
CAPTURE ZONE FOR FUNNEL AND FOUR GATE SYSTEM

SCALE	DATE	REV
AS NOTED	DECEMBER 1997	0

R:\SENECA\ASH\MODEL\TRENCH.DG-10.DWG

P:\SENECA\ASH\MODEL\TRENCH\FIG-10.DWG

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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

DEPT	Dwg No.
ENVIRONMENTAL ENGINEERING	726209-01002

FIGURE 10
CAPTURE ZONE FOR FUNNEL AND FOUR GATE SYSTEM

SCALE	DATE	REV
AS NOTED	DECEMBER 1997	0

MINUTES
RESTORATION ADVISORY BOARD
October 20, 1998 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
LTC Donald Olson, SEDA Commander
James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Absent:

Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Jeffrey Beall, Brian Dombrowski, Frank Ives, Patricia Jones, Harold Kugelmass, Russell Miller, Ken Reimer, Fred Swain, Karen Tackett, Henry Van Ness, David Wagner

Community RAB Members Not Present:

Dr. Dick Durst, Community Co-Chair (excused) Antje Baeumner (excused) Anne Herman (verbally resigned), Lucinda Sangree (verbally resigned), Dave Schneider (excused), Jan Schneider (excused), Frankie Young Long (excused), Robert McCann (excused)

Environmental Support Personnel Present:

John Buck, AEC
Keith Hoddinott, CHPPM
Michael Duchesneau, Parsons Engineering Science, Inc.
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Alicia Allen, U.S. Army Corps of Engineers, Huntsville, AL
Gina Elliott, U.S. Army Corps of Engineers, Huntsville, AL
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Neil Chaffie, Ovid Gazette
Heather Clark, Cornell University
John Finn, RETEC, Ithaca, NY

2. LTC Donald Olson provided the opening remarks for the meeting, welcomed all members and support staff to the October Restoration Advisory Board and outlined the evening's agenda. He then went around the room asking for introductions of all attending.

3. Stephen Absolom asked for any changes/comments on the August minutes. He signed them and when Dr. Durst signs them they will be entered into the record.

4. Mike Duchesneau gave a presentation on treatability studies which are considered innovative technology in progress.

Some highlights from the presentation:

Purpose of treatability studies is to provide data to support engineering design of remedial alternatives for innovative technologies.

At SEAD 25, Fire Demonstration Pad, the Army is looking at In-situ bioremediation study

At SEAD 6 (Ash Landfill) the Army is looking at In-situ Zero Valent Iron study.

SEAD 25 - the Remedial Investigation is done. They are finalizing the feasibility study and are evaluating alternatives. This technology came from the feasibility study. They are considering it because the contamination is a localized source area.

Bioventing is technology that the Air Force has used over the years. In-situ soil bioremedial technology is when bacteria are stimulated through adding air to degrade hydrocarbons in soil in a quick manner. In the process microbes respire gases as carbon is consumed. We monitor the gases. Oxygen is added to the soil through vent pipes which causes the process to accelerate.

The process involves installing vent wells, installing vapor monitoring points, and monitoring the rate of gas change at those points.

Some advantages to using this:

Simple and effective

Have little to no air emissions

It is cost effective because you are not excavating the soil.

Some disadvantages:

May not reduce high molecular weight compounds.

Requires an extended treatment time.

It is temperature sensitive. Process will slow down in the winter.

Question: Is the soil that is contaminated mostly clay like most Seneca County soil?
Answer: The pad comprised of crushed shale and some till beneath 2-4 feet.

How it is done is we install vent wells and saturate with oxygen. They shut the blower off and monitor changes of gas over a period of time. We look at the rate of loss of oxygen and look for increase of carbon dioxide.
The current scope of this effort:

- Prepare a workplan to submit for Army, EPA and state to review.

- Install vent wells and vapor monitoring points.

- Perform air permeability test.

- Perform respiration tests, initial, 6 month and 12 month.

- Prepare a report to document everything that they have found.

Question: Will the oxygen be continuously fed?
Answer: Yes

Question: If test takes a year, is there any indication of success prior to a year?
Answer: Yes, see if rates of carbon dioxide are increased and then hydrocarbons consumed. Yes, initial rates should be enough to know if the technology is favorable.

Question: Will the season make a difference?
Answer: Yes, in cold weather the rates are slow.

Question: When you say slower, what percent?
Answer: 10-degree change in temperatures will decrease the rate by 50%. If rates are significant, we may end up getting significant reductions during the test year.

Question: What is the total volume of contaminated soil?
Answer: A couple of thousand cubic yards of material approximately.

Question: Are economics driving this?
Answer: Yes. $10-$40/yd as opposed to $70-$100/yd.

Question: Will the well that is put in now be used for full scale?
Answer: Yes, we will use this equipment and wells.

Question: When would you begin final treatment?
Answer: Funding being available, pilot to full-scale effort in a few months could be done effectively and efficiently.
Steve Absolom added we also we have to prepare plan, present it to public, prepare ROD, these are what take time.

Mike also spoke about In-situ groundwater Remedial Technology. Like bioventing, there is no removal of groundwater. Treatment destroys dissolved chlorinated organic. In this technology, groundwater is passed through reactive zone with iron, zinc and tin which have unique properties that break down organics.

The proposed technology has been used at another site in New York. They used a funnel and gate system. It showed a drop in concentrations of same chlorinated organics we are looking at the the Ash Landfill

There are two types of designs, continuous wall and funnel and gate system. We are deciding on the use of funnel and gate system. By putting in gates, it could back up groundwater and cause it to break out of the surface.

It will require developing a scope of work and selecting contractor. Iron filings require a sole source contract because of the use of a patent.

Question: Plume - modeling suggested would move southwest between 70-150 years. Will it contaminate the well where it will not be usable?
Answer: It is moving very slowly. We had talked about natural attenuation letting nature do its own cleaning. Time is important. You do not want to worry about 70 years from now. Clean up range of 10 years to 30 years was felt to be important so we are pursuing this. Natural attenuation rates are very slow. We came to the conclusion of this process by evaluating other sites and with the base closing. A system that operates naturally without manpower is important. You do have to monitor but not everyday. Natural attenuation costs but not as much as dump and treat system. Still involves money. This stuff doesn't change much. This technology was something Dr. Durst suggested and was very helpful in pointing out.

Question: How deep is the proposed trench?
Answer: 7-10 feet by 3 ft wide with a funnel and gate system a liner will be put down the center. Some contractors use steel. HTPE liner another way.

Question: Do you have to angle wall?
Answer: Yes, to make flow into gates.

Steve interjected that is a full-scale pilot study to confirm that the technology will work. It will be part of final remedy in process. It makes sense to do this and stop further migration.

A copy of Mike Duchesneau's slide presentation is forwarded with these minutes.

Steve then opened the floor for open discussion.

Russell Miller attended the Community Stakeholder Forum in California. Some highlights:

- It was a three-day conference. The first day was with RAB/Community Members. Interesting to find how most have similar types of problems. Almost all groups indicated turnover 2-3 times.

- Another problem was neither confirm nor deny issue at bases. It wasn't just unique to Seneca.

- Next thing discussed was the amount of information that is put out. There is no easy way to disseminate. Talked about San Francisco State University tech tree on Internet, which covers most of different technology available. There are other websites to visit. He has paperwork if anyone wants to see it.

- The 2nd and 3rd day consisted of technical material and lectures. Various groups discussed and gave a presentation. They concluded that natural attenuation was not a good term. Most RAB members were against natural attenuation. The technical people and scientists were in favor. Regulators were undecided. By the end of the conference most of the RAB moved toward the center.

Steve introduced Heather Clark. She is doing a master thesis at Cornell University. A copy of her article is forwarded with these minutes. She is working on evaluation of the RAB process. She will do a presentation formally when her thesis is done.

Steve then gave a brief synopsis of what the BCT meeting is discussing over the next couple of days. They are discussing what to do on parcels of land to transfer in short timeframe. There have been no formal announcements or

decisions on reuse. However, the feeling that in the immediate future an announcement will happen and will have to do transfers quickly. We are taking each parcel of land as divided by the reuse plan and are going through each SWMU that has an impact on the transfer. We discussed the north end and family housing today. Tomorrow they will be addressing the airfield and the property for a proposed prison site in order to position ourselves so they we can move quickly to get the property transferred.

Question: Do you foresee any hang ups related to problem sites?
Answer: We are addressing these issues, i.e., radon in a house, lead based paint issues.

Question: Will any of this information be available?
Answer: It will be available sometime in the future.

Question: We will lease to LRA?
Answer: Yes, and the LRA will lease to someone else.

Question: What if a prison came in?
Answer: That is a transfer. It would be transferred to another government agency. Most of that is clean. If that announcement should occur, need to transfer quickly.

Tom Enroth gave a brief update on the status of SEAD 12 work in investigation for Special Weapons site. Within last month contractors on site working on data collection for the RI/FS. Investigation entails monitoring wells, collecting samples. EPA did split sampling. Test pits geophysical investigation, subsurface sampling. In addition to this, within the next couple of weeks begins the buildings survey.

Commander addressed a letter written by Ken Reimer. Letter addressed concerns that we are are not moving fast enough. Commander is also concerned with that. It takes a lot of time to go through the steps to do this work. Have specific reasons. You have through the chain of command in all areas. Same with DEC and EPA. If EPA doesn't get around to comments, then have to extend to make comments back. Don't know how to make it faster. The whole intent is to get the ROD signed and do the work.

Another concern was with the wet winter months and the money appropriated for OB grounds. Yes, it will be put on hold for winter. Contractor is on site doing surface cleanup of UXO. The ROD is close to being signed. Comments are being finalized this week.

Another question addressed a fax from EPA dated Jan 97. Read through it. Data was outdated. It noted the numerous reference to groundwater pollution. This is the purpose of Remedial Investigations to address and identify. Commander shares those concerns.

Another concern indicated on the fax is the identification of sites where radioactive components burial sites exist. This is the Q area. There is a tank behind a facility where was excavated and monitored in mid 80's and we didn't find anything. We closed it and pushed it in. In 1986 SEDA was not on NPL. Investigation was done IAW standards pertinent to then. Those are not adequate as of today. Going back and relooking at the tank at SEAD 12. This demonstrates why a ROD is important, so we don't have to go back and look at things again.

What about ATSDR. They were supposed to provide a health survey report in July? Seneca has recently received an email with the draft report. We have 30 days to comment on it.

5. Steve Absolom opened the floor to upcoming agenda items. We are still working on having a briefer from the stakeholder conference for possibly the November meeting. Janet Fallo mentioned we will have a lawyer come in to speak on environmental law soon. She asked for specific questions or items they should address.

6. There being no further business, the meeting was adjourned at 9:25 p.m. The next RAB meeting will be held on November 17 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Restoration Advisory Board
Meeting Agenda

November 17, 1998
NCO Club

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes from previous meeting** Mr. Stephen M. Absolom Dr. Dick Durst Army Co-chair/Community Co-Chair
7:10	**Natural Attenuation** Mr. Todd Wiedemeier Expert on Natural Attenuation, presenter from the National Stakeholders' Forum on Monitored Natural Attenuation
7:55	Break
8:05	**Unexploded Ordnance at the Open Burning Grounds** Mr. Kevin Healy, U.S. Army Corps of Engineers, Huntsville Division
8:20	**Open Discussion**
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
November 17, 1998 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
LTC Donald Olson, SEDA Commander
Dan Geraghty, NYS Department of Health
Carla Struble, U.S. Environmental Protection Agency
Keith Hoddinott, CHPPM

Government RAB Members Not Present:

James Quinn (excused)

Community RAB Members Present:

Richard Durst, Brian Dombrowski, Frankie Young-Long, Bob McCann, Ken Reimer, Fred Swain, Karen Tackett, Henry Van Ness, Ray A. Young

Community RAB Members Not Present:

Jeffrey Beall (excused), Antje Baeujmner (excused), Frank Ives, Harold Kugelmass (excused), Russell Miller, Dave Schneider (excused), Jan Schneider (excused), David Wagner, Patricia Jones (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science, Inc.
Kevin Healy, COE, Huntsville,
Todd Wiedemeier, Parsons Engineering Science, Inc.
Randall Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Neil Chaffie, Ovid Gazette
Heather Clark, Cornell University
John Finn, RETEC, Ithaca, NY
Peter Eisenberg, Seneca Falls
Tom Schoowrom, Seneca Falls
Joan Richardson, Waterloo

2. LTC Donald Olson provided the opening remarks for the meeting, welcomed all members and support staff to the November Restoration Advisory Board. He then asked for introductions of all attending.

3. Stephen Absolom summarized the evening's agenda. He asked if there were any comments or changes to the minutes from the October meeting. They were signed and entered into the record. He then introduced our guest speaker for the evening, Mr. Todd Wiediemier from Parsons. He would be speaking on natural attenuation. A copy of his presentation is enclosed with with these minutes.

4. Some highlights from Mr. Wiediemier's presentation:

- He has been going out to affected sites across the country to look at attenuate transport. He has found biodegradable contaminates transport in groundwater. Looking closely to evaluate natural attenuation to see where it works and where it doesn't work.

- In general fuel hydrocarbons universally biodegrade. Heavy complex ones do not.

- Last November EPA established a new definition of natural attenuation. It is a variety of processes to work toward biodegradation. The term natural attenuation is now monitored natural attenuation.

- There is intrinsic bioremediation and passive bioremediation.

- Natural is the sum of all processes reducing contamination.

- Intrinsic is the natural occurring bioremediation of contaminants in subsurface.

- Monitored natural attenuation is cost effective leaving more funds for other problem sites.

- Drawbacks - The biggest is it is subject to changes in hydrogenics or chemistry. You have to know where contaminants are and where going. The timeframe for completion of treatment is long.

- Determination applicability is site specific.

- You need to know how fast the groundwater is moving and if the plume is moving. To determine applicability you must collect the right amount and the right type of data.

- Burden of proof is on proponent of the remedy, not the regulator.

- Natural attenuation can be scientifically supported.

Question: Why would a state pay for remediation and not the responsible party?
Answer: States charge tax/fee to cover these costs. Most responsible parties would go broke.

- Natural attenuation consists of four major processes:

Advection - causes contaminants to migrate
Dispersion - Spray and disburse
Sorption - fixed
Biodegradation - microbes degrade decontaminants

- Advection- transports solutes.

- Groundwater flow moves as slug through system contamination causing it to move down gradient. Natural attenuation keeps plumes in check.

- Dispersion spreads out concentrations in plume. More groundwater impacted.

- Adsorption benzene fixed to matrix. Stops moving. Slows contaminant plume down. Contamination is removed from water.

- Aerobic processes - Biodegradation. Microbes use benzene in daily life function. Natural attenuation operated under aerobic processes uses oxygen.

- Natural attenuation also works under anaerobic conditions - found majority of contaminants degrade under anaerobic conditions using manganese, iron, sulfates.

- Anaerobic conditions which involve consuming metals works as follows:

Electron donor plus electric acceptor =
Produce metabolic byproducts =
Produce energy.

- Natural biodegradation - most plumes are not migrating. Lawrence Livermore Labs did a study on this in Texas. Overall, about 60-70 percent are at steady state of delivery. 5-10 percent are actually growing.

- Chlorinated solvents plumes are different since they started after WWII and have been around 50 years.

- Reduction starts with dechlorination. An example starts out with a plume with PCE, microbes, strip off chlorine and replace with hydrogen giving you TCE. You have electron flow and energy is produced.

- Fuel hydrocarbon microbes eat contamination as food. Microbes breathe the chlorinated compounds and therefore must have another food source.

- Intrinsic bioremediation at 88% of fuel hydrocarbon sites visited. Less than 40 percent chlorinated solvents sites visited need the process ongoing.

- Fuel hydrocarbon will always proceed to completion.

- Chlorinated solvents - different ballgame. Microbes in the plume run out of food before stopping breathing. It could migrate. That would be a problem.

- There is written guidance on how to evaluate bioremediation and success of natural attenuation.

Question: Who published the document?
Answer: It is official EPA document. You can find on Ada's webpage. The document number is 600-98-128.

- Mr. Wiedemeier then showed slides depicting information about various sites around the country.

- He then opened the floor for questions:

Question: Does the soil have anything to do with reaction?
Answer: Yes, in sandy soil groundwater moves faster than in clay soils. More mixing, more electrons to breathe, mixing causes reactions faster. Clay soils slower not as much mixing. Methane reaction not as fast. Groundwater not as fast either.

Question: Are you finding any more support for natural attenuation?

Answer: Yes, more support than 5 years ago but many are still close minded.

Question: For chlorinated solvents--what time frames are considered acceptable?

Answer: Example, on Cape Cod large chlorinate ethane plume, they compared natural attenuation with pump and treat system. Natural attenuation was best science. After 50 years the pump/treat system cost approximately 200 million dollars. Natural attenuation would be orders of magnitude.

Question: Because natural attenuation stalls when run out of food, is there any experience with injecting food into microbes to get over hump?

Answer: Yes, lot of experience with this. We must determine how long the donor is around to stimulate growth. Need to monitor it. We really don't know timeframe for monitoring.

Question: What is the significance of Iron 2.

Answer: Iron-reducing bacteria breaths Iron 3. Iron 2 soluble in water. It measures it. It represents the number of available electrons.

Question: At your site at Cape Cod, has anyone done model data for natural attenuation?

Answer: Data showed plume is steady. We capped the landfill to cut off source. We calibrated the model to existing system. Model shows over 50 years degrade plume receding. Then we use pumping wells in that model. The plume is so diluted we must pump a lot of water out to remove small amount of contaminant. Dilution is a limiting factor.

Question: Regarding Cape Cod, natural attenuation will be hard sell. What kind of citizen response are you getting?

Answer: Very active, very involved. It is occurring. Not convinced that the slugs are not migrating. Concerned with property value. Wells are active. Treatment area appears as a more proactive treatment.

Question: Monitoring be a compromise?

Answer: Yes, it had made it easier. Long term monitoring plan have trigger wells so if plume starts to move contingent remedy is in place. They put wells in to contain plume. Monitoring with contingency plan is written into ROD.

Question: What is the fate of the chlorine and organics in the groundwater system?
Answer: At some distance from the plume an oxygen deficiency and elevated chlorides will exist. This will eventually disperse and you will eventually be able to drink the water.

Question: Do any sites have organic matter other than oil contamination?
Answer: Some sites you do. Useful for siting of contingency wells.

Question: Some of the measurements may not be as valid. How about the measure of microbes during this process? Any monitoring of those levels?
Answer: There are some people doing this. Parsons is not.

5. Our next presenter was Kevin Healy from the Corps of Engineers in Huntsville, AL. He spoke about the progression of the Open Burning Grounds Ordnance and Explosives Remediation Project. A copy of the handout is enclosed with these minutes.

Some highlights from Kevin's presentation:

- Progressing toward ROD at OBG. Received DDESB permission to go out and do some testing at OBG to see how equipment will work. Found out that the equipment did not work as well as they had hoped. Went back and relook at effort.

- Initial approach to the project, first assumption was that as a burning ground OE would be predominately pyrotechnic trash and that no explosives would be evident beyond a one foot depth.

- They would use a two-foot clearance. If there is nothing below the first foot they would be able to release for unrestricted use.

- The Explosive Safety submission was turned down as OE was evident at greater depths due to past burials and bulldozing operations at Savanna AD. So now they have to characterize the site.

- Future direction:

Excavate and sift the low-lying hill. They are setting up for this.

Excavate and sift the pads and pad berms as funding and weather conditions allow.

Need to strip one foot off the existing geophysical test grid and retest the geophysical instrumentation. Need to determine our abilities to characterize without clutter from debris.

Some questions that were generated:

Question: Where is the one-foot that you are going to take off going?
Answer: Stockpiled and sifted to make sure there is nothing in it and then put back. Soil is not contaminated. The good news is they are doing something. It isn't going as quickly as we had hoped.

Question: What is unusual about that site?
Answer: This is the first OB ground site. More pyrotechnic trash all over the entire site. That's causing our problem.

Question: When you sift, how small are the particles that you take out.
Answer: Anything greater than one inch would be caught, i.e., pieces of aluminum and steel, not lead. Pad Berms and certain areas have lead contamination. That will be dealt with separately. Remaining soil sifted for UXO is not lead contaminated. When done, no ordnance problem or lead contamination will exist. May not be able to do bulk of work until next May/June.

Question: Why is it so urgent?
Answer: We will have timetable when ROD is signed. Can't do until ordnance done. The good news is it is not the first priority for land transfer.

Question: What about contractor cost?
Answer: Cost may go up or down. Three bids were reviewed.

Question: Is there a penalty for delay?
Answer: Can't answer that. EODT contract does not have full contract awarded for full site. No penalty can be awarded. It is necessary for us to resolve our issues before award of contract.

6. Steve Absolom opened for floor for discussion:

Question: Dr. Durst was concerned about a rumor that there was some radioactive stuff in ditch outside Q Area.
Answer: This rumor was new to us. They are investigating and have found dials that have radium paint.

7. Next issue brought up was future agenda items.

- One of the topics was obtaining a legal representative from EPA to talk about laws. It can be done at the January or May meeting. It was voted by a show of hands to do this at the January meeting.

8. There being no further business, the meeting was adjourned at 9:05 p.m. There will not be a RAB meeting the month of December due to the holiday season. The next RAB meeting with both government and community members will be held on January 19 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

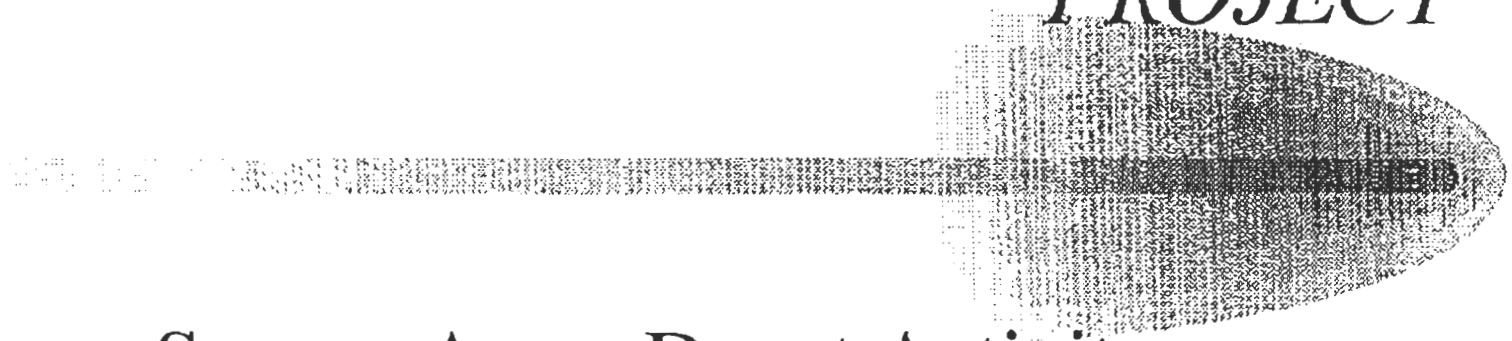
Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

Richard A. Durst

RICHARD A. DURST
Community Co-Chair

PROGRESSION OF THE OPEN BURNING GROUNDS ORDNANCE AND EXPLOSIVES REMEDIATION PROJECT



Seneca Army Depot Activity

Restoration Advisory Board Presentation

17 November 1998

Project Goals

- To Remediate Ordnance and Explosives (OE)
- To Protect Workers during the pending Hazardous, Toxic and Radiological Waste (HTRW) Remediation project

Definitions

- OE -- Ordnance and Explosives: Bombs and Warheads; guided and ballistic missiles; artillery and mortar; rocket ammunition, mines; demolition charges, pyrotechnics, grenades; containerized and uncontainerized explosives and propellants; military chemical agents; and all similar and related items or components, explosive in nature or otherwise designed to cause damage to personnel or material. Soils with explosive constituents are considered OE if the concentration is sufficient to be reactive and present an imminent safety hazard.

Definitions (continued)

- UXO -- Unexploded Ordnance: An item of ordnance which has failed to function as designed, or has been abandoned or discarded and is still capable of functioning and causing injury to personnel or material.

- UXO Personnel: Graduates of the US Naval Explosive Ordnance Disposal (EOD) School at Indianhead, Maryland. Active duty EOD experience requirements vary with position (Sr. Supervisor -- 15 years, Supervisor --10 years, Specialist -- 3 years).

Project Requirements

- Excavation and sifting of the low-lying hill, burning pads and pad berms and removal of OE. Stockpiling of soil for future HTRW remediation.
- Removal of OE from the 25 acres (+/-) between the burn pads (see Slide 7)

Removal of OE from the 25 acres between the burn pads

- Effort is governed by DDESB requirements. Future use is a critical issue.

  For Limited Public Access (e.g. wildlife preserve or livestock grazing):

  All OE must be cleared a minimum depth of one foot

  For Public Access (e.g. farming, surface recreation, vehicle parking, surface supply storage:

  All OE must be cleared to a minimum depth of 4 feet.

Removal of OE from the 25 acres between the burn pads (continued).

For Unrestricted Access:

All OE must be cleared to 10 feet or excavation depth plus 4 feet, whichever is greater.

Note: "Clearance" is applicable if the OE is known to exist. If not yet known, characterization can be used to prove/disprove presence. If OE is non-existent, or non-existent below a specific depth, then clearance is no longer necessary beyond the depth of existence and DDESB approval can be obtained.

Initial Approach.

- *Explosives Safety Submission prepared under the assumptions:*

  As a burning ground, OE was predominantly pyrotechnic trash. No High Explosives would be present beyond possibly a surface occurrence from kickouts.

  As a burning ground, no OE would be evident beyond a one foot depth. Therefore, a two foot clearance would be performed and unrestricted use would be sought.

Initial Approach -- Results.

- *Explosives Safety Submission was turned down based upon USATCES' experience at Savanna AD. OE was evident at greater depths due to past burials and bulldozing operations.*
- *Full-blown characterization would be required to determine to what depth OE was present or SEDA would have to settle for permanent restrictions on land use.*

Initial Approach -- Attempted Resolution.

- *Initial attempts at characterization:*

  Geophysical Test Plot - planted inert/fake items to test instrumentation and determine depths at which instrumentation was capable of finding OE. Instrumentation was highly limited based upon surface clutter and naturally-occurring soil magnetism.

  Limited investigation - revealed extensive amount of OE-related trash present. Occurrence may be limited to the top 3-9 inches of depth.

Possible Solutions/Considerations.

- *In pursuit of unrestricted future use:*

  Strip off top foot of soil to remove interference and retest geophysical instrumentation. Complete characterization may then be possible. If not, soil down to a depth beneath all OE will have to be excavated and sifted.

  Concern: Very expensive and time-consuming.

- *In pursuit of Public Access:*

  Leave site surface as is and place four feet of fill over all 30 acres to achieve DDESB's four foot requirement.

  Concern: Very expensive and time-consuming.

Possible Solutions/Considerations (continued).

- *Site is to become part of a Wildlife/Conservation area.*

  Add one foot of fill to meet DDESB's requirement?

  Concern: LRA/RAB/State might not wish to disallow the general public use of the land, permanently.

  Leave OE as is and turn site into a wetlands?

  Concern: Public acceptance.

  Contamination remains and possibly endangers the wetland/wildlife.

Possible Solutions/Considerations (continued).

- *Do nothing and permanently restrict the site.*

  Use institutional controls (e.g. fencing) to prevent use.

  Concerns: LRA/RAB/State might not wish to accept the land, either in part (30 acres) or in whole (6000 acres) with threat of possible OE remaining.

  Fences may inspire too much curiousity, hence, possible liability.

  Responsibility for monitoring/maintaining following closure?

Future Directions.

- *Excavate and sift the low-lying hill.*
- *Excavate and sift the pads and pad berms as funding and weather conditions allow.*
- *Need to strip one foot off the existing Geophysical Test Grid and retest the geophysical instrumentation. Need to determine our abilities to characterize.*

MINUTES
RESTORATION ADVISORY BOARD
October 20, 1998 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
LTC Donald Olson, SEDA Commander
James Quinn, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Absent:

Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Jeffrey Beall, Brian Dombrowski, Frank Ives, Patricia Jones, Harold Kugelmass, Russell Miller, Ken Reimer, Fred Swain, Karen Tackett, Henry Van Ness, David Wagner

Community RAB Members Not Present:

Dr. Dick Durst, Community Co-Chair (excused) Antje Baeumner (excused) Anne Herman (verbally resigned), Lucinda Sangree (verbally resigned), Dave Schneider (excused), Jan Schneider (excused), Frankie Young Long (excused), Robert McCann (excused)

Environmental Support Personnel Present:

John Buck, AEC
Keith Hoddinott, CHPPM
Michael Duchesneau, Parsons Engineering Science, Inc.
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Alicia Allen, U.S. Army Corps of Engineers, Huntsville, AL
Gina Elliott, U.S. Army Corps of Engineers, Huntsville, AL
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Neil Chaffie, Ovid Gazette
Heather Clark, Cornell University
John Finn, RETEC, Ithaca, NY

2. LTC Donald Olson provided the opening remarks for the meeting, welcomed all members and support staff to the October Restoration Advisory Board and outlined the evening's agenda. He then went around the room asking for introductions of all attending.

3. Stephen Absolom asked for any changes/comments on the August minutes. He signed them and when Dr. Durst signs them they will be entered into the record.

4. Mike Duchesneau gave a presentation on treatability studies which are considered innovative technology in progress.

Some highlights from the presentation:

Purpose of treatability studies is to provide data to support engineering design of remedial alternatives for innovative technologies.

At SEAD 25, Fire Demonstration Pad, the Army is looking at In-situ bioremediation study

At SEAD 6 (Ash Landfill) the Army is looking at In-situ Zero Valent Iron study.

SEAD 25 - the Remedial Investigation is done. They are finalizing the feasibility study and are evaluating alternatives. This technology came from the feasibility study. They are considering it because the contamination is a localized source area.

Bioventing is technology that the Air Force has used over the years. In-situ soil bioremedial technology is when bacteria are stimulated through adding air to degrade hydrocarbons in soil in a quick manner. In the process microbes respire gases as carbon is consumed. We monitor the gases. Oxygen is added to the soil through vent pipes which causes the process to accelerate.

The process involves installing vent wells, installing vapor monitoring points, and monitoring the rate of gas change at those points.

Some advantages to using this:

Simple and effective

Have little to no air emissions

It is cost effective because you are not excavating the soil.

Some disadvantages:

May not reduce high molecular weight compounds.

Requires an extended treatment time.

It is temperature sensitive. Process will slow down in the winter.

Question: Is the soil that is contaminated mostly clay like most Seneca County soil?
Answer: The pad comprised of crushed shale and some till beneath 2-4 feet.

How it is done is we install vent wells and saturate with oxygen. They shut the blower off and monitor changes of gas over a period of time. We look at the rate of loss of oxygen and look for increase of carbon dioxide.
The current scope of this effort:

- Prepare a workplan to submit for Army, EPA and state to review.

- Install vent wells and vapor monitoring points.

- Perform air permeability test.

- Perform respiration tests, initial, 6 month and 12 month.

- Prepare a report to document everything that they have found.

Question: Will the oxygen be continuously fed?
Answer: Yes

Question: If test takes a year, is there any indication of success prior to a year?
Answer: Yes, see if rates of carbon dioxide are increased and then hydrocarbons consumed. Yes, initial rates should be enough to know if the technology is favorable.

Question: Will the season make a difference?
Answer: Yes, in cold weather the rates are slow.

Question: When you say slower, what percent?
Answer: 10-degree change in temperatures will decrease the rate by 50%. If rates are significant, we may end up getting significant reductions during the test year.

Question: What is the total volume of contaminated soil?
Answer: A couple of thousand cubic yards of material approximately.

Question: Are economics driving this?
Answer: Yes. $10-$40/yd as opposed to $70-$100/yd.

Question: Will the well that is put in now be used for full scale?
Answer: Yes, we will use this equipment and wells.

Question: When would you begin final treatment?
Answer: Funding being available, pilot to full-scale effort in a few months could be done effectively and efficiently.
Steve Absolom added we also we have to prepare plan, present it to public, prepare ROD, these are what take time.

Mike also spoke about In-situ groundwater Remedial Technology. Like bioventing, there is no removal of groundwater. Treatment destroys dissolved chlorinated organic. In this technology, groundwater is passed through reactive zone with iron, zinc and tin which have unique properties that break down organics.

The proposed technology has been used at another site in New York. They used a funnel and gate system. It showed a drop in concentrations of same chlorinated organics we are looking at the the Ash Landfill

There are two types of designs, continuous wall and funnel and gate system. We are deciding on the use of funnel and gate system. By putting in gates, it could back up groundwater and cause it to break out of the surface.

It will require developing a scope of work and selecting contractor. Iron filings require a sole source contract because of the use of a patent.

Question: Plume - modeling suggested would move southwest between 70-150 years. Will it contaminate the well where it will not be usable?
Answer: It is moving very slowly. We had talked about natural attenuation letting nature do its own cleaning. Time is important. You do not want to worry about 70 years from now. Clean up range of 10 years to 30 years was felt to be important so we are pursuing this. Natural attenuation rates are very slow. We came to the conclusion of this process by evaluating other sites and with the base closing. A system that operates naturally without manpower is important. You do have to monitor but not everyday. Natural attenuation costs but not as much as dump and treat system. Still involves money. This stuff doesn't change much. This technology was something Dr. Durst suggested and was very helpful in pointing out.

Question: How deep is the proposed trench?
Answer: 7-10 feet by 3 ft wide with a funnel and gate system a liner will be put down the center. Some contractors use steel. HTPE liner another way.

Question: Do you have to angle wall?
Answer: Yes, to make flow into gates.

Steve interjected that is a full-scale pilot study to confirm that the technology will work. It will be part of final remedy in process. It makes sense to do this and stop further migration.

A copy of Mike Duchesneau's slide presentation is forwarded with these minutes.

Steve then opened the floor for open discussion.

Russell Miller attended the Community Stakeholder Forum in California. Some highlights:

- It was a three-day conference. The first day was with RAB/Community Members. Interesting to find how most have similar types of problems. Almost all groups indicated turnover 2-3 times.

- Another problem was neither confirm nor deny issue at bases. It wasn't just unique to Seneca.

- Next thing discussed was the amount of information that is put out. There is no easy way to disseminate. Talked about San Francisco State University tech tree on Internet, which covers most of different technology available. There are other websites to visit. He has paperwork if anyone wants to see it.

- The 2nd and 3rd day consisted of technical material and lectures. Various groups discussed and gave a presentation. They concluded that natural attenuation was not a good term. Most RAB members were against natural attenuation. The technical people and scientists were in favor. Regulators were undecided. By the end of the conference most of the RAB moved toward the center.

Steve introduced Heather Clark. She is doing a master thesis at Cornell University. A copy of her article is forwarded with these minutes. She is working on evaluation of the RAB process. She will do a presentation formally when her thesis is done.

Steve then gave a brief synopsis of what the BCT meeting is discussing over the next couple of days. They are discussing what to do on parcels of land to transfer in short timeframe. There have been no formal announcements or

decisions on reuse. However, the feeling that in the immediate future an announcement will happen and will have to do transfers quickly. We are taking each parcel of land as divided by the reuse plan and are going through each SWMU that has an impact on the transfer. We discussed the north end and family housing today. Tomorrow they will be addressing the airfield and the property for a proposed prison site in order to position ourselves so they we can move quickly to get the property transferred.

Question: Do you foresee any hang ups related to problem sites?
Answer: We are addressing these issues, i.e., radon in a house, lead based paint issues.

Question: Will any of this information be available?
Answer: It will be available sometime in the future.

Question: We will lease to LRA?
Answer: Yes, and the LRA will lease to someone else.

Question: What if a prison came in?
Answer: That is a transfer. It would be transferred to another government agency. Most of that is clean. If that announcement should occur, need to transfer quickly.

Tom Enroth gave a brief update on the status of SEAD 12 work in investigation for Special Weapons site. Within last month contractors on site working on data collection for the RI/FS. Investigation entails monitoring wells, collecting samples. EPA did split sampling. Test pits geophysical investigation, subsurface sampling. In addition to this, within the next couple of weeks begins the buildings survey.

Commander addressed a letter written by Ken Reimer. Letter addressed concerns that we are are not moving fast enough. Commander is also concerned with that. It takes a lot of time to go through the steps to do this work. Have specific reasons. You have through the chain of command in all areas. Same with DEC and EPA. If EPA doesn't get around to comments, then have to extend to make comments back. Don't know how to make it faster. The whole intent is to get the ROD signed and do the work.

Another concern was with the wet winter months and the money appropriated for OB grounds. Yes, it will be put on hold for winter. Contractor is on site doing surface cleanup of UXO. The ROD is close to being signed. Comments are being finalized this week.

Another question addressed a fax from EPA dated Jan 97. Read through it. Data was outdated. It noted the numerous reference to groundwater pollution. This is the purpose of Remedial Investigations to address and identify. Commander shares those concerns.

Another concern indicated on the fax is the identification of sites where radioactive components burial sites exist. This is the Q area. There is a tank behind a facility where was excavated and monitored in mid 80's and we didn't find anything. We closed it and pushed it in. In 1986 SEDA was not on NPL. Investigation was done IAW standards pertinent to then. Those are not adequate as of today. Going back and relooking at the tank at SEAD 12. This demonstrates why a ROD is important, so we don't have to go back and look at things again.

What about ATSDR. They were supposed to provide a health survey report in July? Seneca has recently received an email with the draft report. We have 30 days to comment on it.

5. Steve Absolom opened the floor to upcoming agenda items. We are still working on having a briefer from the stakeholder conference for possibly the November meeting. Janet Fallo mentioned we will have a lawyer come in to speak on environmental law soon. She asked for specific questions or items they should address.

6. There being no further business, the meeting was adjourned at 9:25 p.m. The next RAB meeting will be held on November 17 at 7:00 P.M. at the NCO Club.

Respectfully submitted,

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

_____
STEPHEN M. ABSOLOM
U.S. Army Co-Chair

_____
RICHARD A. DURST
Community Co-Chair

Presentation to the RAB
October 20, 1998

Remedial Technologies
Treatability Studies

Michael Duchesneau, P. E.

PARSONS ENGINEERING SCIENCE

Superfund Policy on Treatability Studies

CERCLA states :

"Bench - or pilot-scale treatability studies shall be conducted, when appropriate and practicable, to provide additional data to support engineering design of remedial alternatives"

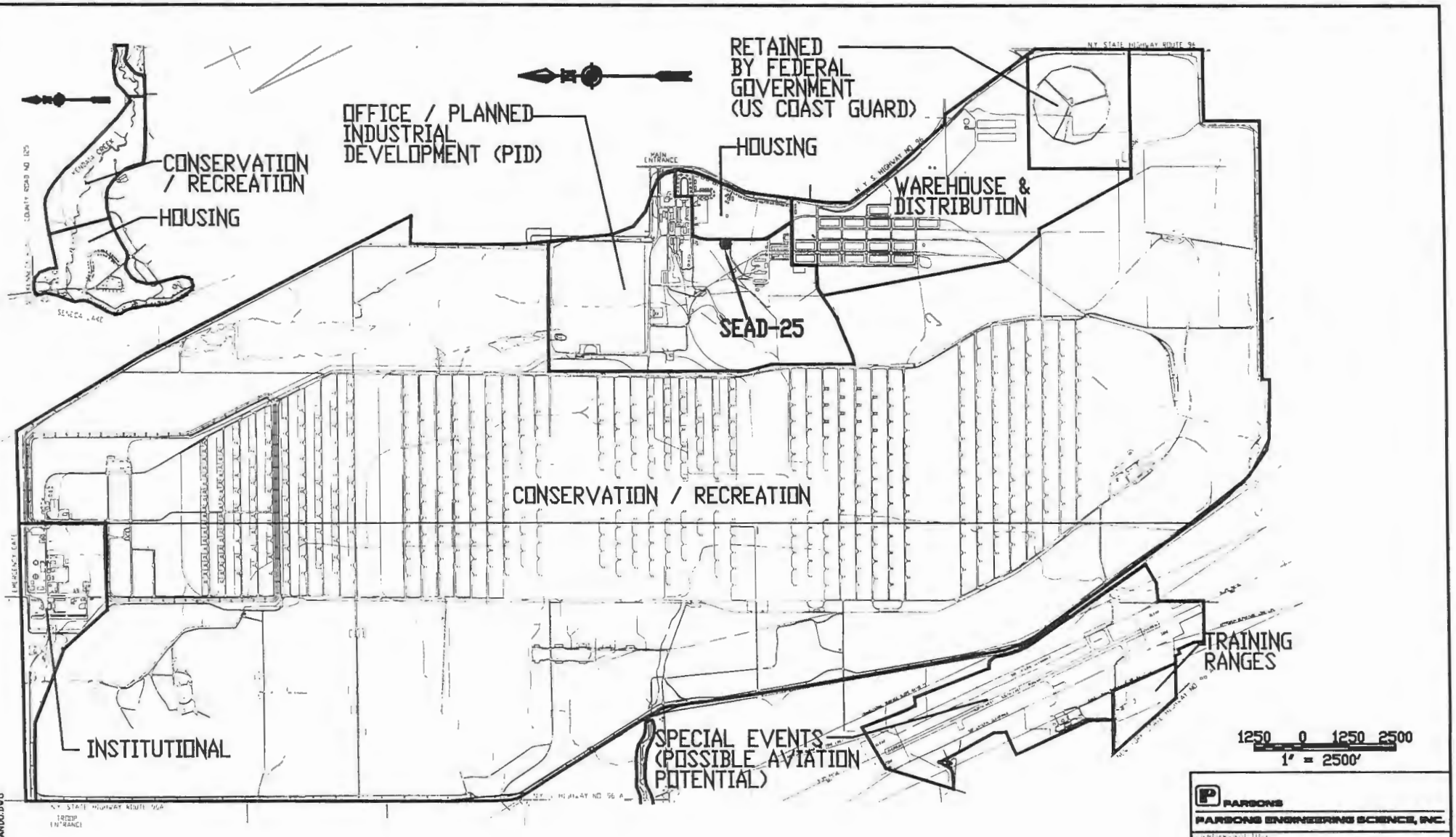
Purpose of Treatabilty Study

- *Provide site-specific treatment data*
- *Effectiveness of innovative technology*
- *Support selection of the remedy*
- *Provide data related to implementation of the selected remedy*

Sites and Technologies Selected for Treatability Studies

SEAD-25 (Fire Demonstration Pad)
In-situ Bioremediation Study (Bioventing)

SEAD-6 (Ash Landfill)
In-situ Zero Valent Iron
(Reactive Barrier Wall)



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SENECA ARMY DEPOT ACTIVITY

SEAD-25

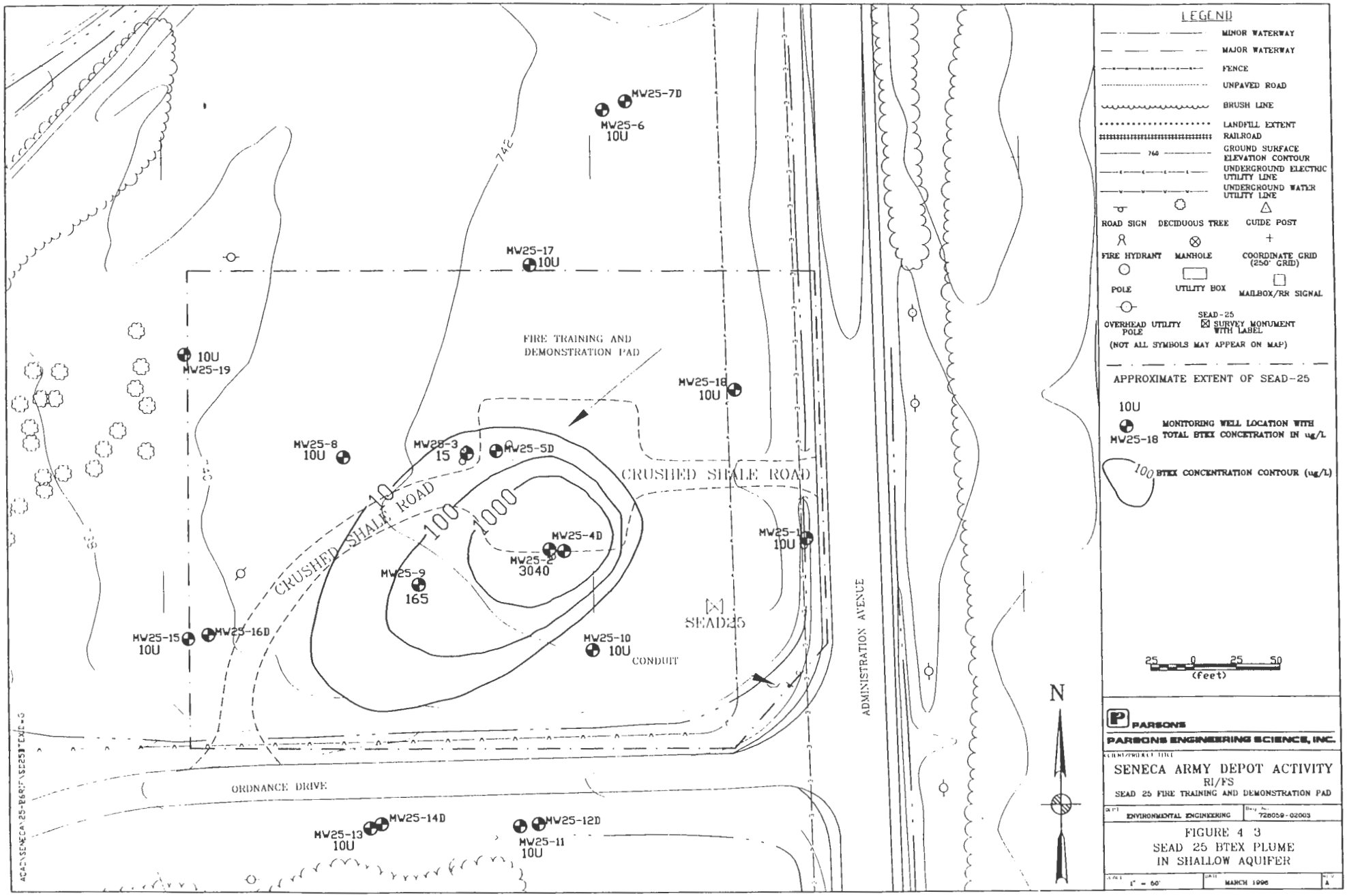
ENVIRONMENTAL ENGINEERING | No. 728510-08007

SEAD-25
SITE LOCATION AND
LAND USE

ACAD\SENECA\ASHLAND\ASHLAND1.DWG

Summary of Site Conditions (SEAD-25)

- *Used for Fire Training Activities*
- *Within Industrial Land Use Area*
- *Constituents of Concern*
  - *Volatile and Semi-Volatile Petroleum Hydrocarbons (i.e. BTEX) in Soil and Groundwater*
- *Localized Source Area*
- *Limited Groundwater Plume*



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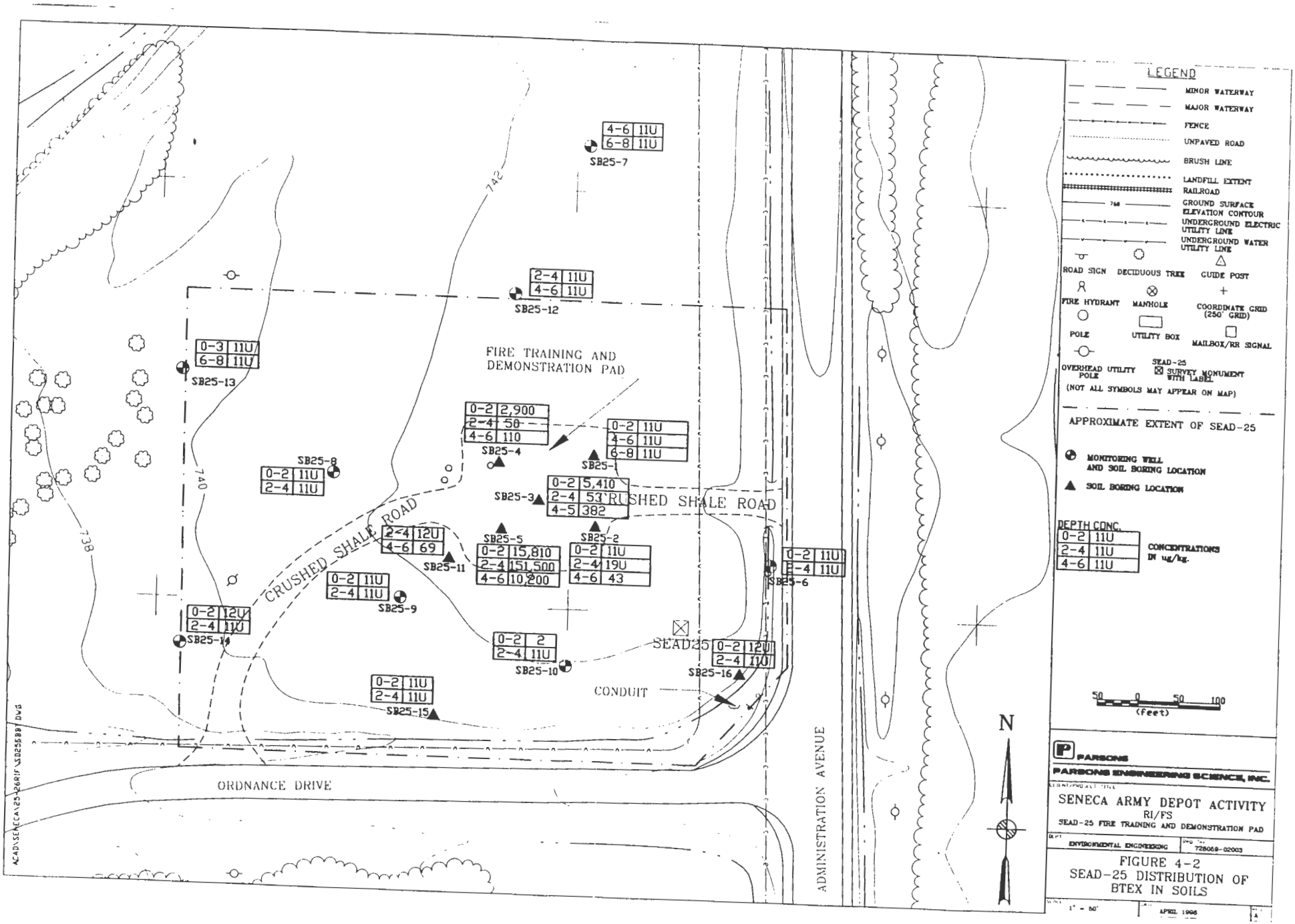
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD 25 FIRE TRAINING AND DEMONSTRATION PAD

ENVIRONMENTAL ENGINEERING	726059-02003

FIGURE 4 3
SEAD 25 BTEX PLUME
IN SHALLOW AQUIFER

1" = 60'	MARCH 1996	A


FIRE TRAINING AND DEMONSTRATION PAD
CRUSHED SHALE ROAD
CRUSHED SHALE ROAD
ORDNANCE DRIVE
ADMINISTRATION AVENUE
CONDUIT
SEAD25
742
740
738
SB25-1
SB25-2
SB25-3
SB25-4
SB25-5
SB25-6
SB25-7
SB25-8
SB25-9
SB25-10
SB25-11
SB25-12
SB25-13
SB25-14
SB25-15
SB25-16
4-6 11U
6-8 11U
2-4 11U
4-6 11U
0-3 11U
6-8 11U
0-2 2,900
2-4 50
4-6 110
0-2 11U
4-6 11U
6-8 11U
0-2 11U
2-4 11U
0-2 5,410
2-4 53
4-5 382
2-4 12U
4-6 69
0-2 15,810
2-4 151,500
4-6 10,200
0-2 11U
2-4 19U
4-6 43
0-2 11U
2-4 11U
0-2 11U
2-4 11U
0-2 12U
2-4 11U
0-2 2
2-4 11U
0-2 12U
2-4 11U
0-2 11U
2-4 11U
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SEAD-25
SURVEY MONUMENT WITH LABEL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-25
MONITORING WELL AND SOIL BORING LOCATION
SOIL BORING LOCATION
DEPTH CONC.
0-2 11U
2-4 11U
4-6 11U
CONCENTRATIONS IN ug/kg.
50 0 50 100
(Feet)
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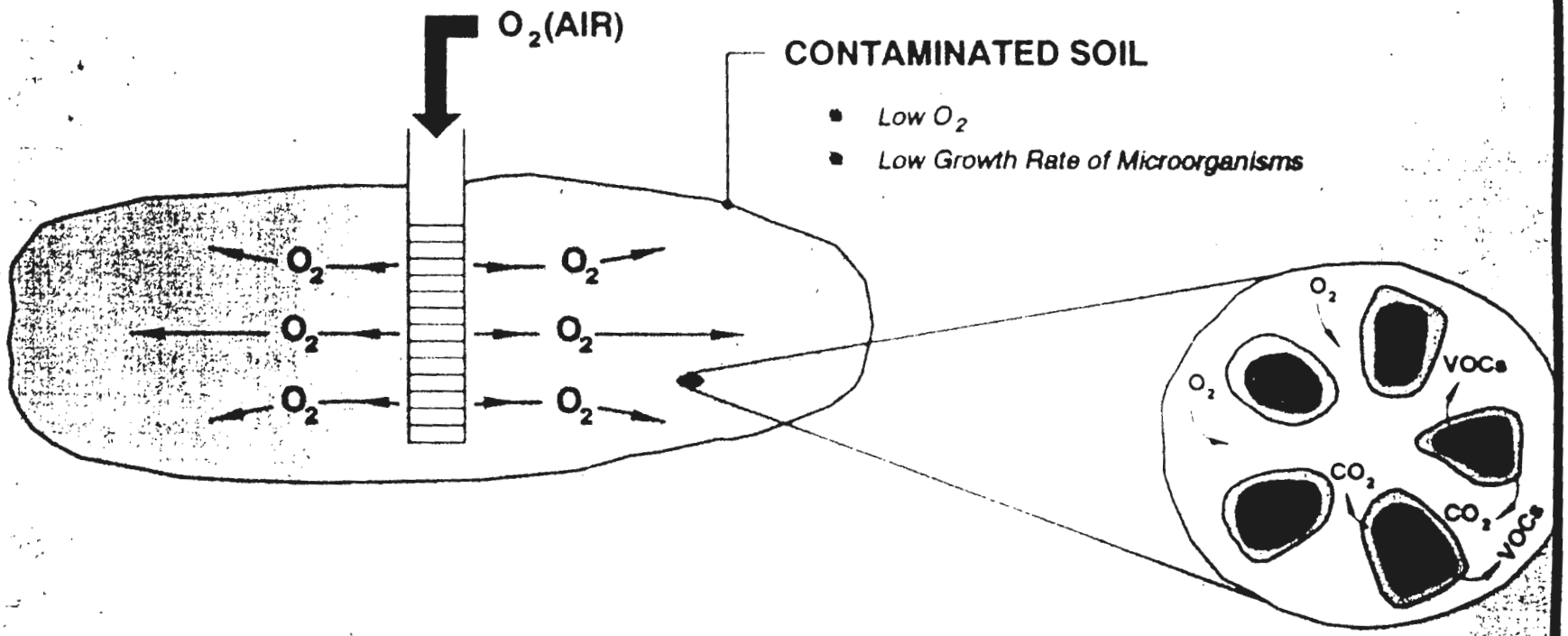
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD
ENVIRONMENTAL ENGINEERING
728058-02003
FIGURE 4-2
SEAD-25 DISTRIBUTION OF BTEX IN SOILS
1" = 50'
APRIL 1996
A

What is Bioventing ?

- *In-situ Soil Bioremedial Technology*
- *Addition of Oxygen (Air) Stimulates Natural Microbial Degradation*
- *Natural Biodegradation is Dependent upon Slow Natural O_2 Diffusion Rates*
- *Respiration Tests used to Evaluate Effectiveness*

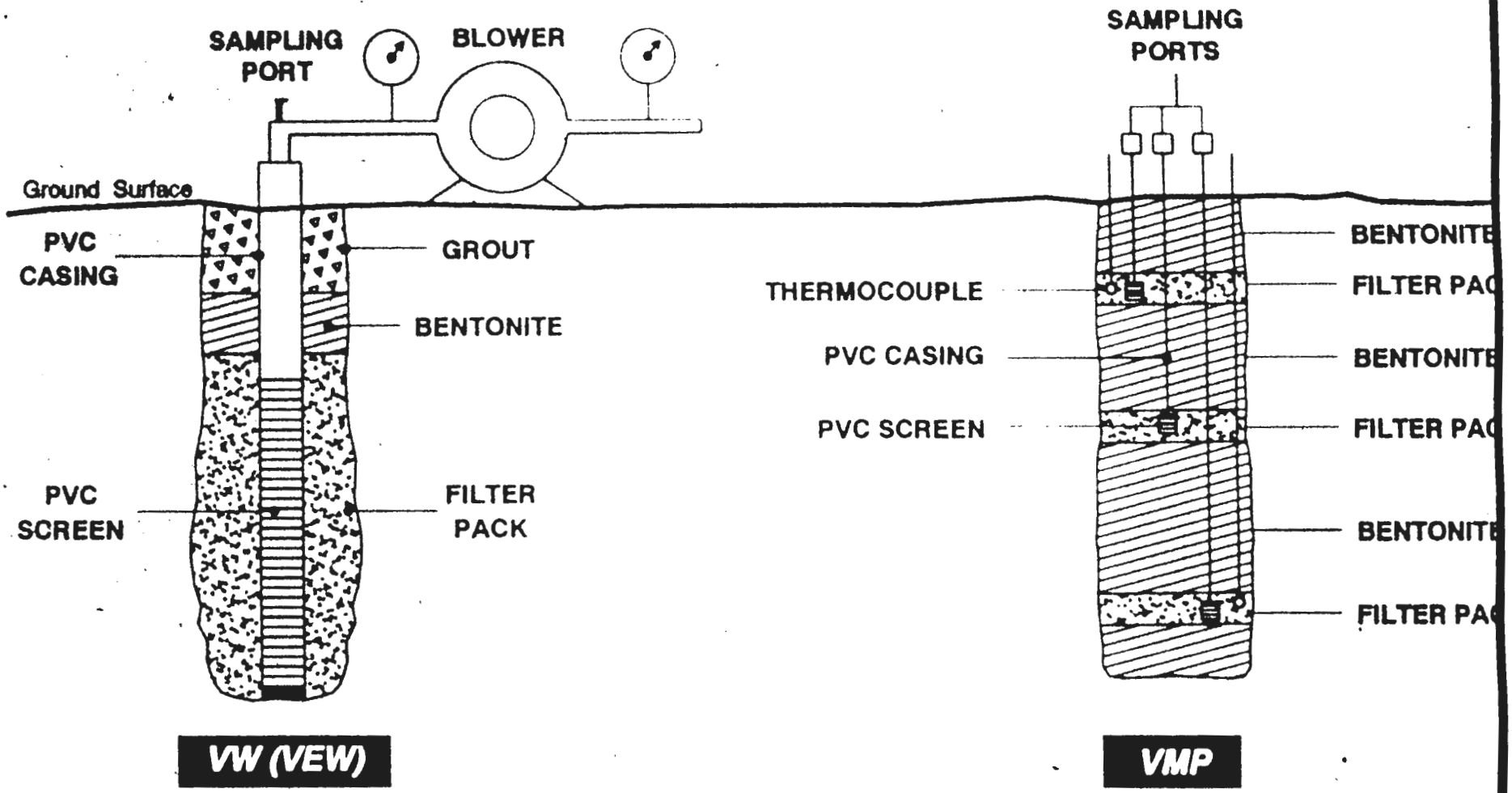
BIOVENTING PROCESS



RESULT OF VENTING PROCESS

- *O_2 STIMULATES NATURAL BIODEGRADATION OF CONTAMINANTS*
- *AIR MOVEMENT ENHANCES NATURAL VOLATILIZATION*
- *BIODEGRADATION RESULTS IN BREAKDOWN TO HARMLESS CONSTITUENTS (CO_2 AND H_2O)*
- *AIR INJECTION ELIMINATES OFF-GAS TREATMENT*

VW (VEW) AND VMP DESIGN



KEY FEATURE:

- *Screened throughout the contaminated interval*

KEY FEATURE:

- *Use of narrowly-screened intervals to sample soil gas from discrete interva*

Requirements for Bioventing

- *Established Natural Bacterial Population*
- *Adequate Carbon Source*
- *Available Nutrients*
- *Soil Moisture between 5% to 15%*
- *Sufficient Oxygen Supply*

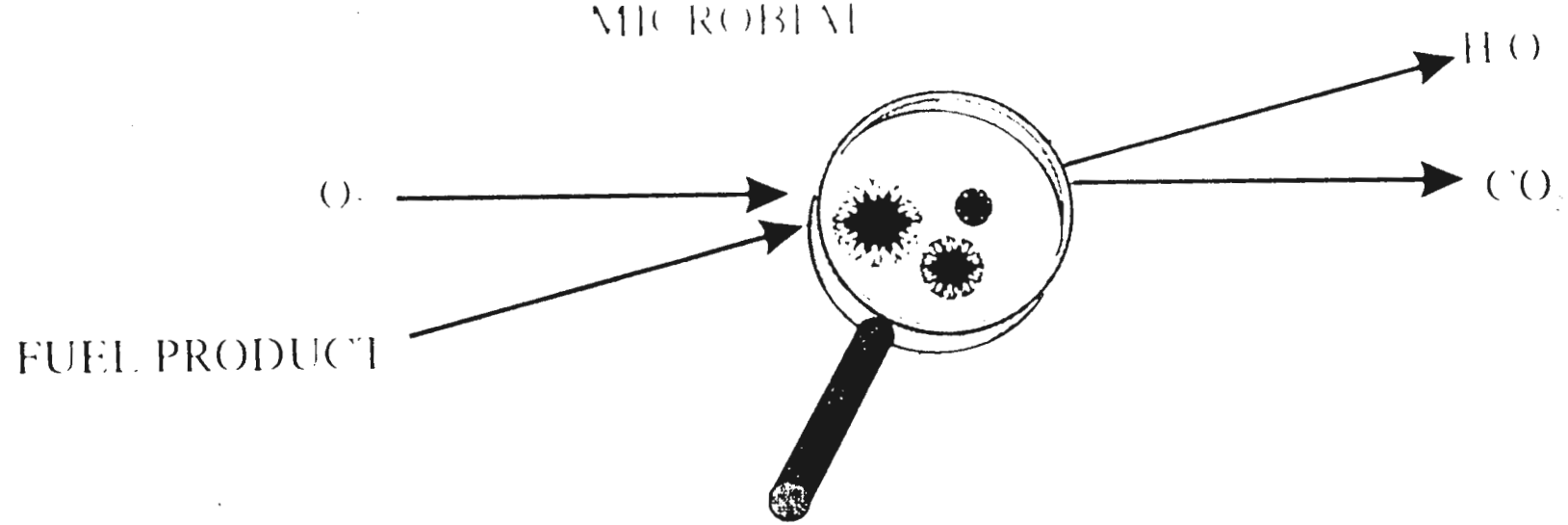
Bioventing Advantages & Disadvantages

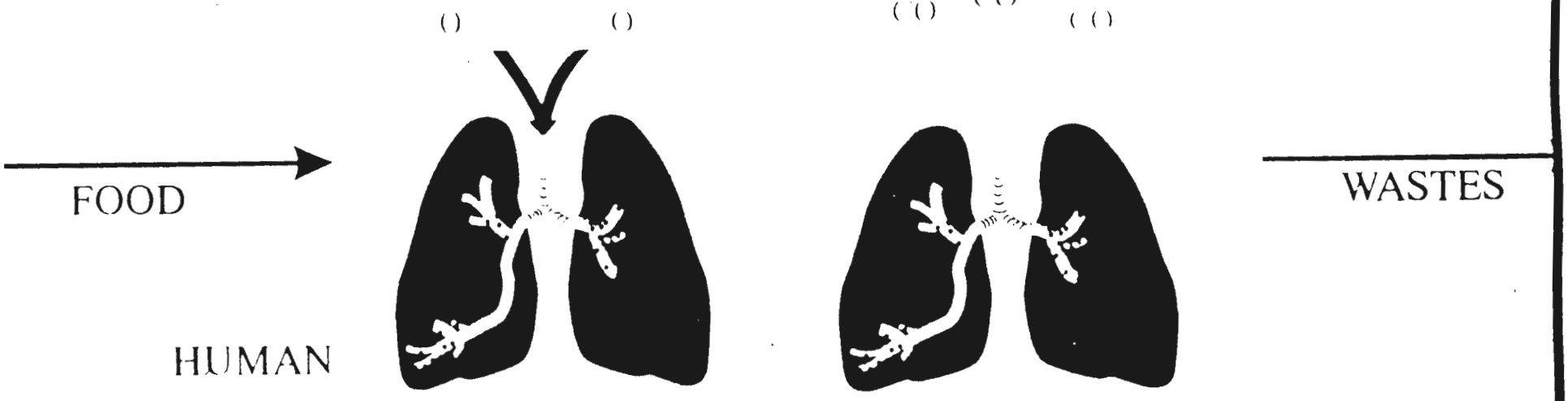
- *Advantages :*
  - *Simple and Effective Technology*
  - *Superior Oxygen Transport*
  - *Reduced Air Emissions*
  - *Cost Effective*
- *Disadvantages:*
  - *May not Reduce High MW Compounds*
  - *Increased Treatment Times*
  - *Temperature Sensitive*

What is Biodegradation ?

- *Biodegradation is a Biochemical Reaction*
- *Respiration is the Biochemical Reaction*
- *No Direct Test for Biodegradation*
- *Can Measure Gases Produced as End Products of Respiration*
- *Biodegradation Rates are Obtained from the In-situ Changes Observed*

'RESPIRATION AND BIODEGRADATION





How Can Biodegradation be Measured ?

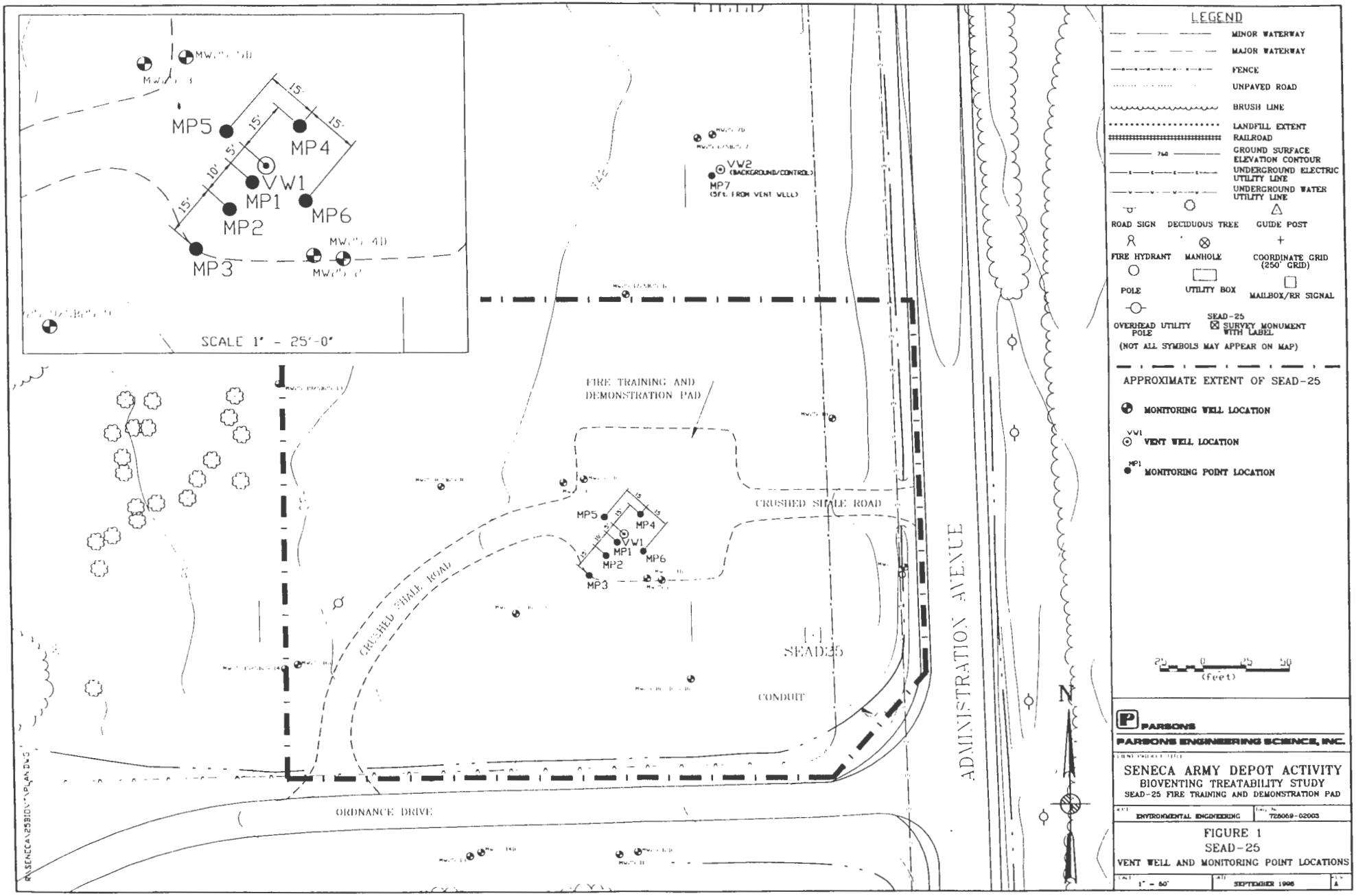
- *In-situ Respiration Test*
- *Saturate Soil with Air (Oxygen)*
- *Monitor the Changes of Gases*
  - *Oxygen (Loss due to Microbial Action)*
  - *Carbon Dioxide (Increase)*
- *Monitoring through Vapor Points*
- *Monitor Over Time to See Changes*
- *Monitor Conc. Changes of COCs in Soil*

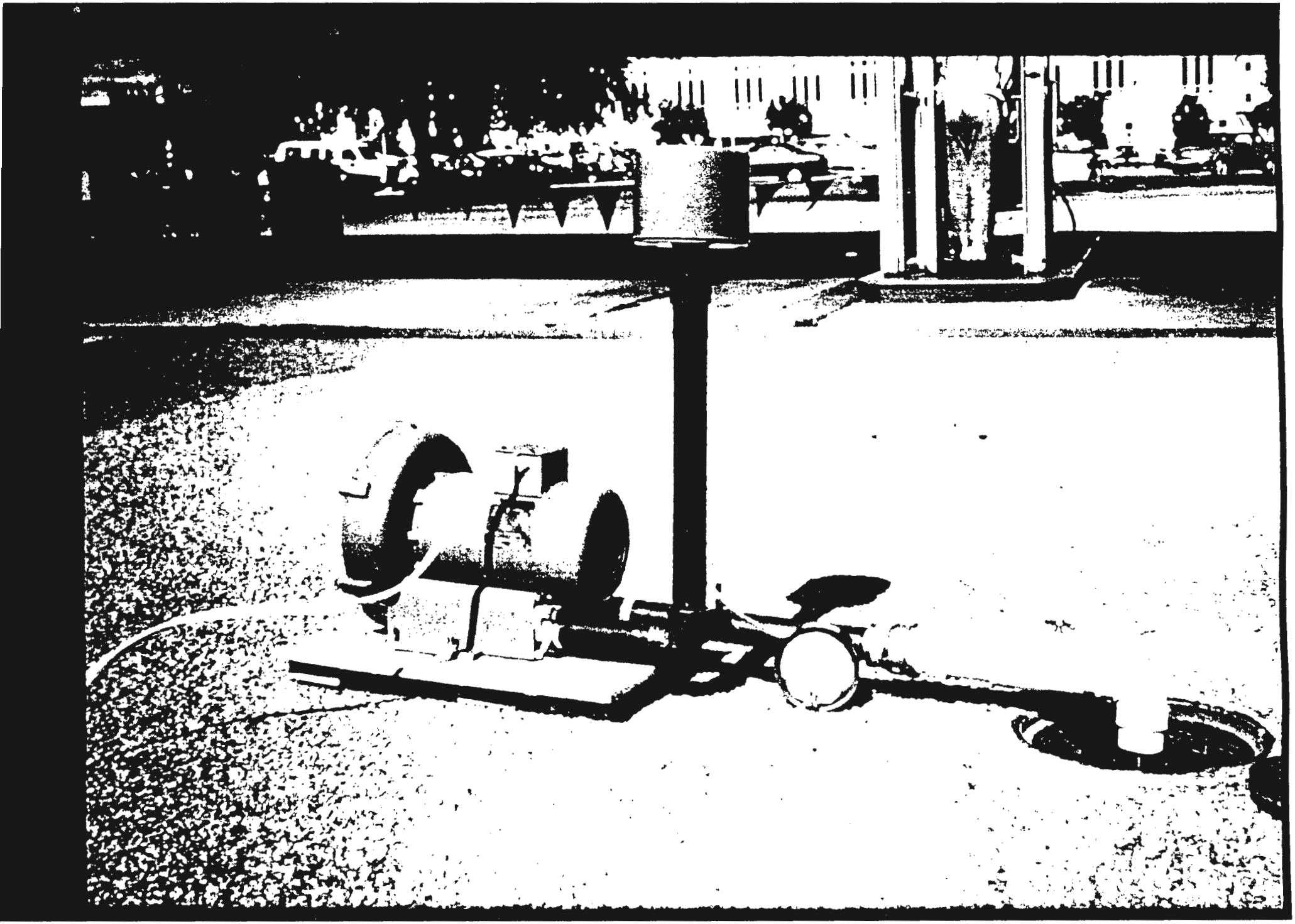
Goals of Bioventing Study at (SEAD-25)

- *Demonstrate Concentation Reductions*
- *Evaluate Biodegradation Rate*
- *Determine Effective Radius of Air Movement*
- *Obtain Engineering Design Data*
  - *Required Air Pressure and Flow*
  - *Equipment Sizing*

SEAD-25, Bioventing Study Scope of Work

- *Prepare Workplan*
- *Install Vent Wells and Vapor Monitoring Points*
- *Perform Air Permeability Test*
- *Perform Respiration Tests*
  - *Initial, 6 Month and 12 Month*
- *Prepare Report*

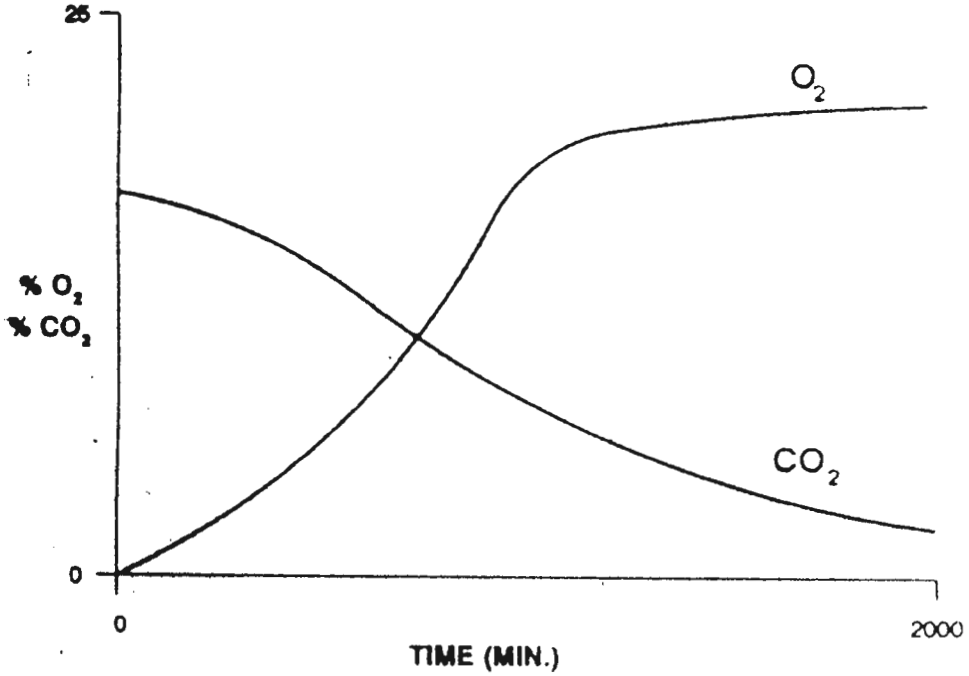

MP5
MP4
VW1
MP1
MP6
MP2
MP3
15'
10'
SCALE 1" - 25'-0"
VW2
(BACKGROUND/CONTROL)
MP7
(SPEL FROM VENT WELL)
FIRE TRAINING AND
DEMONSTRATION PAD
CRUSHED SHALE ROAD
SEAD-25
CONDUIT
ADMINISTRATION AVENUE
ORDNANCE DRIVE
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SEAD-25 SURVEY MONUMENT WITH LABEL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-25
MONITORING WELL LOCATION
VW1 VENT WELL LOCATION
MP1 MONITORING POINT LOCATION
25 0 25 50
(Feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
BIOVENTING TREATABILITY STUDY
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD
ENVIRONMENTAL ENGINEERING
726069-02003
FIGURE 1
SEAD-25
VENT WELL AND MONITORING POINT LOCATIONS
1" = 50'
SEPTEMBER 1998



NITORING
WELL

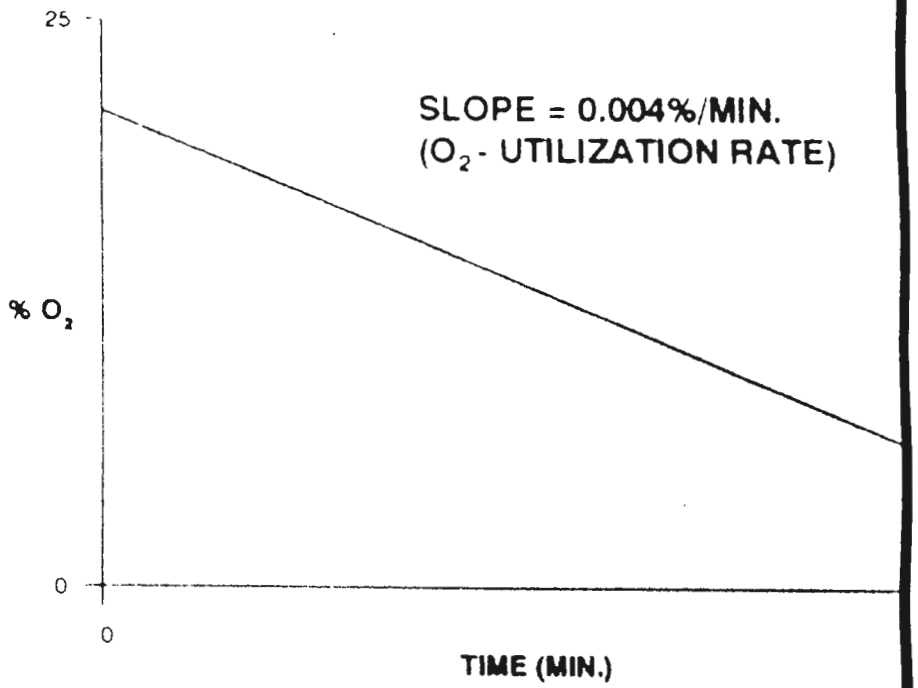
O_2 /CO_2 MONITORING

DURING VENTING

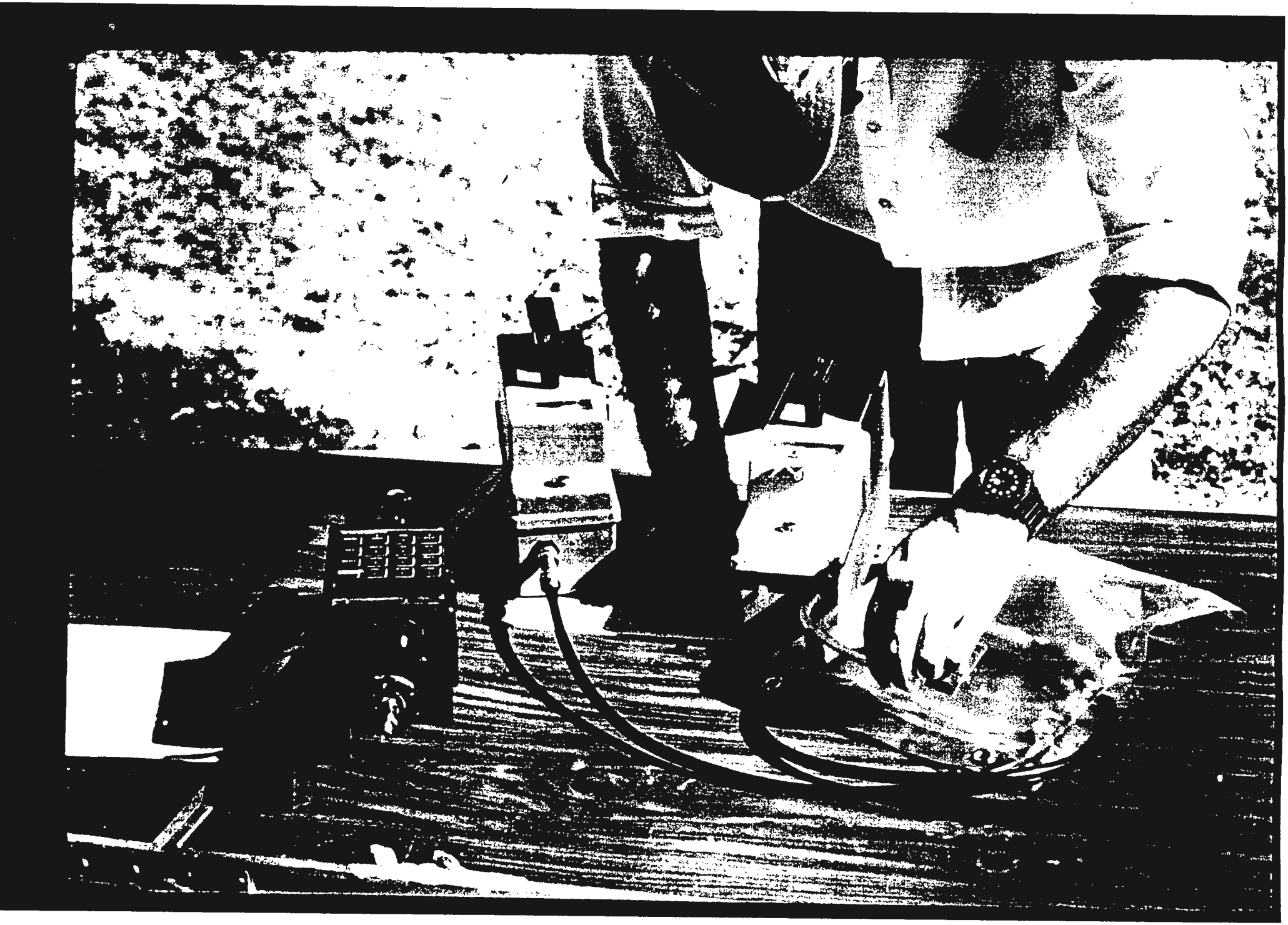


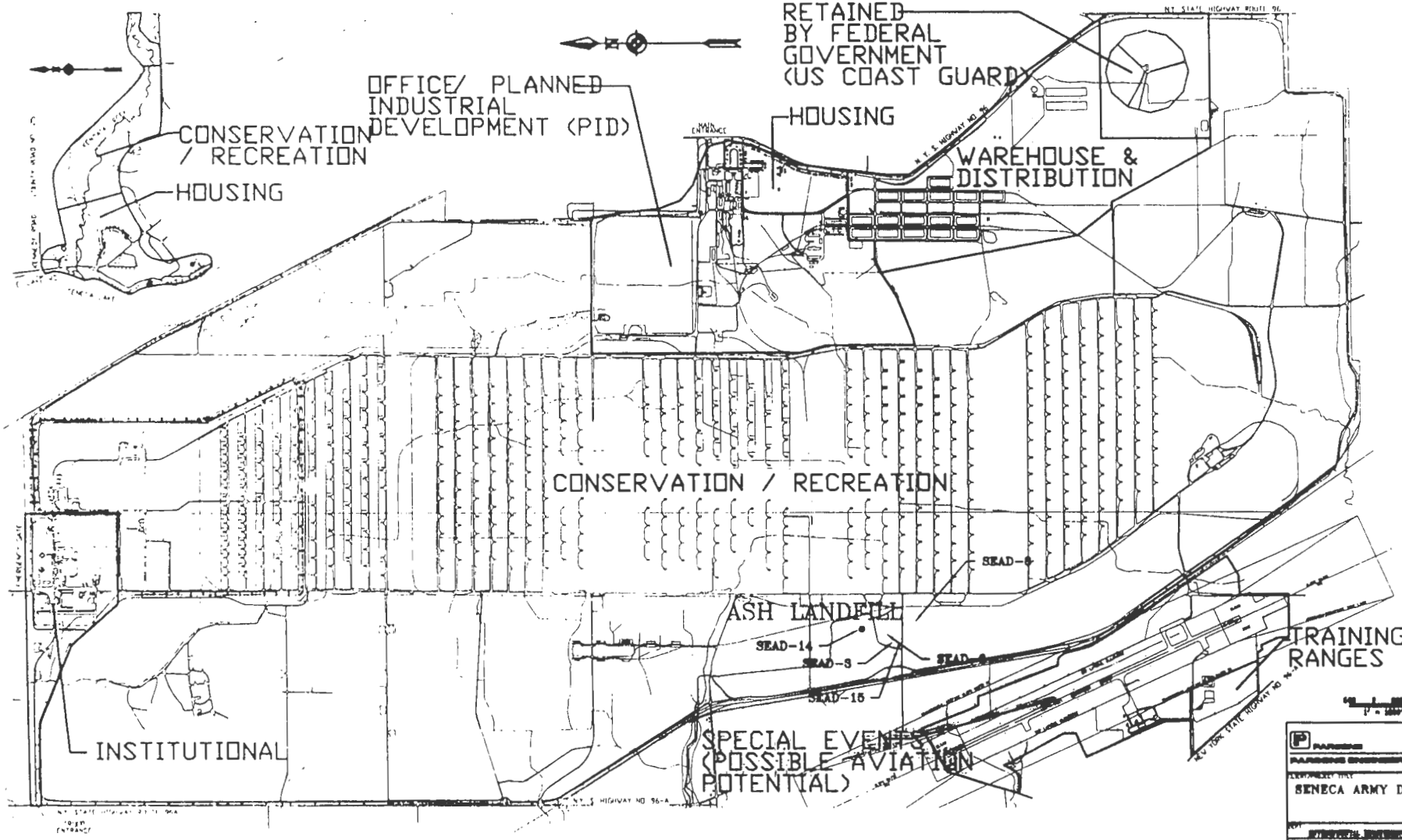
- MONITORED IN VMPs
- MONITORED IN GW MONITORING WELLS
- USE O_2 /CO_2 ANALYZER
- EXAMPLE IS IN CONTAMINATED SOIL

AFTER VENTING



- O_2 UTILIZED BY NATURAL BACTERIA IN SOIL
- SLOPE OF LINE IS THE O_2 - UTILIZATION RATE ("IN-SITU RESPIRATION RATE")





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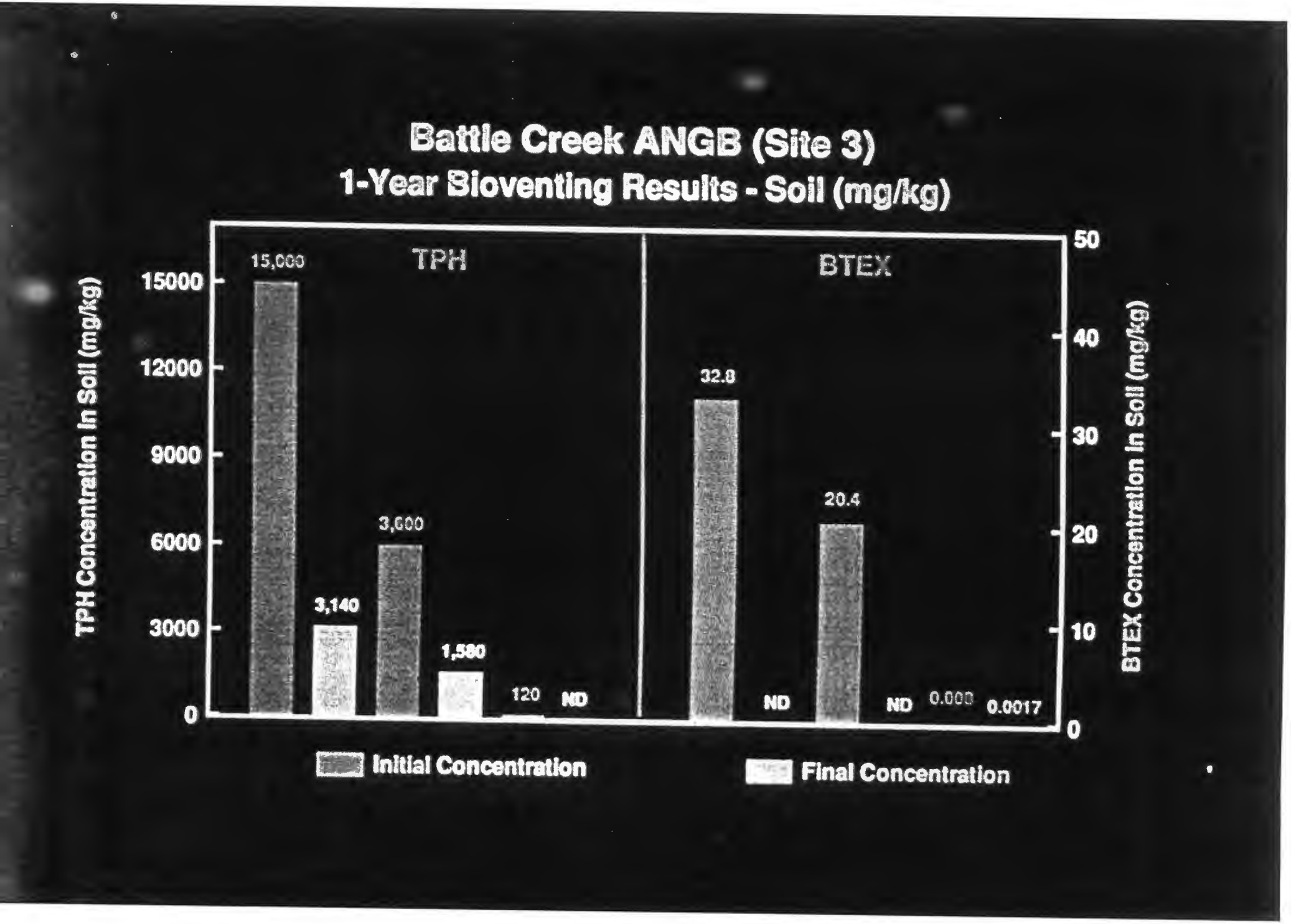
SENECA ARMY DEPOT ACTIVITY

ASH LANDFILL
SITE LOCATION AND
LAND USE

1" = 1800'

JANUARY 1997

ACAD\SENECA\LANDUSE\ASHDNLY.DWG


Battle Creek ANGB (Site 3)
1-Year Bioventing Results - Soil (mg/kg)
TPH
BTEX
TPH Concentration in Soil (mg/kg)
BTEX Concentration in Soil (mg/kg)
15000
12000
9000
6000
3000
0
50
40
30
20
10
0
15,000
3,140
3,600
1,580
120
ND
32.8
ND
20.4
ND
0.008
0.0017
Initial Concentration
Final Concentration

Summary of Site Conditions
Ash Landfill

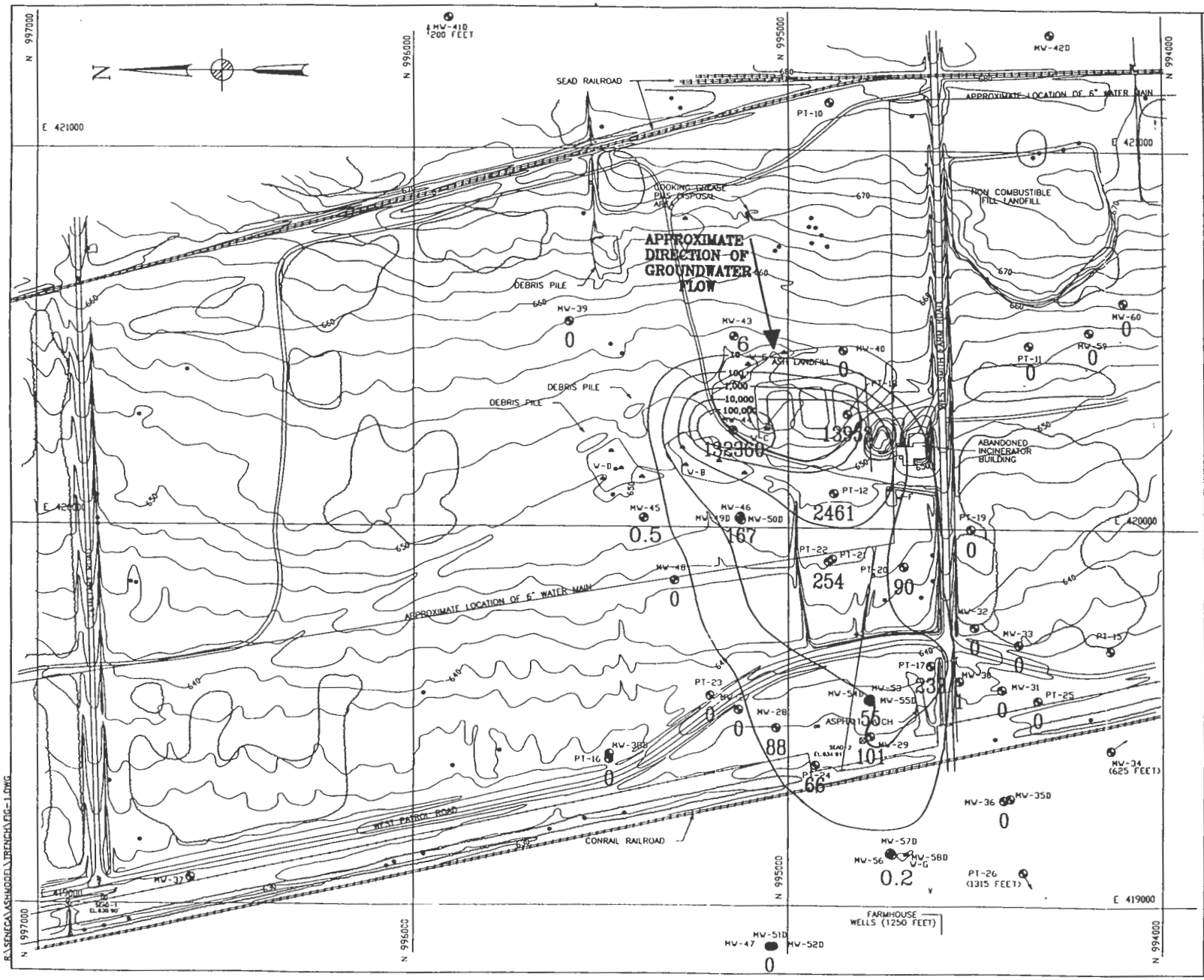
- *Former Trash Incinerator*
- *Within Conservation Land Use Area*
- *Constituents of Concern*
  - *Volatile Chlorinated Organics in Groundwater*
- *Source Area Eliminated in 1995 with an Interim Removal Action (IRM)*
- *Groundwater Plume at Depot Boundary*

Reactive Barrier Wall with Zero Valence Iron

- *In-situ Groundwater Remedial Technology*
- *Dissolved Chlorinated Organics are Chemically Destroyed*
- *Groundwater is Passed through Reactive Zones*
- *Emerging Technology*

EnviroMetal Process

- developed in 1989 at Institute for Groundwater Research, University of Waterloo
- various metals could remove VOCs from contaminated groundwater
- IRON
  - readily available
  - drinking water standards
  - relatively inexpensive



R:\SENECA\ASHMODEL\TRENCH\FIG-1.DWG

LEGEND:

- PAVED ROAD
- DIRT ROAD
- 650 — GROUND CONTOUR AND ELEVATION
- TREE
- V-B — WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SEAD-1 EL.630.90' — SURVEY MONUMENT
- PT-22 / MW-37 — MONITORING WELL AND DESIGNATION
- —10,000— GROUNDWATER ISOCONTOUR (ug/L)

NOTE:
THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCREENED IN THE TILL/WEATHERED SHALE AQUIFER. THE VOC DATA ARE FROM SAMPLES COLLECTED IN JULY 1993.

125 0 125 250
1" = 250'

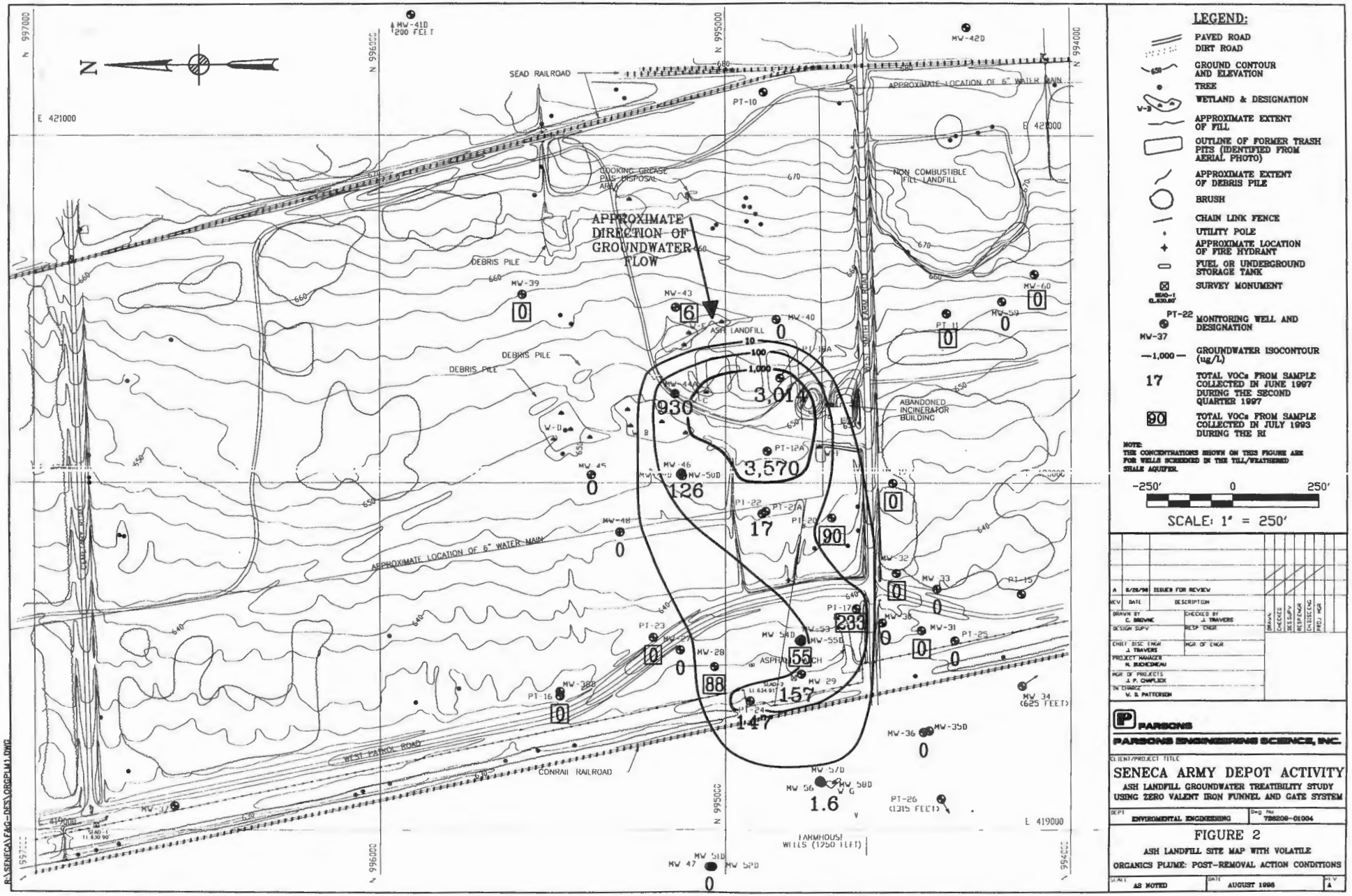
PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

DEPT.	Dwg No.
ENVIRONMENTAL ENGINEERING	728209-01002

FIGURE 1
ASH LANDFIL SITE MAP WITH VOLATILE ORGANICS PLUME: PRE-REMOVAL ACTION CONDITION

SCALE	DATE	REV
AS NOTED	DECEMBER 1997	0



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- MONITORING WELL AND DESIGNATION
- GROUNDWATER ISOCONTOUR (ug/L)
- TOTAL VOCs FROM SAMPLE COLLECTED IN JUNE 1997 DURING THE SECOND QUARTER 1997
- TOTAL VOCs FROM SAMPLE COLLECTED IN JULY 1993 DURING THE RI

NOTE:
THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCREENED IN THE TILL/WEATHERED SHALE AQUIFER.

-250′ 0 250′

SCALE: 1′ = 250′

REV	DATE	DESCRIPTION
A	8/28/98	ISSUED FOR REVIEW

DRAWN BY C. BROWNE | CHECKED BY J. TRAVERS
DESIGN SUPV | RESP. ENGR.
CHIEF DISC. ENGR J. TRAVERS | MGR. OF ENGR.
PROJECT MANAGER M. BUCKSBAUM
MGR OF PROJECTS J. P. CHAPLICK
IN CHARGE W. B. PATTERSON

DRAWN | CHECKED | DES.SUPV | RESP.ENGR | CH.DISC.ENG | PROJ. MGR

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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER TREATIBILITY STUDY
USING ZERO VALENT IRON FUNNEL AND GATE SYSTEM

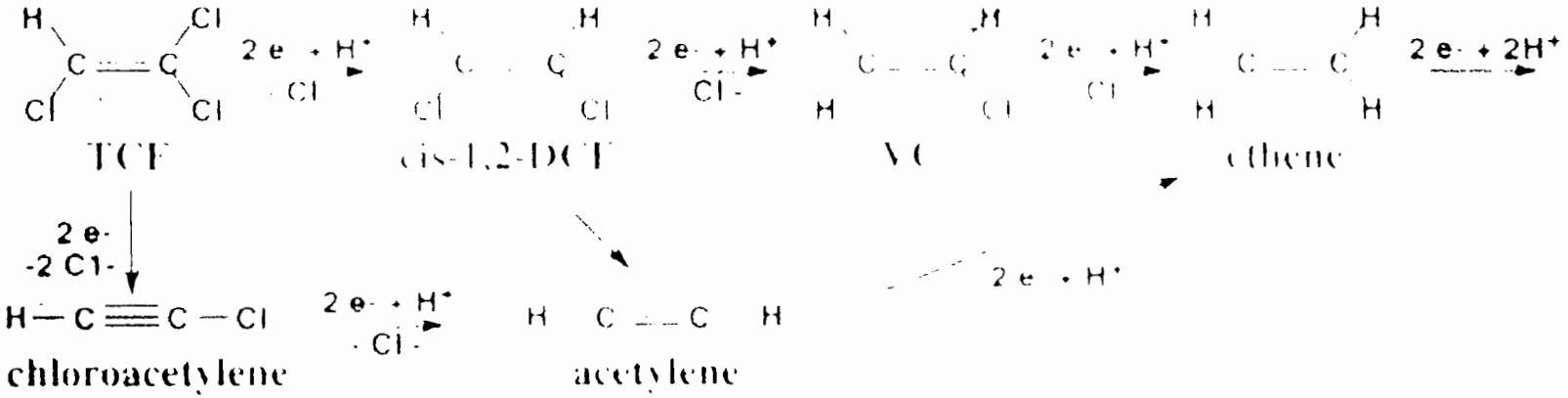
DEPT: ENVIRONMENTAL ENGINEERING | Dwg No: 726209-01004

FIGURE 2

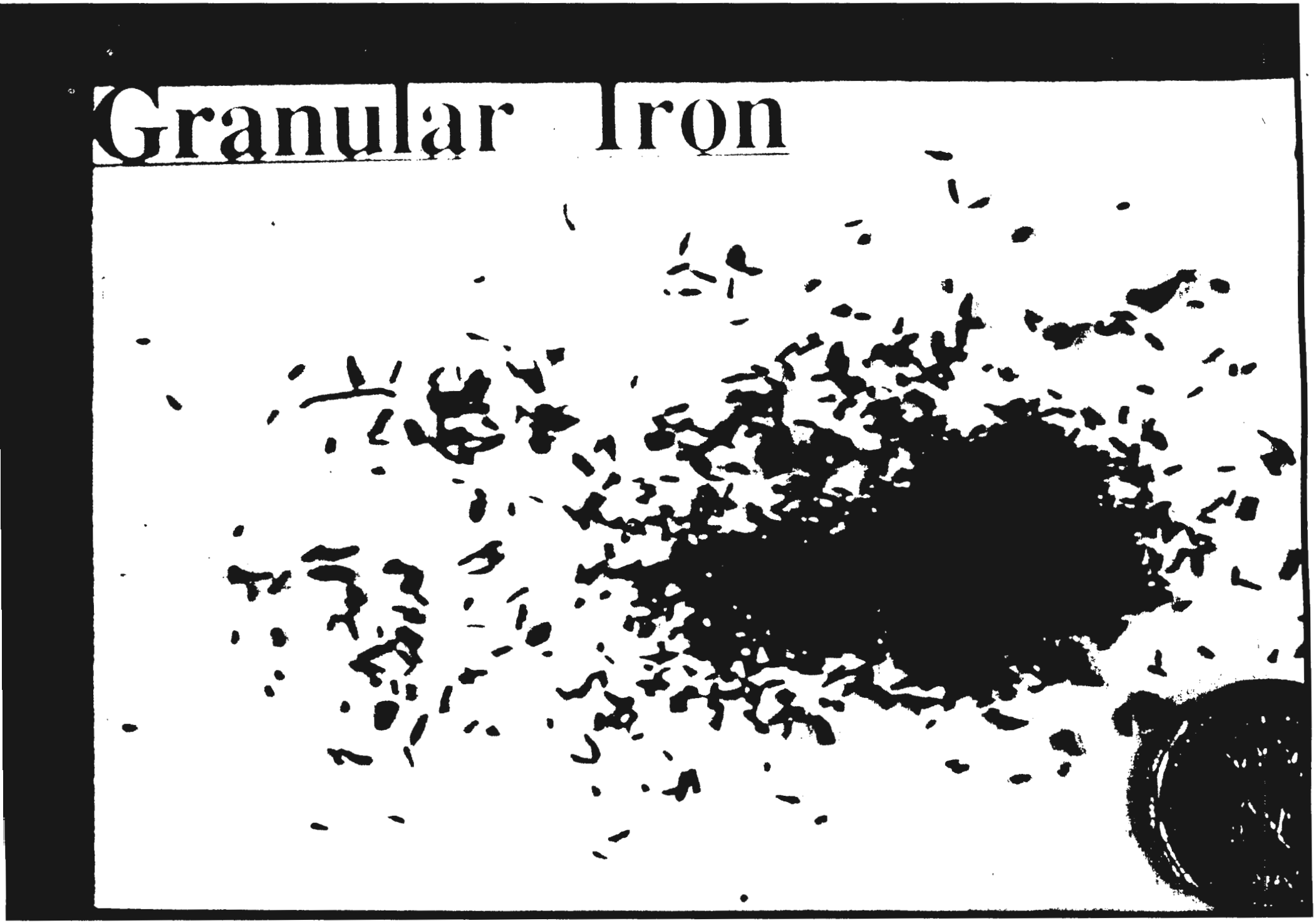
ASH LANDFILL SITE MAP WITH VOLATILE ORGANICS PLUME: POST-REMOVAL ACTION CONDITIONS

SCALE: AS NOTED | DATE: AUGUST 1998 | REV: A

EnviroMetal Process



Granular Iron



Pilot-Scale Installation, New York

Site History:

- installed May 1995
- monitored for six months through EPA SITE program (June - December 1995)
- in-situ velocity measurements Sept 1996, June 1997
- most recent VOC sampling June 1997
- cores obtained June 1997
- full-scale system installed December 1997

Success In Meeting Regulatory Criteria
In-Situ Installation, New York (May 1995)

VOC	Influent Conc. (ppb)	Downgradient Conc. (ppb)
TCE	32 - 330	< 1 - 1.6
cDCE	98 - 550	< 1 - 7.6
VC	8.1 - 79	< .5 - 1.2

Goals for Rective Barrier Wall Study at Ash Landfill

- *Demonstrate Concentation Reductions*
- *Evaluate Degradation Rate*
- *Determine Groundwater Flow Regime*
- *Obtain Engineering Design Data*
  - *Reactive Iron Volume*
  - *Hydraulic Charaterisitics of Barrier*

Reactive Barrier Wall Design Issues

- *Groundwater Fluctuations*
- *Continuous vs Funnel and Gate*
- *Thickness of Reactive Iron*
- *Ability to Adequately Seal and Divert Groundwater*
- *Monitoring Frequency and Location*

Reactive Barrier Wall Continuous vs Funnel and Gate

- *Groundwater Mounding*
- *Thickness of Reactive Iron*
- *Reactive Iron Changeouts*
- *Flexibility to Adapt to Alternative Technologies*
- *Monitoring Frequency and Location*

Ash Landfill, Reactive Barrier Wall Study, Scope of Work

- *Prepare Specifications*
- *Select Contractors*
  - *Enviro metals (Reactive Zero Valent Iron)*
  - *Trench Installation Contractor*
- *Install Reactive Wall*
- *Perform Groundwater Monitoring*
  - *6 Month and 12 Month*
- *Prepare Report*

LEGEND:

- PAVED ROAD / DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- GROUNDWATER ELEVATION CONTOUR
- TREATMENT WALL GATE AND NUMBER
- PARTICLE TRACK

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SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

ENVIRONMENTAL ENGINEERING | Dwg. No. 728209-01002

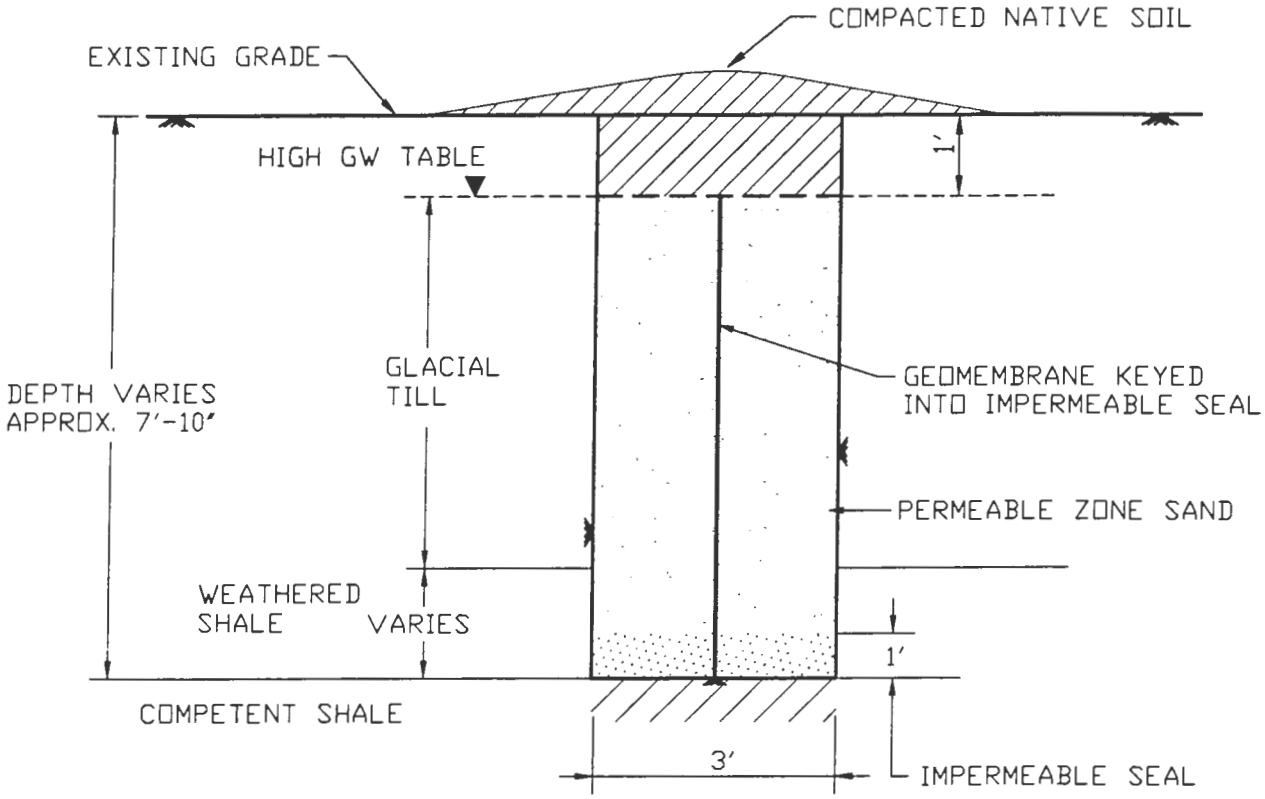
FIGURE 10
CAPTURE ZONE FOR FUNNEL AND FOUR GATE SYSTEM

SCALE: AS NOTED | DATE: DECEMBER 1997 | REV 0

P:\SENECA\ASH\MODEL\TRENCH.AI\FIG-10.DWG

NOTE(S):

1. EXCAVATION FOR THE TRENCH IS TO BE MADE TO THE TOP OF COMPETENT SHALE. THE TARGET ELEVATION OF COMPETENT SHALE IS 625 FEET. (SEE APPENDIX FOR BORING LOGS)



TYPICAL SECTION

REV	DATE	DESCRIPTION
B	9/16/98	ISSUED FOR BID
A	8/20/98	ISSUED FOR REVIEW

DRAWN BY: C. DROWNE | CHECKED BY: J. TRAVERS
DESIGN SUPV. | RESP. ENGR.
CHIEF DISC. ENGR.: J. TRAVERS | MGR OF ENGR.
PROJECT MANAGER: M. DUCHESNEAU
MGR. OF PROJECTS: J. P. CHAPLICK
IN CHARGE: W. D. PATTERSON

DRAWN | CHECKED | DES.SUPV. | RESP.ENGR. | CH.DISC.ENG. | PROJ. MGR.

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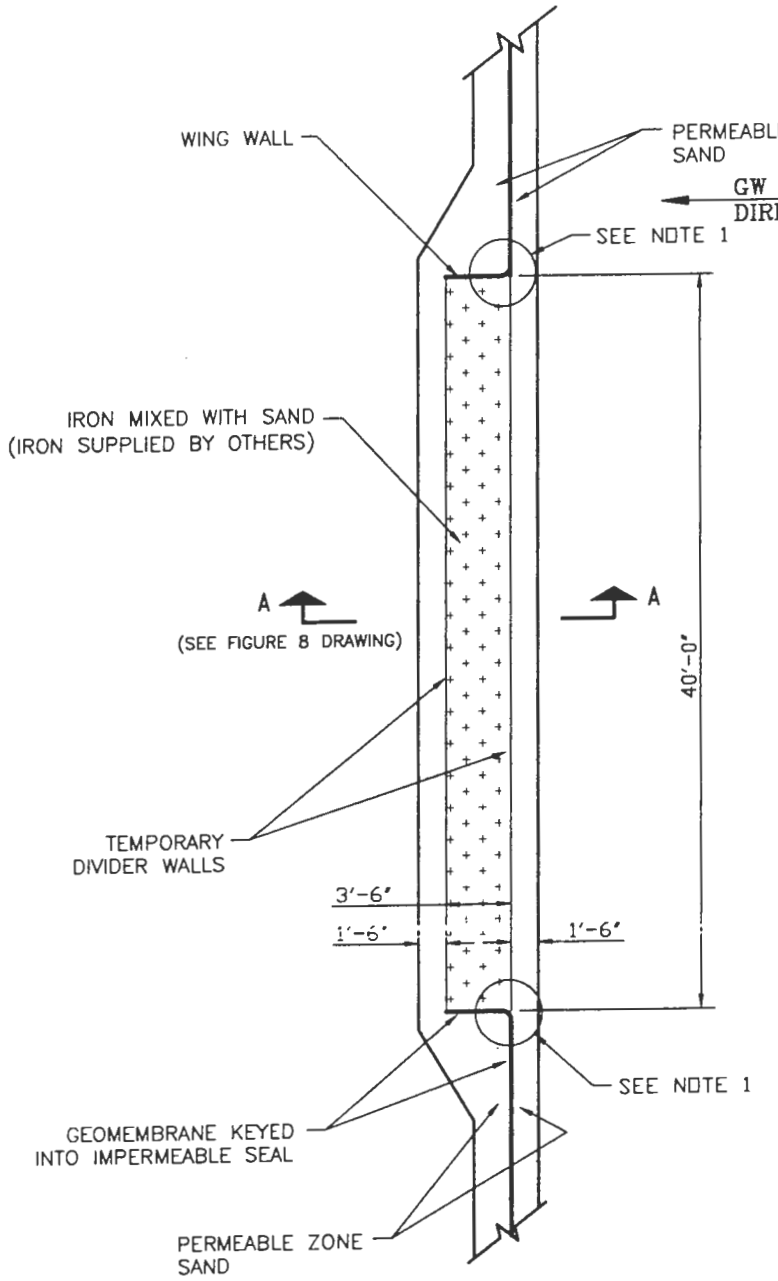
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER TREATABILITY STUDY
USING ZERO VALENT IRON FUNNEL AND GATE SYSTEM

DEPT: ENVIRONMENTAL ENGINEERING | Dwg No: 726209-01004

FIGURE 6
CROSS SECTION
FUNNEL SYSTEM

SCALE: NOT TO SCALE | DATE: SEPTEMBER 1998 | REV: B

R:\SENECA\FAG-DES\FNLSYS.DWG



PLAN VIEW

NOTE(S):

1. REFER TO SPECIFICATION 02372, ARTICLE 3.05, "CONSTRUCTING WING WALL CORNERS", FOR DETAILS.

REV	DATE	DESCRIPTION
B	9/16/98	ISSUED FOR BID
A	8/20/98	ISSUED FOR REVIEW

DRAWN BY C. DROWNE	CHECKED BY J. TRAVERS
DESIGN SUPV	RESP ENGR
CHIEF DISC ENGR J. TRAVERS	MGR OF ENGR
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IN CHARGE W. D. PATTERSON	

DRAWN | CHECKED | DES SUPV | RESP ENGR | CH DISC ENG | PROJ MGR

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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY

ASH LANDFILL GROUNDWATER TRAETABILITY STUDY USING ZERO LANDFILL VALENT IRON FUNNEL AND GATE SYSTEM

DEPT: ENVIRONMENTAL ENGINEERING | Dwg No: 726209-01004

FIGURE 7
REACTIVE GATE

SCALE: NOT TO SCALE | DATE: SEPTEMBER 1998 | REV: B