

MINUTES
RESTORATION ADVISORY BOARD
March 20, 2001 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair; Julio Vazquez, Environmental Protection Agency; Alicia Thorne, NYS Department of Environmental Conservation; Marsden Chen, DEC;

Community RAB Members Present:

Karen Tackett, Community Co-Chair; Brian Dombrowski, Patricia Jones, Industrial Development Agency; Bob McCann, Ken Riemer, Dave Schneider, Fred Swain, Henry Van Ness

Community RAB Members Not Present:

Jan Schneider (excused), Dan Geraghty, NYS Department of Health, Frank Ives (excused), Dave Wagner (excused), Jeffrey Beall (excused), Russell Miller, Frankie Young-Long

Environmental Support Personnel and Guests Present:

Michael Duchesneau, Parsons Engineering; James Lowerre, Parsons; Todd Heino, Parsons; Kevin Healy, Corps of Engineers, Hunstville; Randy Battaglia, U.S. Army Corps of Engineers, New York District; Thomas Enroth, U.S. Army COE, New York District; Brad Wright, OSC; Nancy Williamson, Recording Secretary

2. Mr. Absolom called the meeting to order at 7:05 p.m. All attendees were asked to introduce themselves. Request for changes to the November and January minutes elicited no changes. Mr. Absolom and Ms. Tackett signed the minutes into the record.

3. The agenda for the evening consisted of a presentation by Mr. James Lowerre, Parsons Engineering, who discussed findings of all the ordnance sites at Seneca Army Depot, and specifically noted that

recommendations would be made at a future meeting. The handout is enclosed.

Mr. Lowerre began his presentation by defining Ordnance and Explosives (OE) and its subset Unexploded Ordnance (UXO). UXO is of higher concern because it is primed, fused or armed and being more sensitive could cause harm.

Scope and background were explained. Mr. Duchesneau of Parsons pointed out the areas of investigation on an oversized map as Mr. Lowerre explained each area. A map was shown for proposed future land use.

Mr. Lowerre summarized the approach taken to investigate for OE and UXO. A grid method was used and geophysical surveys identified anomalies; dig sheets were prepared for likely targets, excavation was done, and items found were identified as False Positive, Non-OE Scrap, OE Scrap, OE or UXO. The Army's most stringent standards were applied to the acreage designated - 25% of large areas were examined, 100% of small areas using the grid system. (When actual remediation is done, 100% examination will apply to all areas.)

Mr. Lowerre went through the sites and indicated various features of each, percentage investigated and findings. He then explained risk assessment, clean-up alternatives, and proposed recommendations. (Please refer to handout.)

There will always be a potential for OE exposure. Risk Assessment involves identifying stakeholders and educating them on potential risks. Institutional controls will be implemented to limit future use of the sites and to minimize OE exposure.

During a discussion of institutional controls, deeds were brought up as a type of land use restriction. There were questions about restrictions being written into abstracts. Mr. Absolom explained that restrictions would go into the deed, itself. The

abstract doesn't have enforcement, the deed has. When asked if the Army would be responsible for an abstract and a deed, Mr. Absolom said the Army would prepare a quit claim deed.

Cleanup alternatives encompass the following: 1) No DOD action indicated, 2) institutional controls, 3) clearance of OE to depth of six inches, 4) clearance to depth of instrument detection, 5) excavation and sifting, or some combination of these.

Charts were presented showing costs for remediating sites for unrestricted vs. restricted land use based on the recommended cleanup alternatives, however, no recommendations have been presented.

There would be a proposed recurring review involving all stakeholders that could happen every two to three years to check on effectiveness of proposed cleanup alternatives, maintenance of controls, and support to landowner. (Reviews would occur sooner if OE or UXO were encountered after cleanup.) During the review, the Army would send out a contractor and government representative to check the areas for change.

There followed a Discussion/Q&A Session on the presentation.

Question: What is the timeframe for cleanup of SEAD 45?

A: Two to three years if funding is there.

Comment: Romulus is currently creating zoning laws, but since the depot is also in the town of Varick it was suggested that Varick be contacted

Mr. Duchesneau indicated Varick had been contacted but that they would follow up.

Comment: Deed restrictions are good but need to be spelled out. Once someone buys land, there is no control on the owner's activity. So we have concerns about areas with ordnance in them.

Comment: Surprise was indicated with the finding of white phosphorous rounds and concern expressed over the proper disposal.

Comment: Mr. Duchesneau remarked that the whole idea is to come up with approaches to each area, spend dollars wisely and where it makes the most sense. Most sites will have institutional controls and deed restrictions.

Comment: Most areas are disposal activity sites and not impact ranges for target shooting which explains the surface debris.

Comment: The Open Burning Ground cleanup is for recreation/conservation use, not for building a house with a basement. So it doesn't make sense to clean to ten feet and spend the money to do it. There must be land use controls. If, in the future, there is a need to dig deeper, there are ways that an operation could be handled with ordnance people overseeing any construction.

Mr. Duchesneau said that controls involve education and other processes. There will be an independent group (the Department of Defense Explosive Safety Board or DDESB) reviewing recommendations. And the group will not let land transfer without strong assurance that restrictions will be followed.

Comment: An archive search report was done searching all local and national archives of what the Army did here, and interviewing retirees. Fieldwork included archival discoveries.

Mr. Absolom stated that the Army would recommend a proposed action on each site. When ready, the Army will be back to present recommendations. The Army will want stakeholders' opinions on proposals after which it may or may not revise the recommendations depending on the rationale. The Army alternatives should be developed over the next two months.

Mr. Vazquez stated that the Army is using the CERCLA process to address UXO. The EPA is not involved in

UXO issues. The DDESB is the watchdog on these issues but uses CERCLA steps.

4. Mr. Absolom then opened the floor to general discussion by asking what items the RAB wanted brought up in future.

Comment: What is happening at the Ash Landfill and the wall treating the TCE contamination?

A: We have comments back on the proposed plan. The plan should be finalized in the next two months. We also have a report on the wall for the first year effort.

Q: Mr. Duchesneau asked Mr. Riemer about future coordination for land use.

A: Mr. Riemer stated that it would be discussed Thursday, March 22, by the town board and should be decided by early summer.

Q: Mr. Duchesneau asked Ms. Jones if she was tracking it.

A: Ms. Jones indicated she was.

Mr. Absolom asked if the board wished to meet every other month as suggested in the January meeting. The Board agreed that every other month was still desirable.

5. The next meeting will be May 15, 2001, at 7 p.m. in the Romulus Town Offices, Willard, NY.

Mr. Absolom thanked everyone for coming and adjourned the meeting at approximately 8:40 p.m.

Respectfully submitted,

Nancy Williamson

NANCY WILLIAMSON
Recording Secretary

Enclosure

APPROVED AS SUBMITTED:

Stephen M. Absolom

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

Karen Tackett

Karen Tackett
Community Co-Chair

Presentation to the RAB
March 20, 2001
Parsons Engineering Science, Inc.

Summary of Investigations
and Alternatives Assessment
for
Ordnance and Explosives (OE)

Introduction

- **James Lowerre, OE Task Order Manager**
- **Michael Duchesneau P.E., Seneca Program Manager**

Seneca Army Depot Activity (SEDA) EE/CA

Parsons Engineering Science Agenda

1. Introduction	2. Project Objectives
3. Technical Work	4. Risk Assessment
5. Preliminary Design	6. Alternative Design
7. Final Design	8. Summary/Conclusion

Definition of OE

- **Ordnance and Explosives (OE)**
 - "Ammunition, ammunition components, chemical or biological warfare materiel or explosives that have been abandoned, expelled from demolition pits or burning pads, lost, discharged, buried or fired."
 - or
 - "Explosive Soil refers to mixtures of explosives in soil, sand, clay, or other solid media at concentrations such that the mixture itself is explosive."

Definition of UXO

• Unexploded Ordnance (UXO)

"Military items that have been primed, fuzed, armed or otherwise prepared for action and have been *lied, dropped, launched, projected or placed* in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design or any other cause."

Implications of Definition

- UXO is a Subset of OE
- Both OE and UXO are of Concern and Targets for Investigation
- UXO has Higher Potential to Cause Harm since UXO items are "primed, fuzed, armed or otherwise prepared for action"

Scope of Work

- Authorized as Task Order 52 of Contract DACA87-95-D-0018 between Corps of Engineers, Huntsville and Parsons

Scope of Work

- Characterize Nature, Location and Concentration of Ordnance
- Describe OE Related Problems
- Identify Risk Management Alternatives

Archive Search Report

- Completed in 1998 by St. Louis District
- Assessed Depot for Presence of OE Residuals
- Identified 12 Areas for OE Investigation
- Basis of Scope of Work for Task Order 52

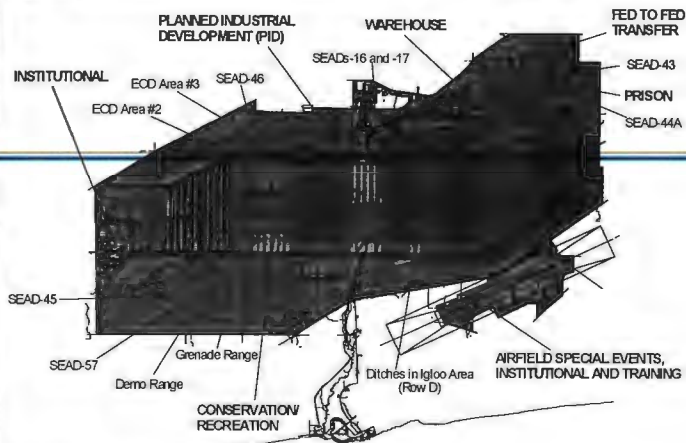
Areas Of Investigation

- Indian Creek
 - Unmarked Burial Area
 - Igloo Area, Ditches in D Row
 - Demolition Range
 - EOD Area #3
 - EOD Area #2
 - SEAD 44A
 - QA Function Test Area
- SEAD 46
 - 3.5" Rocket Range
 - Grenade Range
 - SEAD 57
 - Former EOD Range
 - SEAD 45
 - Open Detonation Area

Location Map of Sites



Proposed Future Land Use



Summary of Approach

- Establish Number of Grids Required for Coverage
- Layout Grids
- Conduct EM-61 and Magnetometer Geophysical Survey
- Identify Geophysical Anomalies
- Prepare "Dig Sheets" for Likely Targets
- Reacquire Geophysical Anomalies
- Excavate and Identify Items as False Positive, Non-OE Scrap, OE Scrap, OE or UXO

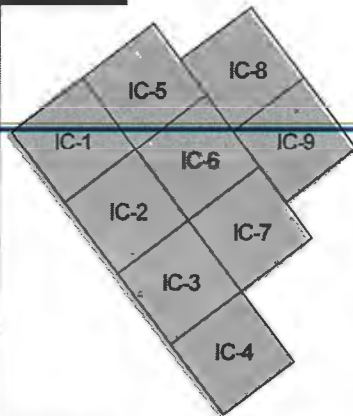
Summary of Results from Individual Sites

- Geophysical Survey Results
- OE Items Recovered
- UXO Items Recovered

Summary of Site Conditions Areas with No OE or UXO

- Indian Creek "Burial Area"
 - Removed Ordnance Disposal Area
 - Within Conservation Area
 - Not a CERCLA site
- SEAD 53: Igloo Area
 - Two ditches within the Igloo Area
 - Surveyed due to Anomalies Identified during the ASR Visit
 - Not a CERCLA Site
- Former Demolition Range
 - Identified in ASR as Demo. Range
 - Within Conservation Area
 - Not a CERCLA Site

Indian Creek Rumored Burial Ground Geophysical Map

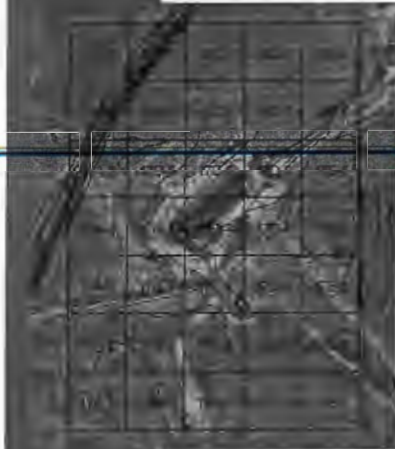


- Entire site investigated with geophysical equipment
- All geophysical anomalies investigated
- No UXO or OE encountered

Summary of Site Condition

- **SEAD 17: Deactivation Furnace**
 - Industrial Reuse Area (Not Transferred)
 - CERCLA Site
 - RCRA Permitted Unit (To be Closed)
 - Demilitarized Small Arms

SEAD 17 - OE Recovered



- 8.1 acres total
- 2.3 acres investigated with geophysics
- 93% of geophysical anomalies investigated
- OE Recovered:
 - 2 - 20mm rounds and one fuze
- No UXO Found

Summary of Site Characterization

- EOD Area #3
 - Adjacent to SEAD-46; 3.5" Rocket Range
 - Rumored EOD Area
 - Within Conservation Area
 - Not a CERCLA Site

EOD Area #3 - OE Recovered



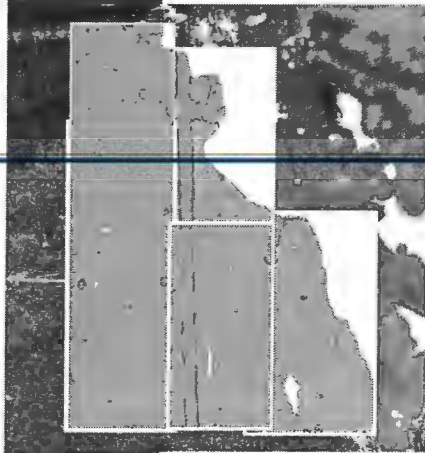
- 5 acre total
- 80% investigated with geophysics
- All geophysical anomalies investigated
- OE Recovered:
 - rifle grenades (2), slap flare, fuze lighter
- NO UXO items encountered

Summary of Site Condition

- EOD Area #2
 - Rumored EOD Area
 - Within Conservation Area
 - Not a CERCLA Site

EOD Area #2 - EM-61

Geophysical Data



- 5 acre total
- 46% investigated with geophysics
- All geophysical anomalies investigated
- Small targets are locations of metal scrap
- Large targets are UXO/OE locations

EOD Area #2 - UXO/OE II



- OE Recovered:
 - slap flares (3)
- UXO Recovered:
 - fuze with booster

Summary of Site Conditions

- **SEAD 46: 3.5" Rocket Range**
 - Within Conservation Area
 - CERCLA Site

SEAD 46 - UXO Recovered

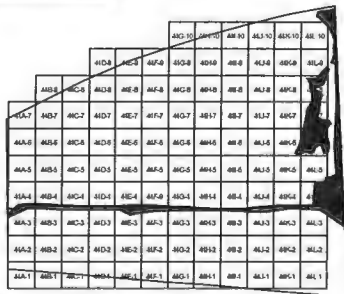


- 40 acres total
- + ● 43.1% investigated with geophysics
- + ● 1155 geophysical anomalies investigated
- + ● OE Recovered (100+ Items):
 - + - 40mm rifle-fired, chemical smoke, and hand grenades; various fuzes; slap flares
- + ● UXO Recovered
 - + - M83 fragmentation bomb, slap flares (2), fuzes (3), chemical smoke charges (4)

Summary of Site Conditions

- **SEAD 44A: Function Test Area**
 - Part of QA Laboratory Complex
 - Firing Range for 40mm Rifle-Fired Grenades
 - included in Prison Transfer RCRA SWMU
 - CERCLA Site

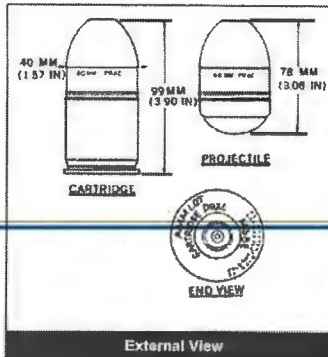
SEAD 44A – UXO Recovery



- Confirmation Sampling
- 25 acres total
- 55% investigated
- 1783 geophysical anomalies investigated
- OE Recovered:
 - 40mm rifle-fired grenades (225+), CS grenades, and slap flares
- UXO Recovered
 - 40mm rifle-fired grenades w/ 6g spotting charge (4), slap flare

Munition Information: Description

U.S. CARTRIDGE, 40-MM, PRACTICE, M382 & M407A1



Country of Origin United States

Diameter/Width 40.00 mm

Length 78.00 mm

Weight 227.00 g

Explosive Type RDX

Net Explosive Weight 6.00 g

 Do not transport.

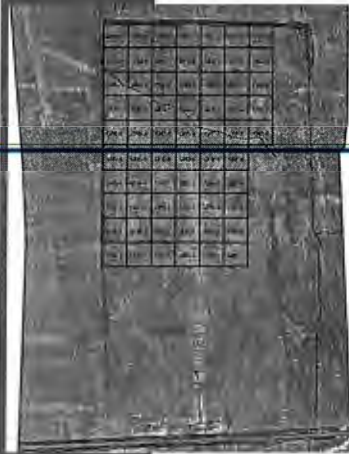
 Disposal by detonation.

These are practice rounds with smoke spotting charges. The fuzes are point-detonating (PD) and graze-sensitive. The M551 is setback and centrifugally armed; the M552 is centrifugally armed. Figure shows the appearance, dimensions, and general arrangement of the cartridges. The M382 uses the M552 fuze; the M407A1 uses the M551 fuze. The M382 cartridge case and projectile are chemically finished to obtain an olive-drab color. The ogive is gray. Identification markings are yellow. The M407A1 cartridge case is olive drab; the projectile is blue. Markings are white. The cartridge cases and projectiles are aluminum.

Summary of Site Condition

- **Grenade Range**
 - Practice Range
 - 40 mm Rifle-Fired Grenades
 - 35mm Subcaliber LAW Rockets
- Within Conservation Area**
 - Not a CERCLA Site

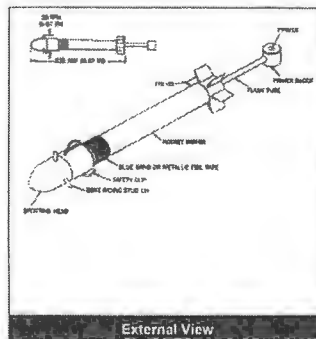
Grenade Range – UXO Remediation



- 25 acres total
 - 15 in target area (grids) 100% investigated
 - 10 in meandering path 20% investigated
- 834 geophysical anomalies investigated (69% of total)
- OE Recovered (~600 items):
 - 40mm rifle-fired grenades, M73 35mm LAW rockets
- UXO Recovered:
 - 40mm rifle-fired grenade w/ 6g spotting charge, M73 35mm LAW rockets (105)

Munition Information: Description

U.S. ROCKET, 35-MM, SUBCALIBER, PRACTICE, M73



Country of Origin United States

Diameter/Width 35.00 mm

Length 225.00 mm

Weight 145.00 g

Explosive Type Propellant, Rocket, Double-Base

Net Explosive Weight 10.00 g

Special Instructions required for transportation.

Disposal by detonation.

This is a subcaliber practice rocket incorporating an integral, impact-inertia fuze. It is used for training and simulates the rocket for the light antitank weapon (LAW) system. The rocket is fired from a practice M190 launcher (a modified M72A1 LAW launcher). The figure shows the appearance and dimensions of the M73 practice rocket and M190 launcher. The spotting head and fins are painted black; the remainder of the rocket is olive drab. A blue band appears on the forward end of the rocket motor. On later production rockets, the spotting head is painted blue and the fins are painted brown. The rocket motor section is olive drab with white markings. A metallic foil covered tape is attached around the forward end of the rocket motor for weight adjustment. The spotting head and fins are plastic; flash tube and primer block are a white semitranslucent plastic. The rocket motor is steel. The rocket weighs 145 grams (5.1 ounces) before firing and approximately 136 grams (4.8 ounces) after firing.

Summary of Site Conditions

- **SEAD 57: EOD Area**
 - EOD Training and Demolition Operations
 - Within Conservation Area
 - CERCLA Site

SEAD 57 – UXO Recovered



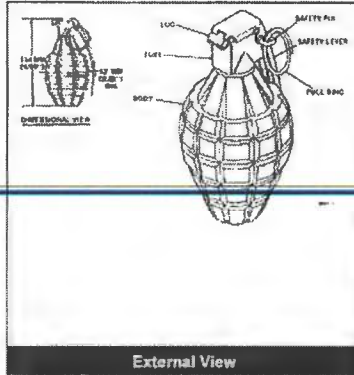
- 60 acres total
- 23.3% investigated with geophysics
- 2117 geophysical anomalies investigated (63% of total)
- OE Recovered:
 - 20mm, 30mm, and 105mm projectiles; 2.36" rockets (5); fuzes (3); slap flares (2), CS grenade, bomblet trainer
- UXO Recovered
 - 20mm projectiles (2)
 - MK II Grenade (similar)

Previous

Next

Munition Information: Description

U.S. GRENADE, HAND, FRAG, MK 2



Country of Origin United States

Diameter/Width 57.00 mm

Length 114.00 mm

Weight 589.68 g

Explosive Type TNT, Flaked

Net Explosive Weight 56.70 g

 Do not transport.

 Disposal by detonation.

The Mk 2 is a fragmentation (frag), antipersonnel, delay-detonating hand grenade which is commonly referred to as "pineapple" because of its shape and external serration. The Mk 2 grenade is painted olive drab, with a yellow band around the top of the fuze well. The grenade bodies are heavily serrated cast iron.

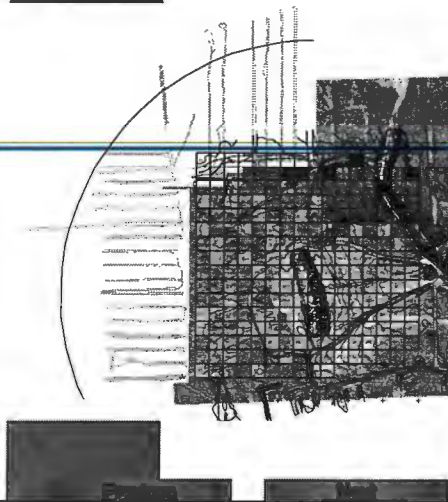
Summary of Site Conditions

- **SEAD 45 : Open Detonation Area**
 - Used to Demilitarize Projectiles
 - Adjacent to Open Burning Area
 - Within Conservation Area
 - Adjacent to Kids Peace
 - RCRA Permitted Unit
 - CERCLA Site

PREVIOUS

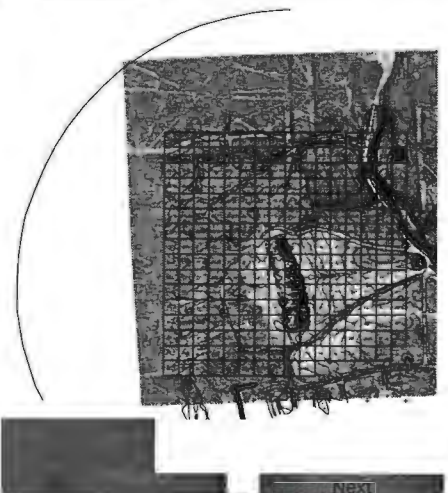
NEXT

SEAD 45 - Open Detonation



- 234 acres total (1800' radius from center of berm)
- 24.2% of 60-acre gridded section, 2.0% of remainder investigated
- Area saturated with buried metal
- Only 20 anomalies investigated in majority of grids
- 2345 anomalies investigated

SEAD-45 - UXO Recovery



- 800+ OE Items recovered
- 70+ UXO Items recovered
- OE and UXO types
 - 20mm to 155mm projectiles (WP and HE)
 - 81mm mortar rounds
 - Rockets, 2.36" and 3.5"
 - Various Fuzes
 - Grenades (fragmentation, 40mm rifle-fired, CS)
 - Flares

Next

Institutional Analysis

- Always Potential for OE Exposure
- Key Component of Overall OE Strategy
- Analysis Includes:
 - Identification of and Education of Stakeholders to Potential Risks
 - Implementation of Institutional Controls to Limit Future Uses to Minimize OE Exposure

Identification of Stakeholders

- Identifies persons or groups that have the ability to impact future activities at the Depot
 - US Army – controls Depot at present, responsible for any OE discovered in the future and recurring reviews of selected institutional controls and effectiveness of cleanup action
 - Industrial Development Authority (IDA) – Finds future landowners for Depot property
 - Towns of Romulus and Ovid – Town bylaws provide for deed restrictions on all former SEDA land based on environmental concerns
 - EPA/NYSDEC – Oversees cleanup of hazardous waste sites

Institutional Controls

- **Possible Institutional Controls for Reducing OE Exposure**

- Printed media

- Classroom Education

- Visual Media

- Exhibits/Displays

- Web Site

- Ad Hoc Committee

- Access Controls

- Land Use Restrictions

- Permitting

Cleanup Alternatives Considered

- **Alternative 1: No DOD Action Indicated (NDAI)**
- **Alternative 2: Institutional Controls**
- **Alternative 3: Clearance of OE to Depth of 6 Inches**
- **Alternative 4: Clearance to Depth of Instrument Detection (Geophysical Mapping)**
- **Alternative 5: Excavation and Sifting**

Alternative 1

- **No DOD Action Indicated**

No OE related item found onsite therefore no hazard exists

Previous

Alternative 2

- **Institutional Controls**

- Fencing
- Signage
- Notice (during property transfer)
- Printed Media
- Classroom Education
- Visual Media
- Exhibits/Display
- Web Site
- Ad Hoc Committee

Alternative 3:

- **Clearance of OE to Depth of 6 Inches**

- UXO contractor performs visual inspection of surface

- Geophysical instrumentation used to aid sweep team

- Any items visible on the surface will be cleared

- Targets removed or destroyed immediately

- Area is clear when sweep team is complete

- Used on areas of low OE density and shallow OE occurrence

Alternative 4:

- **Clearance to Depth of Instrument Detection**

- Surface sweep

- Establish survey coordinate system

- Collect geophysical data across area

- Process data to detect anomalies

- Reacquire geophysical anomalies

- Investigate targets

- Perform 10% QC to verify removal action

Alternative 5

- **Removal of OE to Depth by means of Excavation and Mechanical Sorting**

- Excavate soil saturated with buried metal
- Sort OE items out of excavated soil using a mechanical sifter
- Perform geophysical investigation over excavated area to verify removal of all OE
- Stabilize removed soils
- Restore area

Comparison of Alternatives

- Initial screening to drop consideration of alternatives that are unnecessary at certain sites (ex. excavation and sorting at AOIs with few anomalies)
- Remaining alternatives at each area compared to each other as far as effectiveness, implementability, and cost

Alternative Comparison 11

- **Effectiveness**
 - Protection of Public Safety and Environment
 - Compliance with ARARs
 - Long-term Effectiveness
 - Short-term Effectiveness
- **Implementability**
 - Technical Feasibility
 - Compliance with ARARs
 - Long-term Effectiveness
 - Short-term Effectiveness
- **Cost**
 - Estimated lifetime cost

Previous

Next

Effectiveness

SEAD-45 (Open Detonation Area)
Response Action Effectiveness

ALTERNATIVE	Protection of Public Safety & Environment	Compliance with ARARs	Long-Term Effectiveness	Short-Term Effectiveness	SCORE	RANK
Institutional Controls	4	1	4	1	10	3
Clearance to 6"	3	1	3	2	9	2
Clearance to Depth w/ geophysical mapping	2	1	2	3	8	1
Clearance of OE to Depth by means of Mechanical Sorting	1	2	1	4	8	1

Previous

Next

Implementability

SEAD-45 (Open Detonation Area)
Response Action Implementability

Alternative	Technical Feasibility	Administrative Feasibility	Availability of Services and Materials	Stakeholder Acceptance	SCORE	RANK
Institutional Controls	1	1	1	8	11	4
Clearance to 6"	2	1	1	6	10	3
Clearance to Depth w/ geophysical mapping	3	1	1	4	9	2
Clearance of OE to Depth by means of Mechanical Sorting	4	1	1	2	8	1

Note: Ranking from best to worst; best=1, worst=4

Implementability, Effectiveness

Cost Summary

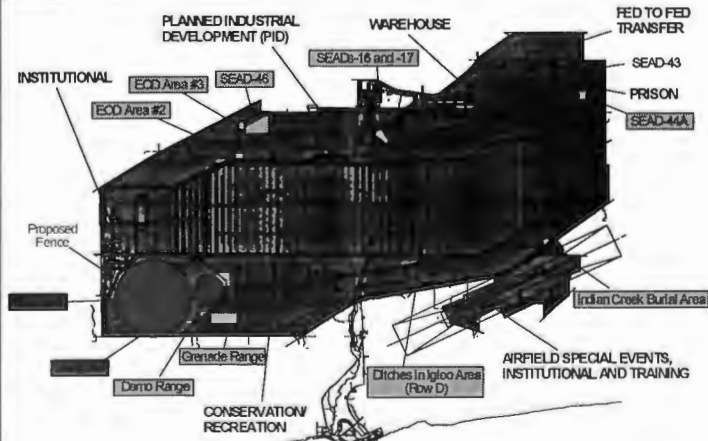
SEAD-45 (Open Detonation Area)
Cost Comparison

Alternative	Effectiveness	Implementability	Cost
Institutional Controls	3	4	\$1,070,539
Clearance to 6"	2	3	\$2,682,705
Clearance to Depth w/ geophysical mapping	1	2	\$5,078,536
Clearance of OE to Depth by means of Mechanical Sorting	1	1	\$23,007,064

Costs for Unrestricted Land Use

COSTS FOR UNRESTRICTED LAND USE				
AOI	Recommended Alternative	Cost - Initial	Cost - Life Cycle (25 yrs)	Total Cost
Indian Creek Burial Area	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
SEAD-53 (Igloo Area)	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
Demo Range	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
SEAD-17 (Deactivation Furnace)	Alternative 3 - Clearance to 6"	\$48,783.00		\$48,783.00
EOD Area #3	Alternative 4 - Clearance to Depth	\$40,632.00		\$40,632.00
EOD Area #2	Alternative 3 - Clearance to 6"	\$16,580.00		\$16,580.00
SEAD-44A (Function Test Range)	Alternative 5 - Excavate and Sort	\$2,632,650.00		\$2,632,650.00
SEAD-46 (3.5" Rocket Range)	Alternative 4 - Clearance to Depth	\$788,153.00		\$788,153.00
Grenade Range	Alternative 4 - Clearance to Depth	\$595,045.00		\$595,045.00
SEAD-57 (Former EOD Range)	Alternative 5 - Excavate and Sort	\$1,754,984.00		\$1,754,984.00
SEAD-45 (Open Detonation Area)	Alternative 5 - Excavate and Sort	\$23,007,064.00		\$23,007,064.00
Depot	Alternative 2 - Institutional Controls	\$89,250.00	\$296,630.00	\$385,880.00
Recuming Review			\$113,944.00	\$113,944.00
	TOTAL COST:	\$28,973,121.00	\$410,574.00	\$29,383,695.00

Restricted Land Use Risk Map



Costs for Restricted Land Use

COSTS FOR RESTRICTED LAND USE				
AOI	Recommended Alternative	Cost - Initial	Cost - Life Cycle (25 yrs)	Total
Indian Creek Bunal Area	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
SEAD-53 (Iglou Area)	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
Demo Range	Alternative 2 - Institutional Controls (Depot Wide)			\$0.00
SEAD-17 (Deactivation Furnace)	Alternative 3 - Clearance to 6"	\$48,783.00		\$48,783.00
EOD Area #3	Alternative 4 - Clearance to Depth	\$40,632.00		\$40,632.00
EOD Area #2	Alternative 3 - Clearance to 6"	\$16,560.00		\$16,560.00
SEAD-44A (Function Test Range)	Alternative 5 - Excavate and Sort	\$2,632,650.00		\$2,632,650.00
SEAD-46 (3.5" Rocket Range)	Alternative 4 - Clearance to Depth	\$788,153.00		\$788,153.00
Grenade Range	Alternative 4 - Clearance to Depth	\$595,045.00		\$595,045.00
SEAD-57 (Former EOD Range)	Alternative 2 - Institutional Controls	\$138,831.00	\$717,600.00	\$856,431.00
SEAD-45 (Open Detonation Area)	Alternative 2 - Institutional Controls	Same IC as SEAD-57	Same IC as SEAD-57	\$0.00
Depot	Alternative 2 - Institutional Controls	\$89,250.00	\$296,630.00	\$385,880.00
Recurring Review			\$113,944.00	\$113,944.00
	TOTAL COST:	\$4,349,904.00	1,128,174.00	\$5,478,078.00

Proposed Recurring Review

- **Every Two Years**
 - To check on effectiveness of proposed cleanup alternatives
 - To maintain effectiveness of Institutional Controls
 - Provide landowner with support
- **Sooner if OE or UXO is encountered after cleanup**

SUMMARY

- CHARACTERIZATION LARGELY COMPLETE
- OPTIONS BEING DEVELOPED
- QUESTIONS AND ANSWERS

MINUTES
RESTORATION ADVISORY BOARD
May 15, 2001 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair; Julio Vazquez, Environmental Protection Agency; Alicia Thorne, NYS Department of Environmental Conservation;

Community RAB Members Present:

Karen Tackett, Community Co-Chair; Brian Dombrowski, Patricia Jones, Industrial Development Agency; Bob McCann, Dave Schneider, Fred Swain, Dan Geraghty, NYS Department of Health, Dave Wagner, Russell Miller,

Community RAB Members Not Present:

Jan Schneider (excused), Frank Ives, (excused), Jeffrey Beall (excused), Frankie Young-Long

Environmental Support Personnel and Guests Present:

Michael Duchesneau, Parsons Engineering; Kevin Healy, Corps of Engineers, Hunstville; MAJ David Sheets, COE, Huntsville; Randy Battaglia, U.S. Army Corps of Engineers, New York District; Thomas Enroth, U.S. Army COE, New York District; Keith Hoddinot, US Army Environmental Hygiene Agency; Nancy Williamson, Recording Secretary

2. Mr. Absolom called the meeting to order at 7:05 p.m. All attendees were asked to introduce themselves. Request for changes to the March minutes elicited no changes. Mr. Absolom and Ms. Tackett signed the minutes into the record.

Mr. Absolom announced that Mr. Kenneth Riemer had regretfully resigned the board. Mr. Absolom remarked that he was a good member who provided valuable input and that he will be missed.

3. The agenda for the evening consisted of a presentation by Mr. Michael Duchesneau, Parsons Engineering, who discussed Planned Removal Actions at Various Sites. The handout is enclosed.

Mr. Duchesneau indicated that the planned removal actions over the next months were not reviewed or agreed to by the State or EPA, but is an Army led situation. There have been a lot of studies, but not a lot of sites have been finished.

Thus far there have been only a few remedial actions taken. One ROD was signed - OB Grounds Remedial Action, 1996 Ash Landfill Removal Action, and 1999 Ash Landfill Reactive Wall Study.

There are over 100 SWMUs and suspected sites. Of these, only 24 are No Further Action SWMUs. Twenty-five are sites that have significant issues that need to be addressed. The remainder pose minimal threat.

Section 11 of the Federal Facility Agreement (FFA) allows the Army to conduct removal actions to eliminate threat. Further, removal to landfills would be a cost effective tool to eliminate sites. Another reason to consider removal actions is the increased presence of reusers within the Depot.

Mr. Duchesneau then discussed each site: the five VOC/TPH removal action sites (SEAD-38, -39, -40, -41 and -60) the four metals removal action sites (SEAD-24, -50, -54, and -67). He showed a map of each area, indicated the findings of soil samples, chemicals and metals found, and amount of soil to be removed.

He concluded that removal actions could achieve closure of several sites, show progress in clean-up, avoid further studies, eliminate threat to reuser, and promote transfer of property encouraging reuse of the depot.

Question: Can we do the LTTD?

A: Not for metals. For other contaminants, yes, but it's not cost effective.

Comment: It's so cheap to go the landfills.

Q: Can everything go to the landfill?

A: Everything except asbestos which must be treated separately.

Q: What is the process for getting sites written off formally?

A: Each site has a closure report and the regulatory community would need to accept it.

Q: Can the sites be lumped in No Further Action?

A: That is to be determined.

Comment: Landfills are looking for daily cover and would be happy to get our soil so they don't have to buy cover.

Q: How deep would soil be removed.

A: Approximately one foot.

Q: What kind of delays would there be? How long would lawyers keep it hung up?

S. Absolom: I can't talk for lawyers, but it should not be an issue. We have the money and want to do it. We could spend more money studying a site and find removal unnecessary. However, it would be cheaper and faster just to do it.

4. Mr. Absolom then opened the floor to general discussion.

Comment: Suggest we have another meeting on land use controls--perhaps a lawyer versed in real estate laws.

Q: What effect would early transfer have on the RAB process?

A: No effect on the RAB process. Early transfer allows the Army to transfer land to IDA before cleanup with the approval of the Governor and the regional administrator. The Army commits to form a schedule and budget up front, *i.e.* a consent order.

Q: Would IDA plans be used to determine the type cleanup? IDA has already identified large areas such as the ammo area - the conservation area.

A: Actually, cleanup has higher standards for flora and fauna than for children.

Q: Can we have another meeting with Glenn Cooke to find out what's happening?

S. Absolom: I'll explain the process. IDA gets several interested potential reusers. They each must submit a business plan. IDA selects a single reuser and enters into a confidentiality agreement and shows due diligence. After that, there is a vote in public.

Comment: At the Romulus Town Meetings people still have questions about TAG.

P. Jones: Questions can be directed to Glenn Cooke.

S. Absolom: The reuser has to negotiate the tax rate with the town assessor, supervisor, etc.

IDA can have closed executive sessions to work things out.

Q: Is early transfer a likely consideration?

A: The Army would like early transfer because they could take credit for transfer of non-problem areas.

CERCLA requires areas to be cleaned up, but there is a provision for early transfer.

Q: Is this different from a FOST?

A: Finding of Suitability for early transfer would be needed, spelling out cost by year and schedule.

Q: Would early transfer augment FFA or circumvent FFA?

A: Early transfer would take precedent over FFA ~~schedule because issues under FFA are a cause for~~ delay. Early transfer also reserves money as must fund.

Comment: It takes a long time.

A: Six - nine months. I have a budget on each site and that would be the basis of the funding.

Q: Would the CERCLA process go away?

A: No.

Q: Would this get local political support?

S. Absolom: I don't know. I have briefed it as an option. We know the nature and extent of contamination at the sites.

Comment: We need to know how local townships control land use.

Comment: The Romulus zoning board has had two public meetings and needs another for changes. Then the town board has a public hearing.

Comment: If zoning is formed in a town then there is a requirement to zone everything in that town.

Comment: Some town members want looser, some tighter zoning laws. They're also trying to figure out how to fund it. Code enforcement officer is also head of water district.

5. The next meeting will be July 17, 2001, at 7 p.m. in the Seneca County Office Building. Use the North Road entrance and follow signs to the 2nd Floor.

Mr. Absolom thanked everyone for coming and adjourned the meeting at approximately 8:25 p.m.

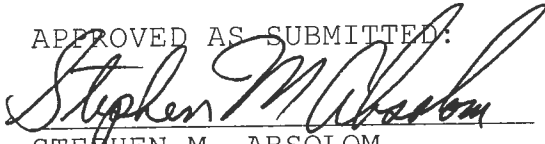
Respectfully submitted,



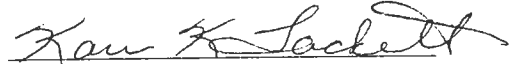
NANCY WILLIAMSON
Recording Secretary

Enclosure


APPROVED AS SUBMITTED:



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



Karen Tackett
Community Co-Chair



Presentation to the RAB
May 15, 2001

*Planned Removal Actions at
Various Sites*

Michael Duchesneau, P. E.

Topics for Tonight's Presentation

- *Proposed Removal Actions for Sites*
- *Removal Actions have not been -
Reviewed or Agreed to by EPA or
NYSDEC.*

Current and Future Challenges

- *Remedial Actions*
 - *One ROD Signed; OB Grounds Remedial Action*
 - *1996 Ash Landfill Removal Action*
 - *1999 Ash Landfill Reactive Wall Study*
- *Over 100 SWMUs and Suspected Sites*
 - 26 • *Only 24 are No Further Action SWMUs*
 - *25 are Areas of Concern*
 - * • *Remainder of Sites Pose Minimal Threat*

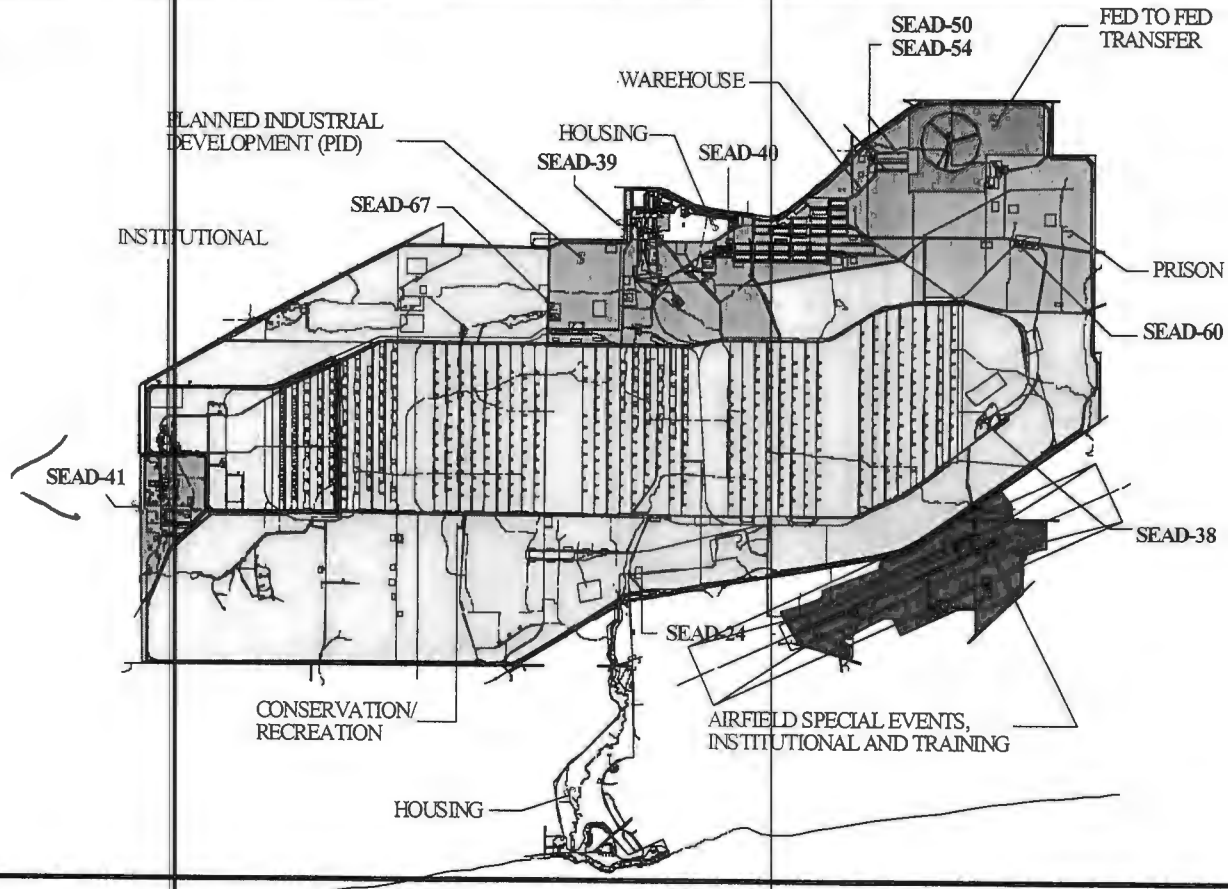
Removal Actions and the Federal Facility Agreement (FFA)

- *Section 11 of FFA; Army Can Conduct Removal Actions to Eliminate Threat*
- *Cost Effective Tool to Eliminate Sites*
- *Actions Considered to be Time-Critical due to Increased Presence of Reusers within Depot*

Strategy of Removal Actions

- *Address Small Sites with Small Problems*
- *No Groundwater Impacts*
- *Intent of Action - Achieve Closure and Avoid Further Study*
- *VOC/TPH and Metals Sites*

Location Map of Sites



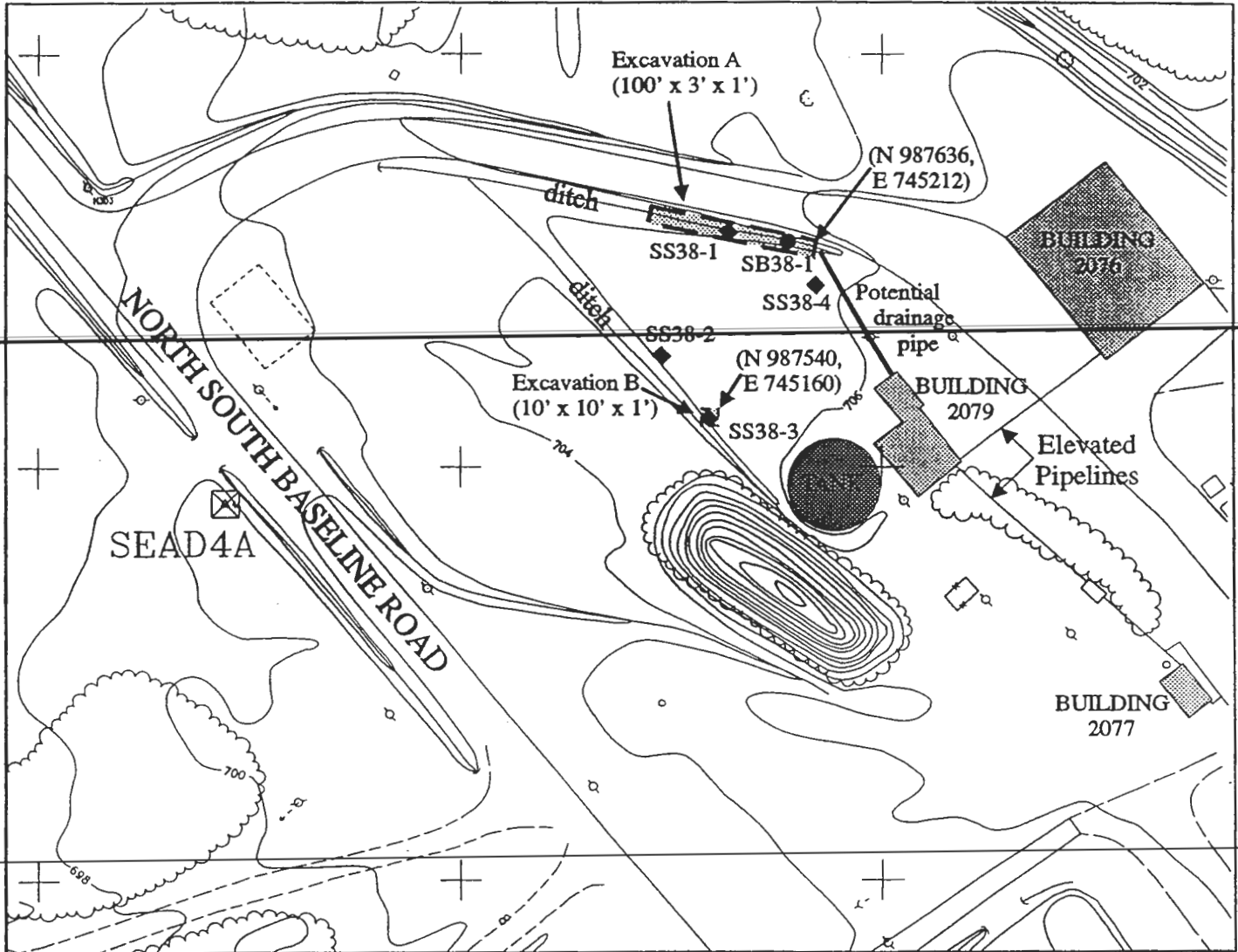
PARSONS ENGINEERING SCIENCE

VOC/TPH Removal Action Sites

- *SEAD-38 Former Boiler Blowdown Area*
 - *within SEAD-4 Area (Former Munitions Washout Facility)*
 - *SEAD-39 Bld. 121 Boiler Plant Blowdown Area*
 - *within Administration Area*
 - *SEAD-40 Bld. 319 Boiler Plant Blowdown Area*
 - *within Industrial Plant Area*
 - *SEAD-41 Bld. 718 Boiler Plant Blowdown Area*
 - *within North End Area (Completed)*
 - *SEAD-60 Oil Spill at Building 609 Boiler House (Completed)*
-

SEAD-38 Blowdown Area at Abandoned Boiler

- *Five Surface Soil Samples*
 - *Max. TPH 1940 mg/Kg*
 - *Surface Removal of Soil in Blowdown Area and Adjacent Ditches*
 - *Estimated Volume of Soil to be Removed is 15 CYs. ↶*
 - *Remedy is Off-site Landfill Disposal*
-



LEGEND

- SOIL BORING LOCATION
- ◆ SURFACE SOIL SAMPLE
- (N 987636, E 745212) NEW YORK STATE PLANE N/E COORDINATES
- ⊠ SURVEY MONUMENT
- ⊞ TELEPHONE POLE



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CLIENT/PROJECT TITLE
**SENECA ARMY DEPOT ACTIVITY
DECISION DOCUMENT FOR REMOVAL ACTION
SEAD-38**

DEPT. ENVIRONMENTAL ENGINEERING DWG NO. 727023-01001

**FIGURE 1
SAMPLE LOCATIONS AND
APPROXIMATE AREA TO
BE REMEDIATED**

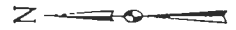
SCALE 1" = 100' DATE AUGUST 1995

SEAD-39 Blowdown Area at Building 121 Boiler Plant

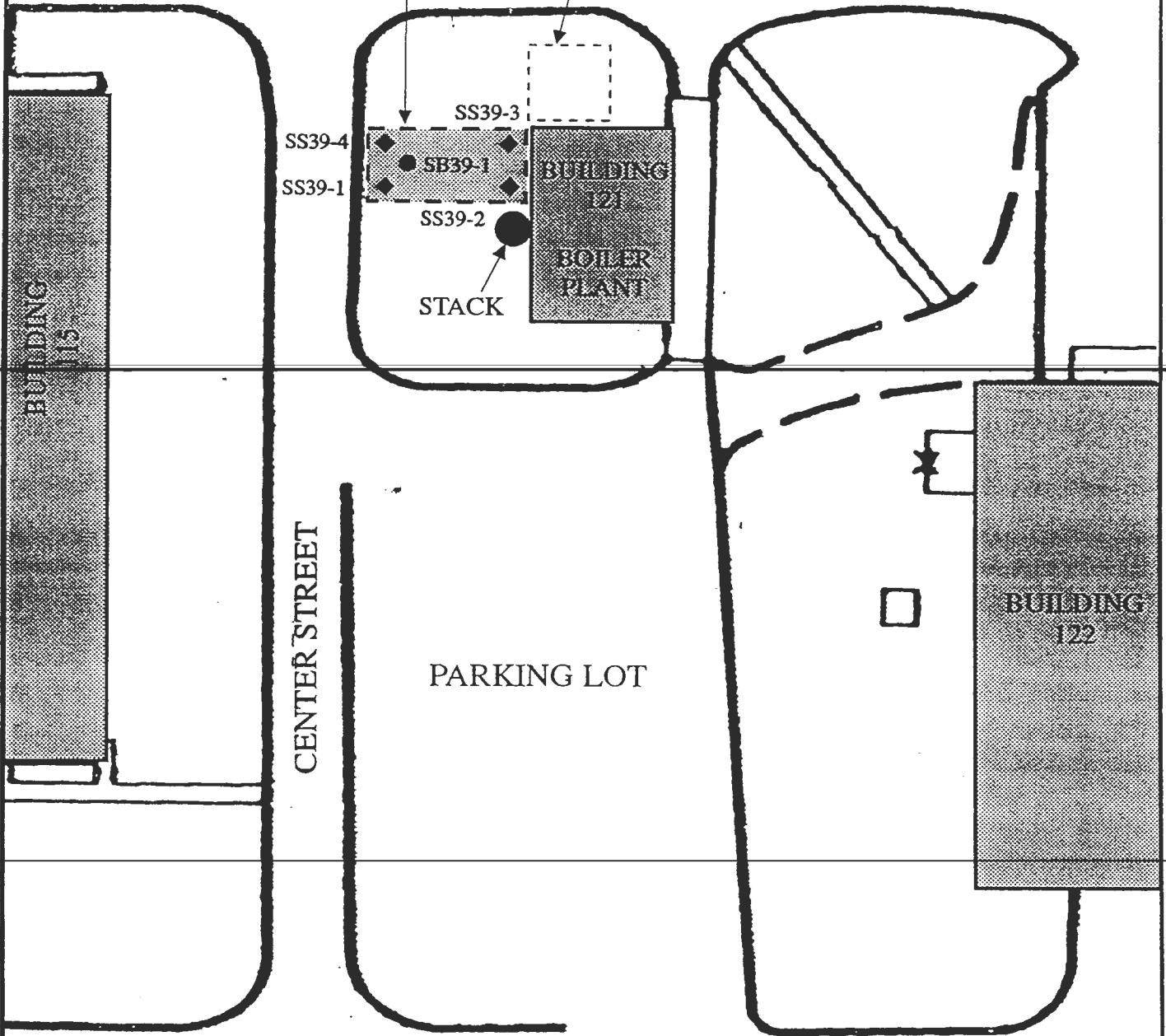
- *Six Surface and Two Subsurface (3-5 Ft.) Soil Samples*
 - *Max. TPH 118 mg/Kg - detection -*
 - *Surface Removal of Soil in Blowdown Area*
 - *Estimated Volume of Soil to be Removed is 18 CYs.*
 - *Remedy is Off-site Landfill Disposal*
-

3RD AVENUE

AREA TO BE REMEDIATED (20' X 50' X 6")



GRASS AND TOPSOIL STAGING AREA



4TH AVENUE

ADMINISTRATION AVENUE

CENTER STREET

PARKING LOT

BUILDING 115

BUILDING 121
BOILER PLANT

BUILDING 122

LEGEND

- ◆ SURFACE SOIL SAMPLE
- SOIL BORING LOCATION

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
DECISION DOCUMENT FOR REMOVAL ACTION
SEAD-39

DEPT. ENVIRONMENTAL ENGINEERING DWG. NO. 727023-01001

FIGURE 1
SAMPLE LOCATIONS AND
APPROXIMATE AREA TO
BE REMEDIATED

SCALE 1" = 50' DATE AUGUST 1995

SEAD-40 Blowdown Area at Building 319 Boiler Plant

- *Three Surface Soil Samples and
Three Subsurface Soil Samples*
 - *Max. TPH 1640 mg/Kg*
- *Removal of Soil in Blowdown Area*
- *Estimated Volume of Soil to be
Removed is 13 CYs.*
- *Remedy is Off-site Landfill Disposal*



AREA TO BE REMEDIATED
(110' x 2' x 1' AND 10' x 2' x 6')

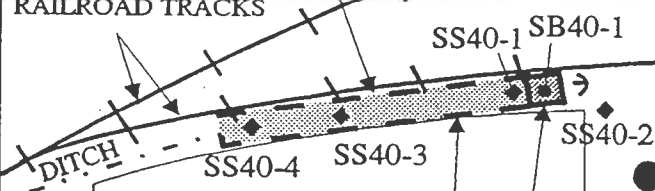
BUILDING
307

1ST STREET

BUILDING
333

RAILROAD TRACKS

AVENUE B



BUILDING
319
BOILER
PLANT
STACK

BUILDING
320

Area to be excavated to depth of 1'
Area to be excavated to depth of 6'

BUILDING
371

OPTICAL PLACE

BUILDING
318

NOTE: The origin of the ditch where the soil is to be excavated is approximately 40 feet from the northeast corner of Building 319.

BUILDING
317

BUILDING
316

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
DECISION DOCUMENT FOR REMOVAL ACTION
SEAD-40

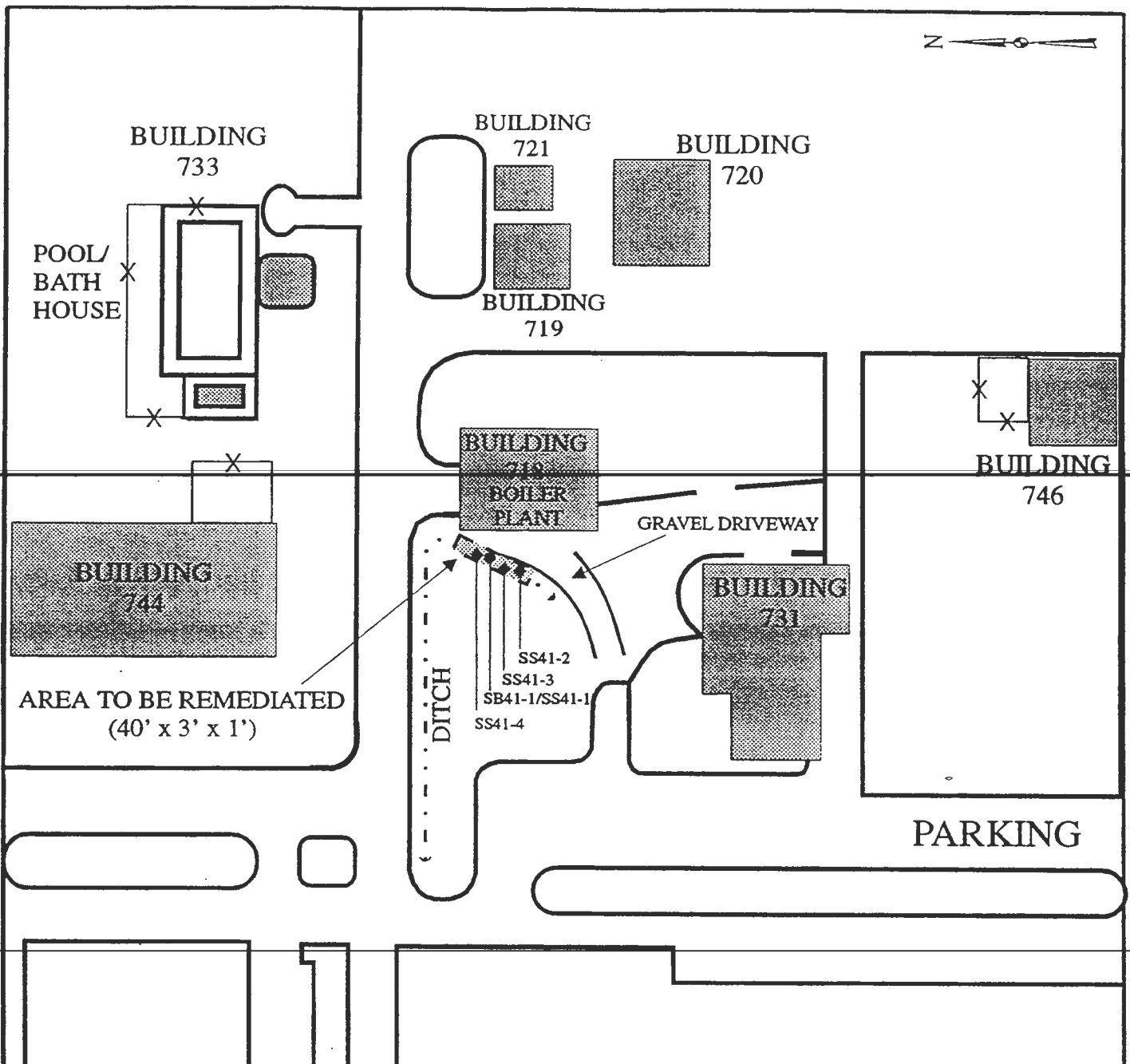
DEPT. ENVIRONMENTAL ENGINEERING DWG NO. 727023-02001

LEGEND
◆ SURFACE SOIL SAMPLE
● SOIL BORING LOCATION

FIGURE 1
SAMPLE LOCATIONS AND APPROXIMATE AREA TO BE REMEDIATED
SCALE 1" = 75' DATE AUGUST 1995

SEAD-41 Blowdown Area at Building 718 Boiler Plant

- *Four Surface Soil Samples, One Subsurface Soil Sample*
 - *Max. TPH 300 mg/Kg*
- *Surface Removal of Soil in Blowdown Area and Adjacent Ditches*
- *Estimated Volume of Soil to be Removed is 13 CYs.*
- *Remedy was LTTD Treatability Test*



LEGEND	
◆	SURFACE SOIL SAMPLE
●	SOIL BORING LOCATION

PARSONS PARSONS ENGINEERING SCIENCE, INC.	
CLIENT/PROJECT TITLE SENECA ARMY DEPOT ACTIVITY DECISION DOCUMENT FOR REMOVAL ACTION SEAD-41	
DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	727023-02801
FIGURE 1 SAMPLE LOCATIONS AND APPROXIMATE AREA TO BE REMEDIATED	
SCALE	DATE
1" = 100'	AUGUST 1995

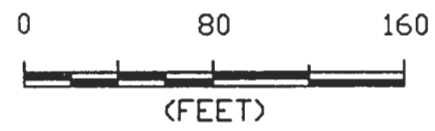
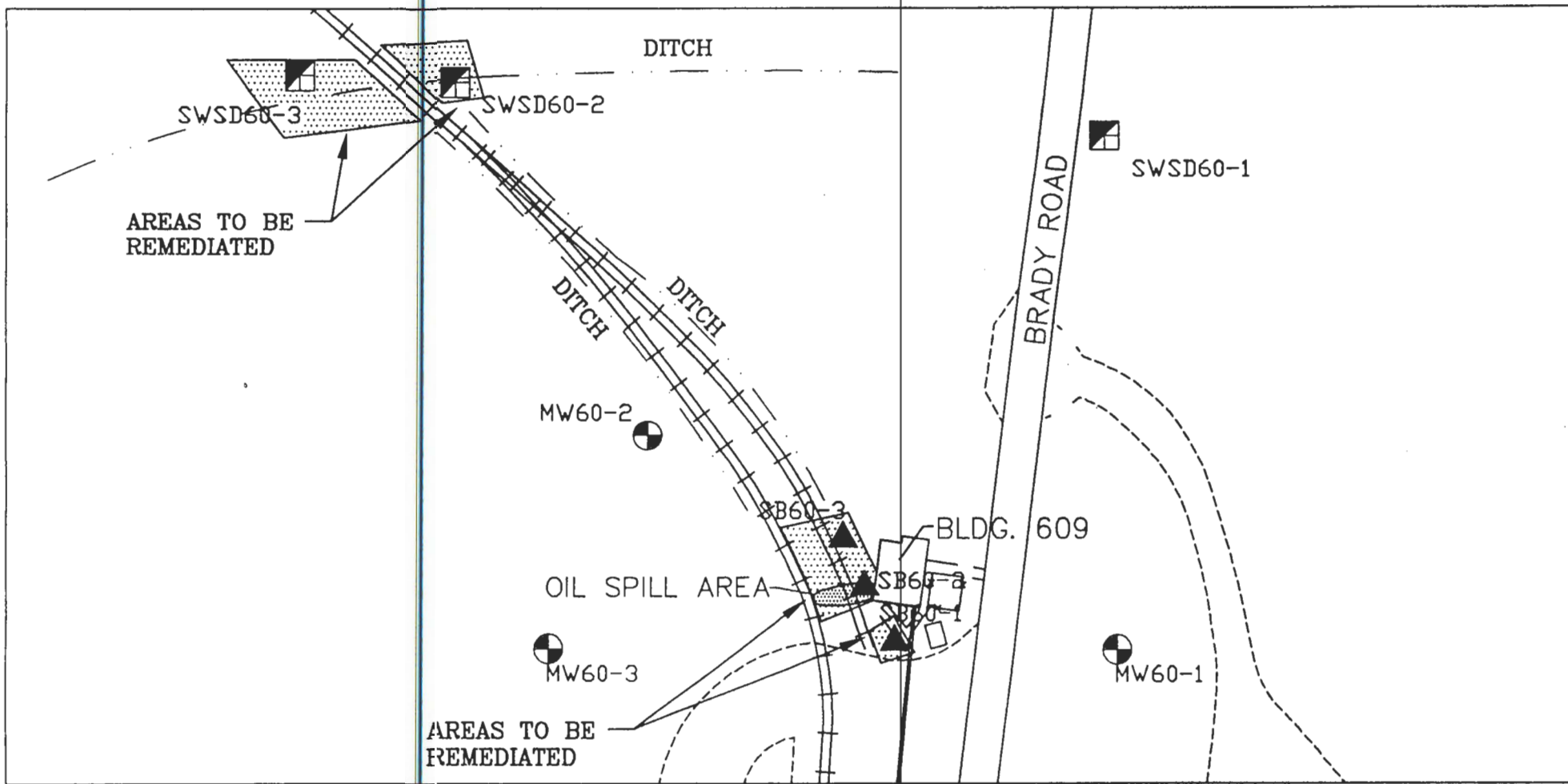
SEAD-60 Oil Spill at Bld. 609, Boiler House for Bld. 612

- *Three Surface Soil Samples, Six Subsurface Soil Samples*
 - *No VOCs above TAGM*
 - *Max. TPH 218,000 mg/Kg –*
 - *Max. PAH 27,000 ug/Kg; 5 PAHs above TAGM –*
 - *Max. PCB 4,400 ug/Kg; 2 PCBs above TAGM —*
- *Three Monitoring Wells*
 - *No VOCs above GA; Max. 1 ug/L Benzene*
 - *Max. TPH 1.22 mg/L; No GA Criteria*

SEAD-60 Oil Spill at Bld. 609, Boiler House for Bld. 612

- *Estimated Volume of Soil Removed was 200 CYs.*
- *Remedy was Thermal Treatment during the LTTD Treatability Study*

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LEGEND:

- ▲ SB60-3 SOIL BORING
- ▣ SWSD60-1 SURFACE WATER/ SEDIMENT SAMPLE
- ⊕ MW60-1 MONITORING WELL WITH WATER TABLE ELEVATION
- - - - - DITCH

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CLIENT/PROJECT TITLE	
SENECA ARMY DEPOT ACTIVITY	
DECISION DOCUMENT FOR REMOVAL ACTION	
SEAD-80	
DEPT. ENVIRONMENTAL ENGINEERING	Proj. No. 734806-01001
FIGURE 1	
SAMPLE LOCATIONS AND APPROXIMATE	
AREA TO BE REMEDIATED	
SCALE AS NOTED	DATE FEBRUARY 1999
	REV A

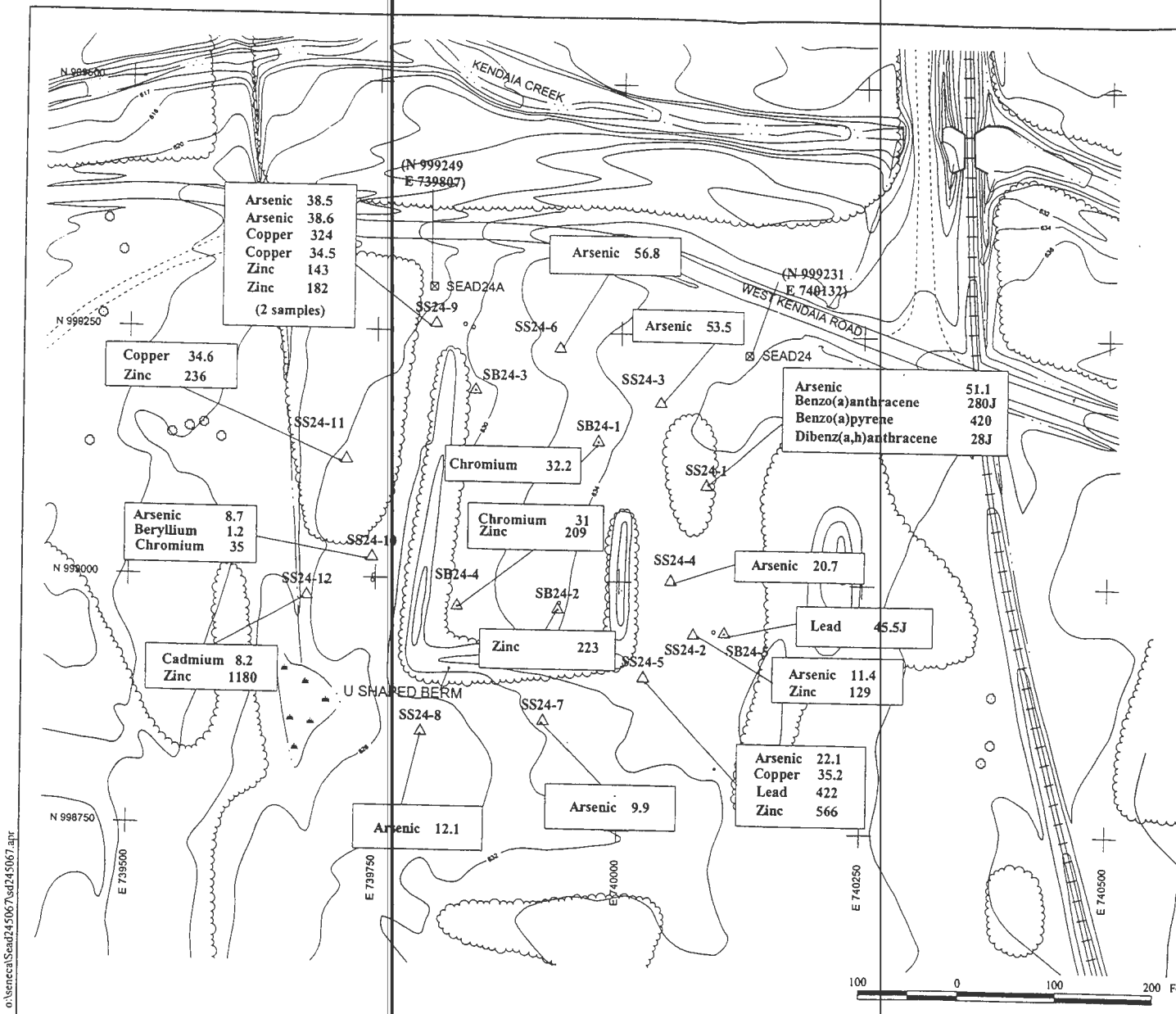
Metals Removal Action Sites

- *SEAD-24 Abandoned Powder Burning Pit*
 - *within Conservation Area (Burning of Black Powder and Solid Propellants)*
 - *SEAD-50 Four Tanks at Former Tank Farm*
 - *within Warehouse Area (Contained Antimony and Titanium Ore)*
 - *SEAD-54 One Tank at Former Tank Farm*
 - *within Warehouse Area (Contained Asbestos)*
 - *SEAD-67 Five Waste Piles, Two Bermed Areas*
 - *within Conservation Area Near Sewage Plant*
-

SEAD-24 Abandoned Powder Burning Area

29 Surface/Subsurface Soil Samples

- 3 SVOCs > TAGM; Max. DNT 12,000 ug/Kg*
- 14 Metals > TAGM; As 57 mg/Kg*
- 3 GW Wells (Al, As, Fe & Mn > GA)*
- Off-site Landfilling of 2,500 CYs. of Soil*



LEGEND

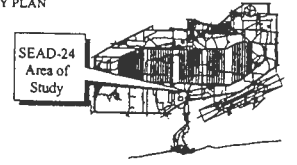
- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD

- Surface Soil Samples
- Berm Soil Samples
- Ground Water Samples
- Survey Monument

TAGM LEVELS

Arsenic	8.2 mg/kg
Beryllium	1.1 mg/kg
Cadmium	8.2 mg/kg
Chromium	29.6 mg/kg
Copper	33 mg/kg
Lead	400 mg/kg
Zinc	114 mg/kg

KEY PLAN



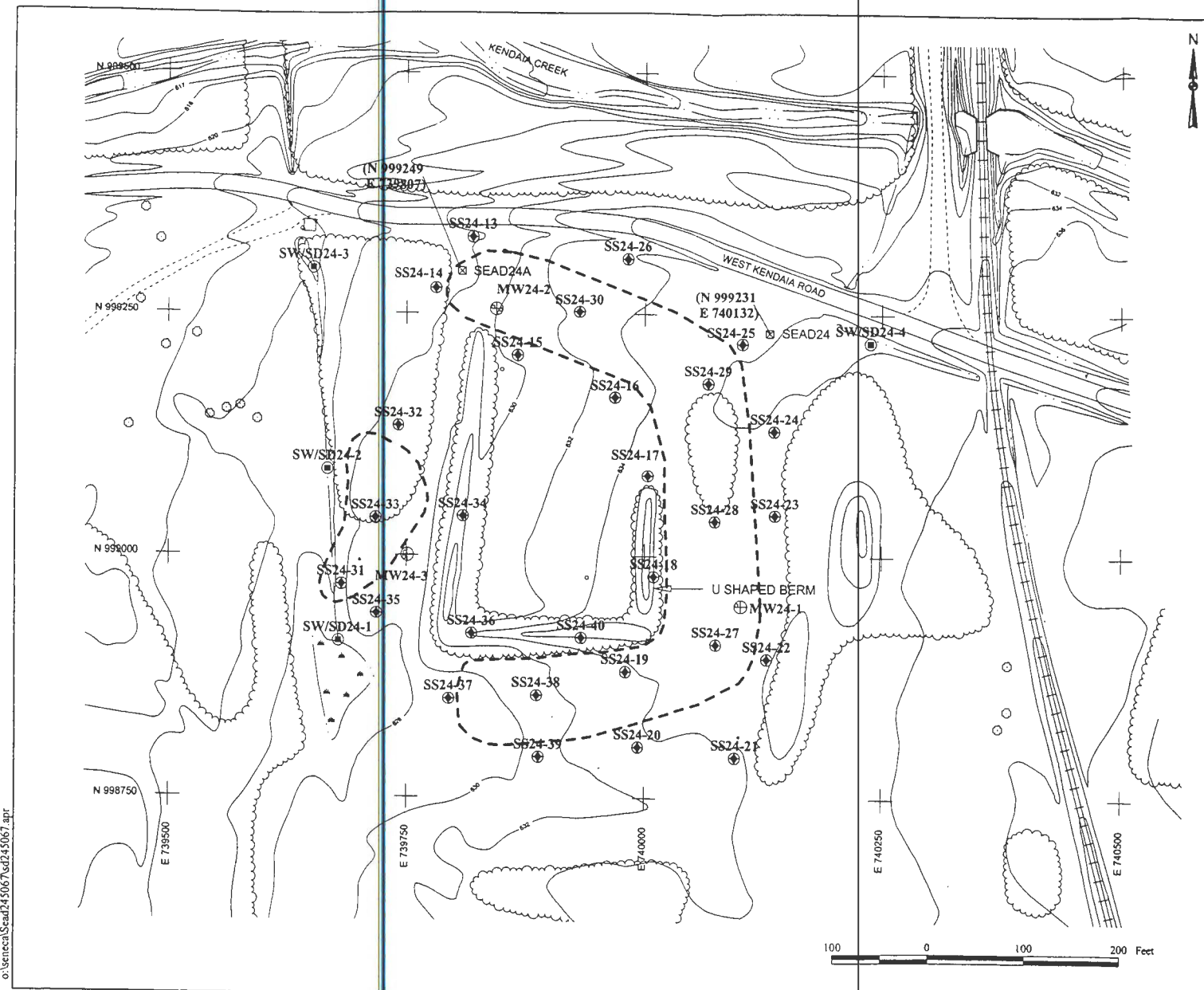
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**SENECA ARMY DEPOT ACTIVITY
 ABANDONED POWDER BURNING PIT
 SEAD-24**

FIGURE I
 ANALYTES EXCEEDING THEIR
 RESPECTIVE CRITERIA
 LEVELS IN SURFACE SOILS

JOB NUMBER: 734530-01001 DATE: MARCH 2001

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LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- Monitoring Well
- Survey Monument
- SS24-13 Post-Removal Verification Surface Soil Sample
- SW/SD24-1 Post-Removal Verification Surface Water and Sediment Sample
- Area To Be Remediated

KEY PLAN

SEAD-24 Area of Study



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SENECA ARMY DEPOT ACTIVITY
ABANDONED POWDER BURNING PIT
SEAD-24

FIGURE 2

PROPOSED EXTENT OF
REMOVAL ACTION

JOB NUMBER: 734530-01001 DATE: MARCH 2001

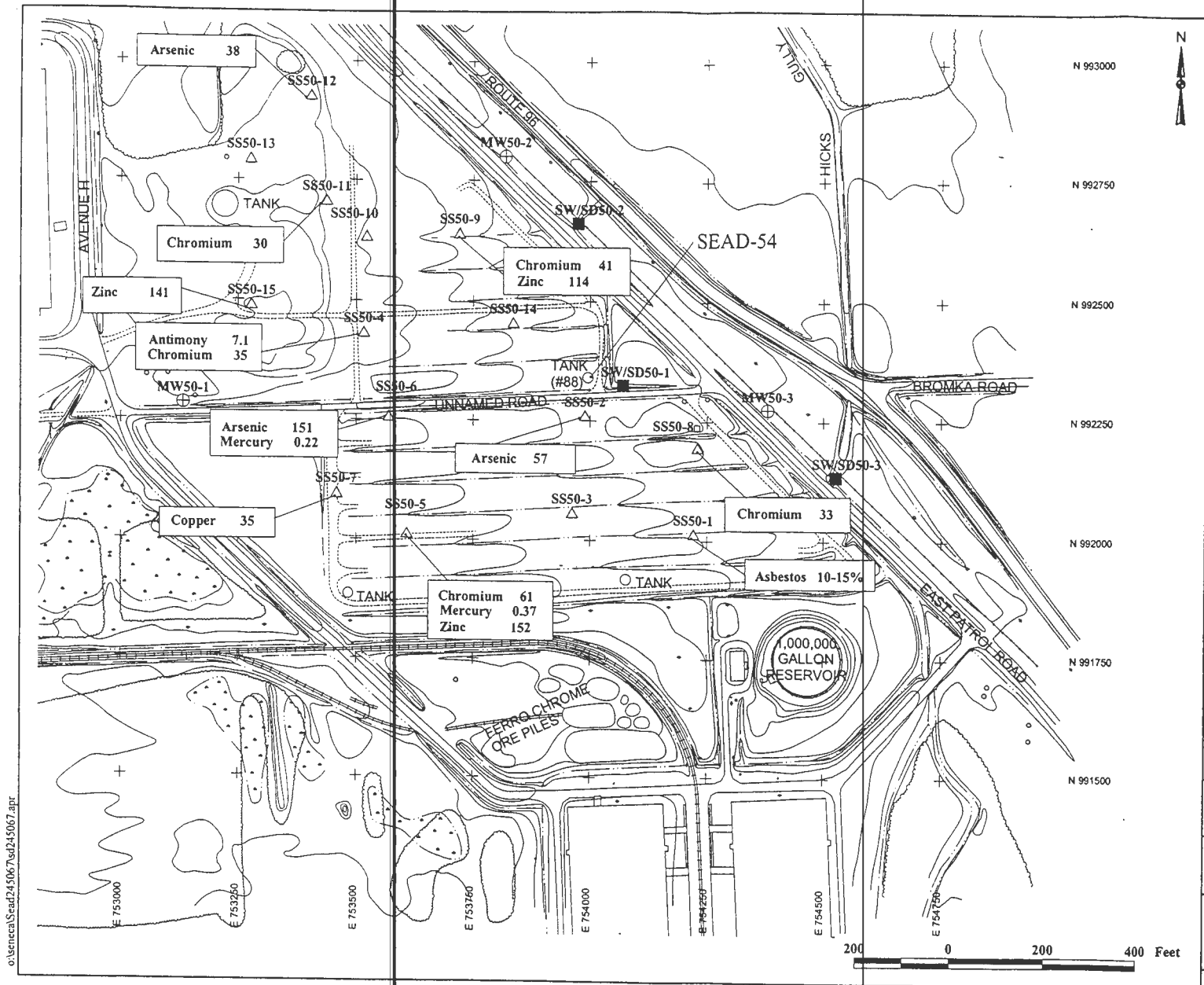


SEAD-50/54

Ore Tank Farm Area

Surface Soil from 15 Locations

- 7 PAHs > TAGM; Max. PAH 14,000 ug/Kg*
- 7 Metals > TAGM; As 151 mg/Kg*
- Asbestos One Location, Max. 15%*
- GW (Al, Fe, Mn, Na & Tl > GA)*
- Surface Water (Al & Fe > Class C)*
- Sediment (6 PAH, 6 Pest., 9 Met. > Criteria)*
- Off-site Landfilling of 5150 CYs. of Soil/Sed.*



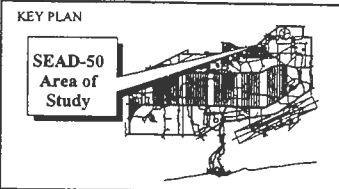
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LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- Surface Soil Samples
- Surface Water/Sediment Samples
- Monitoring Well
- Survey Monument

TAGM LEVELS

Antimony	5.9 mg/kg
Arsenic	8.2 mg/kg
Chromium	29.6 mg/kg
Copper	33 mg/kg
Mercury	0.1 mg/kg
Zinc	110 mg/kg

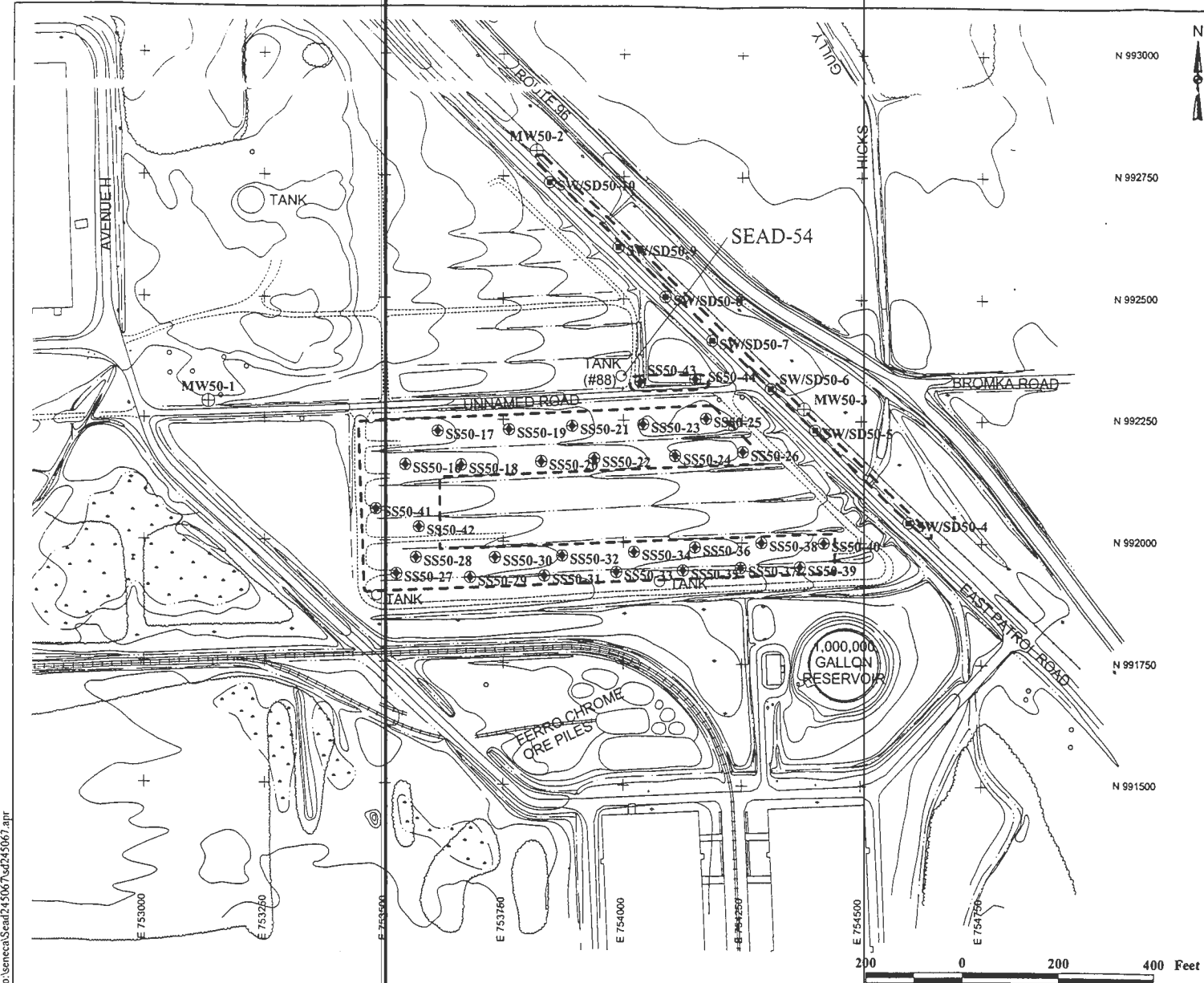


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SENECA ARMY DEPOT ACTIVITY
 TANK FARM
 SEAD-50 AND SEAD-54

FIGURE 3
 METALS EXCEEDING THEIR
 RESPECTIVE CRITERIA
 LEVELS IN SURFACE SOILS

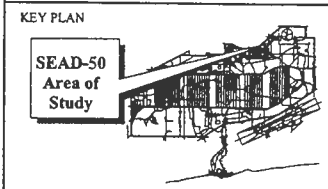
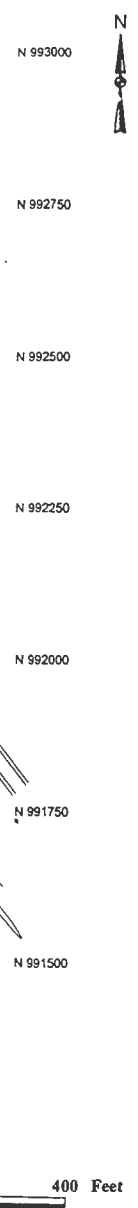
JOB NUMBER: 734330-01001 DATE: MARCH 2001



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LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- Monitoring Well
- SS50-16 Post-Removal Verification Surface Soil Sample
- SW/SD50-4 Post-Removal Verification Surface Water and Sediment Sample
- Area to be Remediated



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SENECA ARMY DEPOT ACTIVITY
TANK FARM
SEAD-50 AND SEAD-54

FIGURE 4
REMOVAL PLANS

JOB NUMBER: 734530-01001 DATE: MARCH 2001

SEAD-67 Waste Piles East of Sewage Treatment Plant No. 4

Soil from 5 Test Pits and 3 Wells

- 5 PAHs > TAGM; Max. PAH 1300 ug/Kg*
- 4 Metals > TAGM; Hg 4 mg/Kg*
- GW (Only Fe, Al & Mn > GA)*
- Surface Water (Al & Fe > Class C)*
- Sediment (6 PAH, 3 Pest., 4 Met. > Criteria)*
- Off-site Landfilling of 160 CYs. of Soil/Sed.*

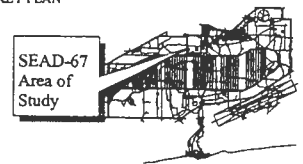
LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- Test Pit Samples
- Surface Water/Sediment Samples
- Monitoring Well
- Survey Monument

TAGM LEVELS

Benzo(a)anthracene	220 ug/Kg
Benzo(b)fluoranthene	1100 ug/Kg
Benzo(a)pyrene	61 ug/Kg
Chrysene	400 ug/Kg
Dibenz(a,h)anthracene	14 ug/Kg
Mercury	0.1 mg/Kg

KEY PLAN

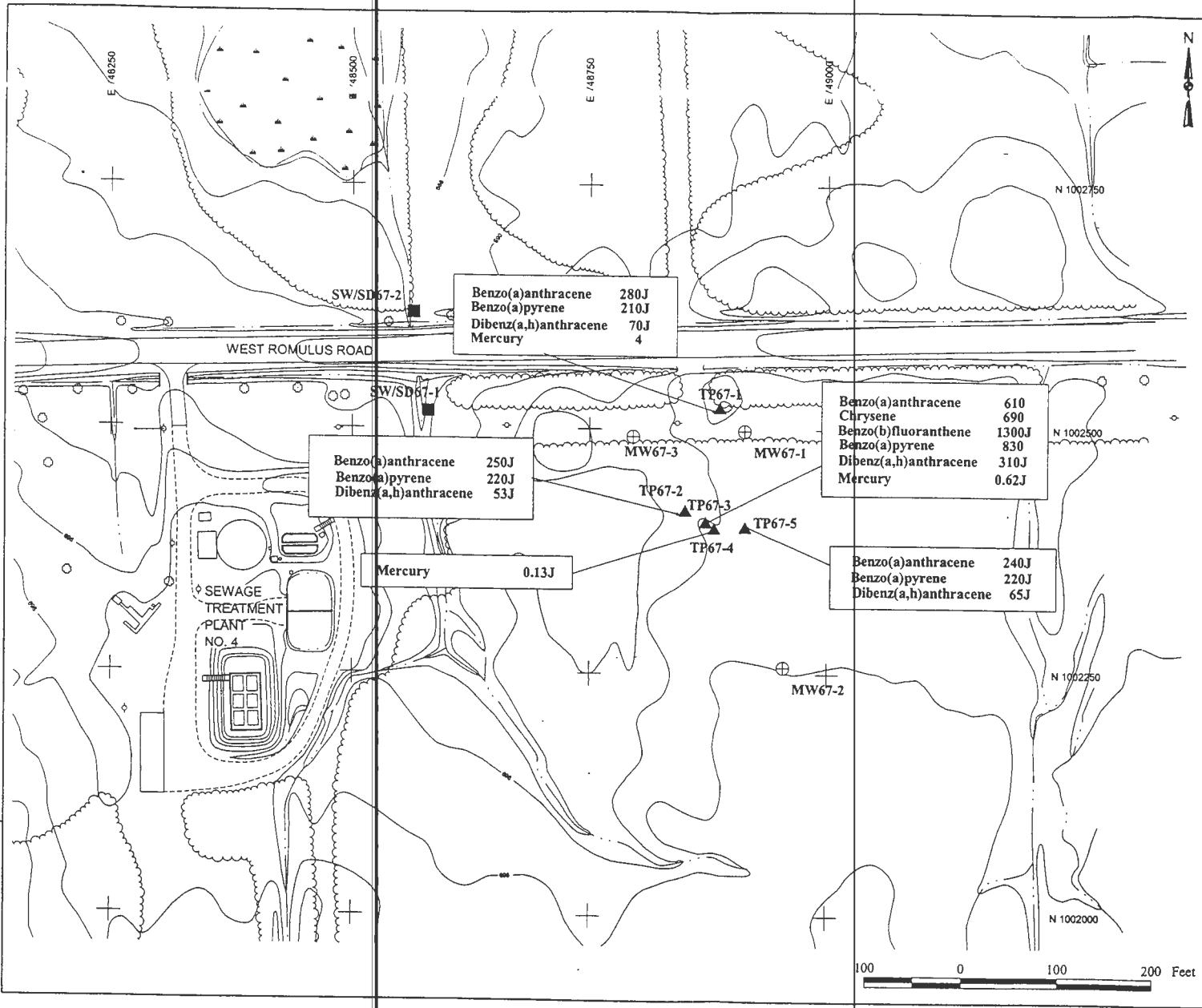


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SENECA ARMY DEPOT ACTIVITY
DEBRIS PILES EAST OF SEWAGE TREATMENT PLANT NO. 4
SEAD-67













FIGURE 5
ANALYTES EXCEEDING THEIR RESPECTIVE CRITERIA LEVELS IN SOIL SAMPLES

JOB NUMBER: 734530-01001 DATE: MARCH 2001



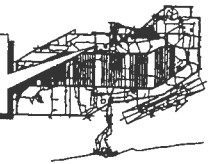
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LEGEND

-  PAVED ROAD
-  GROUND CONTOUR AND ELEVATION
-  WETLAND
-  BRUSH
-  CHAIN LINK FENCE
-  UTILITY POLE
-  APPROXIMATE LOCATION OF FIRE HYDRANT
-  RAILROAD
-  Monitoring Well
-  SS67-1 Post-Removal Verification Surface Soil Sample
-  SW/SD67-3 Post-Removal Verification Surface Water and Sediment Sample
-  Area to be Remediated

KEY PLAN

SEAD-67
Area of
Study



PARSONS
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
DEBRIS PILES EAST OF SEWAGE TREATMENT PLANT NO. 4
SEAD-67

FIGURE 6
REMOVAL PLANS

JOB NUMBER: 734530-01001

DATE: MARCH 2001

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Conclusions

- *Removal Actions Will:*
 - *Achieve Closure of Several Sites*
 - *Achieve Progress*
 - *Avoid Further Prolonged Studies*
 - *Eliminate Threat of Reuser Exposure*
 - *Promote Transfer of Property and Encourage Reuse of Depot*

*Presentation to the RAB
July 17, 2001*

*Planned Removal Actions at
Fill Area and Alleged Paint Disposal
Sites*

(SEAD-59 and SEAD-71)

Todd Heino, P. E.

PARSONS ENGINEERING SCIENCE

*Topics for Tonight's
Presentation*

- *Proposed Removal Actions for
SEAD-59 and SEAD-71*
- *Removal Actions are currently being
reviewed by EPA and NYSDEC*

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Removal Actions and the Federal Facility Agreement (FFA)

- *Section 11 of FFA; Army Can Conduct Removal Actions to Eliminate Threat*
- *Cost Effective Tool to Eliminate Sites*
- *Actions Considered to be Time-Critical due to Increased Potential of Incidental Contact for Reusers within Depot*

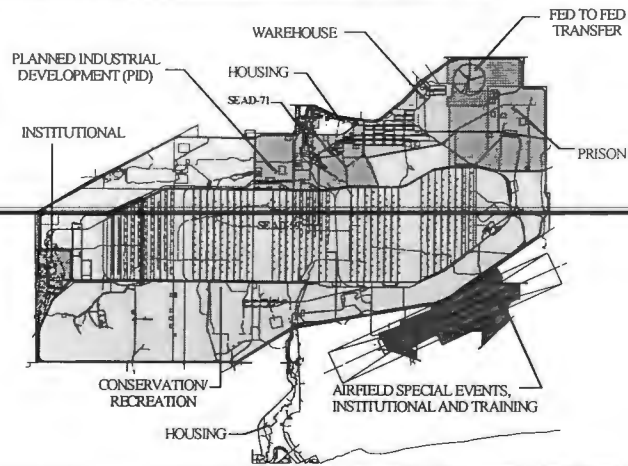
PARSONS ENGINEERING SCIENCE

Strategy of Removal Actions

- *Address Small Sites with Small Problems*
- *No Groundwater Impacts*
- *Intent of Action - Achieve Closure and Avoid Further Study*
- *VOC and TPH Sites*

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Site Location Map for SEAD-59 and SEAD-71



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597

SEAD-59 & SEAD-71 Regulatory Process Summary

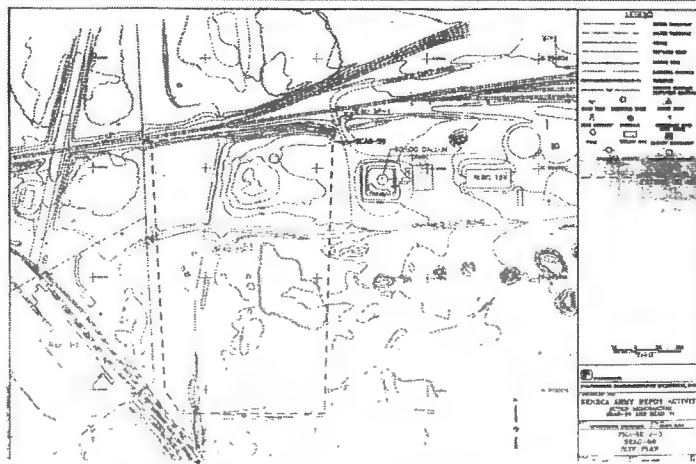
- Final ESI Issued; April, 1995
- Final RI Workplan Issued, April 14, 1997
- RI/FS Recommended
- RI Phase 1 Completed, July, 1998
- Non-Time Critical/Removal Action Recommended
- Action Memorandum for Removal Action's June, 2001.
- Time Critical Removal Action Recommended
- Removal Action Workplan (to be completed)
- Removal Action (to be performed)

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Summary of Site Conditions at the Fill Area SEAD-59

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Site Map for SEAD-59



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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.)*

- *Debris encountered including construction debris (concrete, asphalt, metal and wood), drums and paint cans.*

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Soil Sampling Summary for SEAD-59

AHs (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.)*

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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*
- *Debris encountered included construction debris (fencing, metal and asphalt), drums, cinders, railroad ties and oily soil.*

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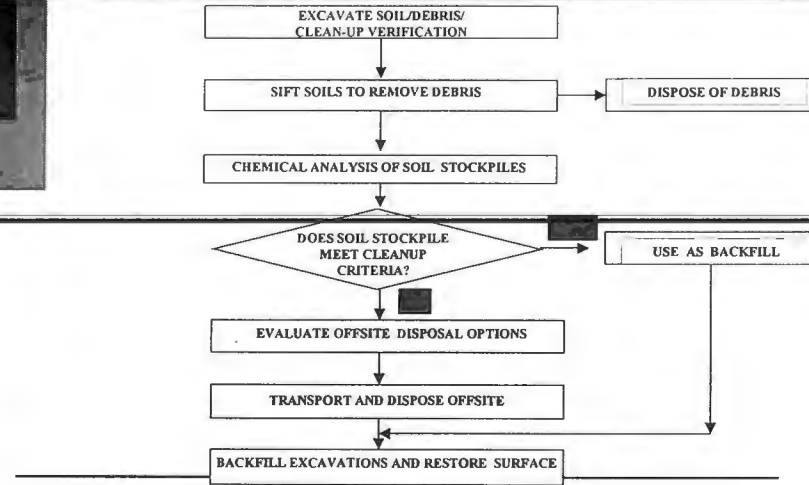
Soil Sampling Summary for SEAD-71

AHs (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.)*

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SEAD-59 and SEAD-71 Removal Action Flow Chart



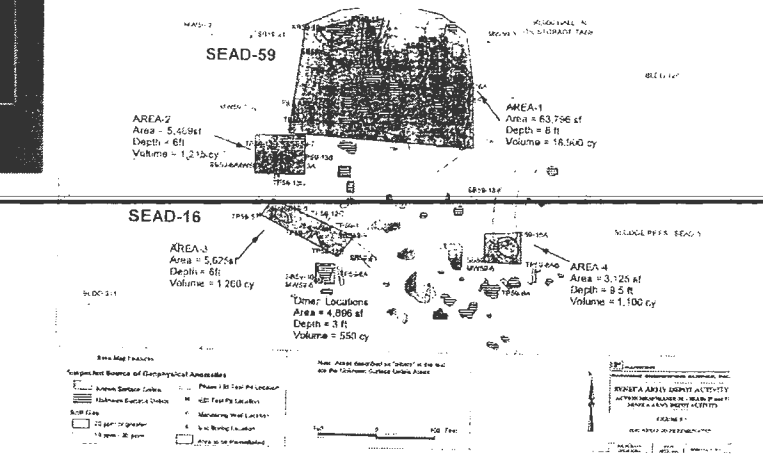
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Proposed Soil Clean-up Goals for SEAD's 59 and 71

COMPOUND	SEAD-59	SEAD-71
Semi-volatile Organics	(ng/kg)	(ng/kg)
2-Methylnaphthalene	65,471	114,546
Acenaphthene		147,273
Anthracene		373,092
Benzo(a)anthracene	13,208	14,966
Benzo(a)pyrene	12,107	11,980
Benzo(b)fluoranthene	15,409	8,784
Bis(2-Ethylhexyl)phthalate	65,471	
Dibenz(a,h)anthracene	2,531	2,497
Fluoranthene	851,121	1,636,368
Fluorene		120,273
Indeno(1,2,3-cd)pyrene		6,479
Naphthalene		146,455
Pyrene	834,753	1,045,639
Pesticides/PCBs		
4,4-DDT		2,045
alpha-Chlordane		25
Aroclor-1254	327	
Endrin		121
gamma-Chlordane		49
Heptachlor epoxide	21	88
Metals	(mg/kg)	(mg/kg)
Antimony	13	
Mercury	1.4	0.4
Selenium		4
Zinc		1792

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Soil Areas to be Remediated SEAD-59



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Removal Action at SEAD-59

- Approximately 23,000 cubic yards of soil to be excavated.
- Debris will be screened out and disposed offsite.
- Offsite borrow or clean excavated soils to be used as backfill.
- Offsite disposal of soils exceeding clean-up goals.

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Conclusions

■ *Removal Actions Will:*

- *Achieve Closure of Several Sites*
- *Achieve Progress*
- *Avoid Further Prolonged Studies*
- *Eliminate Threat of Reuser Exposure*
- *Promote Transfer of Property and Encourage Reuse of Depot*

PARSONS ENGINEERING SCIENCE

MINUTES
RESTORATION ADVISORY BOARD
July 17, 2001 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair; Julio Vazquez, Environmental Protection Agency; Alicia Thorne, NYS Department of Environmental Conservation; Dan Geraghty, NYS Department of Health,

Community RAB Members Present:

Karen Tackett, Community Co-Chair; Patricia Jones, Industrial Development Agency; Bob McCann, Fred Swain, Dave Wagner

Community RAB Members Not Present:

Dave Schneider (excused), Frank Ives, Jeffrey Beall, Frankie Young-Long

Environmental Support Personnel and Guests Present:

Jacqueline Travers, Parsons Engineering; Chris Raddell, Parsons; Todd Heino, Parsons; Armando Jimenez, Corps of Engineers, North Atlantic; Kevin Healy, COE, Huntsville; MAJ David Sheets, COE, Huntsville; Randy Battaglia, U.S. Army Corps of Engineers, New York District; Thomas Enroth, U.S. Army COE, New York District; Keith Hoddinot, US Army Environmental Hygiene Agency; Nancy Williamson, Recording Secretary

Guest: William Allen, Ovid

2. Mr. Absolom called the meeting to order at 7:00 p.m. All attendees were asked to introduce themselves. Request for changes to the May minutes elicited no changes. Mr. Absolom and Ms. Tackett signed the minutes into the record.

Mr. Absolom announced that Mr. Mike Duchesneau has left Parsons Engineering for another position. He will be missed, but fortunately Parsons has good support

people so there will be no impacts to the process. Todd Heino will be the new Project Manager for Seneca. Marsden Chen retired July 3rd. Jim Quinn will be Acting Chief, Remedial Section, DEC. There should be a smooth transition.

3. The agenda for the evening consisted of a presentation by Mr. Todd Heino, Parsons Engineering, who discussed Planned Removal Actions at Fill Area and Alleged Paint Disposal Sites (SEAD-59 and SEAD-71) (handout enclosed.)

~~Mr. Heino explained that certain sites could be~~
 moved from non-time critical (over six months) to critical (within six months) action with the impetus being to prevent incidental contact for re-users within the depot. (Federal Facility Agreement, Section 11.)

In an effort to achieve closure, we would address small sites with small problems that have no groundwater impacts (VOC and TPH Sites). SEAD-59 and SEAD-71 are such sites.

Mr. Heino showed a map of SEAD-59 and SEAD-71 and summarized the work to date on the sites. He then explained the site conditions and results of soil sampling at each site. He presented a Removal Action Flow Chart and Clean-Up goals.

Finally, Mr. Heino gave the Removal Actions for each site. He concluded that removal actions could achieve closure of several sites, show progress in clean-up, avoid further studies, eliminate threat to reuser, and promote transfer of property encouraging reuse of the depot.

Question: Are these areas part of TAG?

Answer: Yes.

Q: How big is SEAD-59?

A: Two acres.

Comment: SEAD-59 has buried drums we don't know the contents of and also paint cans exist.

Q: Define SEAD-71.

A: It is an area between the railroad tracks, not even two acres, approximately 500-600 ft. by 150 ft. It has higher concentrations than SEAD-59. Two 20-gallon drums were found crushed. According to the Removal Action Flow Chart, the area would be sifted to determine soil contents and the drums examined. The contaminated earth would be removed to a landfill and the area backfilled with two feet of clean soil.

Comment: SEAD-71 - excavating the area will remove anomalies.

~~Q: Will removal actions affect the railroad line?~~

A: There will be a leeway from the line unless findings require moving closer. Then we will reevaluate.

Q: How deep is the excavation?

A: Three to ten feet. Usually bedrock is at 10 feet and that's the limiting factor.

Q: What is the timetable for completion of these sites?

A: By the end of the calendar year, but it depends on how fast we can get contracts.

Mr. Absolom: We have documents to the regulators and are awaiting comments and signatures at two levels to AMC. As soon as we get comments, we'll bring in the contractor and get work plans. By the end of

September, we should be digging dirt with 60 days or sooner to close it out. Part of the process is to validate that there is no ground water contamination. If there are contaminants, we need to make assurance that there is no danger. The purpose is to move out and close these sites.

Q: Are there any roadblocks?

A: No.

Q: Do we know the contents of the drums?

A: We will know the contents before they are disposed of.

Comment: We'll look for characteristics of products.

4. Steve Absolom reiterated his hope to bring in someone to talk about land use. He is targeting the next meeting. He would like to invite Stan Citron, Attorney, who is developing land use control plans for

the Army. Mr. Citron has a feel for how the Army is dealing with land use controls.

Q: Will you notify the Town of Romulus Board when the agenda is firmed up.

A: I expect to ask them to speak and will also invite the Town of Varick.

Land use controls determines what the land will be used for, e.g. industrial vs. housing development. Land use restrictions are required.

~~**Q:** At KidsPeace there was a big hole left when a tank was removed. Is it still there?~~

~~**A:** A contract has been let to fill in the hole.~~

S. Absolom to K. Tacket: What was your impression of the IDA meeting you attended?

A: In the June meeting, they discussed the rail cars on the depot and stated that the county gets \$1 per car. Also that a contract was awarded to put lights on the water tower.

Q: Has there been any feedback on the Early Transfer Option?

A: We haven't gotten a response. Time, money and liability considerations will make the Army move cautiously.

S. Absolom: We have a request from the IDA to prepare documents to lease the railroad for storage of empty cars. There is a question of why the need to lease rather than transfer. We will look at this with the regulators at the BCT meeting tomorrow. Under consideration are forty-two miles of track in the conservation area and elsewhere. Because of the sluggish economy, there are excess railcars in industry.

Q: Don't the rails need to be driven over to keep them in good shape?

S. Absolom: Rails need regular maintenance. Ours were last used when IPE left in 1999. Railroad activity will consist of use in the industrial area of the depot and for tourism in the conservation area.

Geneva would like to use the tracks and will maintain the rails to the depot.

Q: Will rails have to be upgraded?

A: The Army does not have a requirement. IDA will have the responsibility and will make that decision.

5. One and a half years ago there was a desire by the RAB to have a meeting with regulators without the Army presence. Is there still this interest? (**RAB members please comment at next meeting.**)

~~We also need to solicit new members for the RAB.~~

K. Tackett: Yes, and also to send a write up to local schools for their newsletters.

S. Absolom: That would be good for you to do. Are there any other issues or concerns?

R. Battaglia: We're about ready to award a contract (within 1-2 weeks) to complete the remedial action project on the OB Grounds. It will probably be complete in five months. Roy F. Weston will be the contractor.

Comment: This is dealing with piles already excavated.

6. After a discussion of the meeting date in September, the members decided to move the meeting to October 16, 2001, at 7 p.m. in the Seneca County Office Building. Use the North Road entrance and follow signs to the 2nd Floor.

Mr. Absolom thanked everyone for coming and adjourned the meeting at approximately 8:05 p.m.

Respectfully submitted,

Nancy Williamson

NANCY WILLIAMSON
Recording Secretary

Enclosure

APPROVED AS SUBMITTED:

Stephen M. Absolom
STEPHEN M. ABSOLOM

U.S. Army Co-Chair

Karen K. Tackett
Karen Tackett

Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
November 20, 2001 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair; Julio Vazquez, Environmental Protection Agency; Alicia Thorne, NYS Department of Environmental Conservation; Dan Geraghty, NYS Department of Health, Charlotte Bethany, DOH

Community RAB Members Present:

Karen Tackett, Community Co-Chair; Patricia Jones, Industrial Development Agency; Bob McCann

Community RAB Members Not Present:

Jeffrey Beall, Frank Ives, Dave Schneider, Carmen Serrett, Fred Swain, Henry Van Ness, David Wagner, Frankie Young-Long,

Environmental Support Personnel and Guests Present:

Jacqueline Travers, Parsons Engineering; Chris Raddell, Parsons; Todd Heino, Parsons; David Anderson, Parsons; David Babock, Parsons; Randy Battaglia, U.S. Army Corps of Engineers, New York District; Thomas Enroth, U.S. Army COE, New York District; Janet Fallo, U.S. Army COE, New York District; Glenn Cooke, Seneca County IDA; Jane Schaffer, Harriet Haynes, Seneca County ED&P, Nancy Williamson, Recording Secretary

2. Mr. Absolom called the meeting to order at 7:15 p.m. All attendees were asked to introduce themselves. Request for changes to the July minutes elicited no changes. Mr. Absolom and Ms. Tackett signed the minutes into the record. He explained the necessity for postponing the October meeting was to find a speaker on Land Use Controls (LUCs). He was fortunate to find tonight's speaker, Mr. David Anderson of Parsons Engineering Science and an Attorney. Mr. Anderson has

considerable experience and a wide knowledge on the subject.

3. We are close to having a Final Remediation Plan on the Ash Landfill and so may schedule a public meeting at the next RAB meeting. It will be an availability session with floating commentators and a court stenographer.

4. Mr. Absolom introduced Mr. Dave Anderson, JD, Parsons Engineering Science to talk about Land Use Controls.

~~Mr. Anderson explained that land use controls are~~ a time tested tool for land property going back to the early laws of England. Tonight's focus will be a presentation on how land use controls can work for Seneca Army Depot Cleanup, how they can provide a level of protection and can get the community involved.

Current EPA Institutional Control Policy (IC) includes legal and administrative controls minimizing contamination exposure by limiting land/resource use, and are appropriate for use under CERCLA and RCRA. The IC is generally meant to supplement cleanup and are most effective if layered though they can also be used in series. The EPA has different understanding from DOD on implementation, maintenance and enforceability.

Current DOD and Army Land Use Controls (LUC) Policy are the physical, legal or administrative mechanism restricting use and/or access to prevent/reduce human health and/or environmental risks. DOD Policy on Land Use Controls associated with environmental restoration activities (17 Jan 2001) includes DOD guidance on LUCs associated with environmental restoration activities for property planned for transfer out of Federal control. DOD guidance (2 Mar 2001) includes a template for LUCs agreement with environmental regulatory agencies. US Army Environmental Center has drafted an Interim LUC's Management Plan (Draft Aug 2001).

Mr. Anderson outlined four LUCs/IC Options. **Proprietary Controls** covers deed restrictions, easements, and covenants/contracts, as well as reversionary interest. **Government Controls** encompass local permits for well drilling/construction, conservation easements, improvement districts, and zoning. Also covered was

Federal statute (RMA), State statute, and local ordinance, e.g. environmental protection ordinance. **Enforcement and Permit Tools** cover administrative orders, environmental permits and consent decrees. **Information Devices** are deed notices, EPA/Federal site registry and advisories.

LUCs/ICs issues to be solved are:

- a) who decides to use LUCs/ICs,
- b) when it is appropriate to use them,
- c) are they to be used in property transfer and/or leases,
- d) ~~how does the facility build a record for~~ LUCs/ICs use,
- e) how does the facility provide for LUCs/ICs enforceability.

Mr. Anderson then gave three hypothetical cases that might be considered for Seneca Army Depot - an Industrial Area Lease, a Landfill, and a Conservation Area. In each case the process involved a Feasibility Study, Land Use Determination, Agreement for LUCs with EPA and State, Record of Determination - LUCs, Finding of Suitability to Lease (FOSL) or Transfer (FOST) and layering determination.

Mr. Anderson then asked for questions from the floor.

Question: With regard to LUCs, is the Army releasing responsibility to the site?

Answer: The Army is responsible for past liability, not for anything occurring after the transfer.

Mr. Cooke: Towns need to be involved through their boards.

Mr. Geraghty: The Department of Health wants someone to be responsible for enforcement of restrictions.

Mr. Anderson: Towns need to be involved in deed restrictions and zoning. There are several ways to involve towns.

Mr. Absalom: The Army will look at what zoning, laws and codes are already on the books.

Ms. Haynes: Local boards need presentations of simple short models so they can be brought into the process.

Mr. Anderson: With permission of the Army, we can prepare presentations for town boards.

Q: What's to keep towns from changing the rules?

A: Nothing. But layering provides protection.

Q: Can we write in fines for those who go against deed/lease restrictions—such as liquidation of damages, etc.?

A: Restrictions have to be carefully written and very well publicized.

Q: Are Land Use Controls reviewed on a 5-year basis to see if they're being followed?

A: It hasn't gotten to that point yet. It could be done. There won't necessarily be an Army presence.

Comment: Because LUC's are becoming more common, DOH and EPA are looking at having a follow-up system built in.

Comment: Watch-dogging is a good idea.

Q: Can restrictions vary within the county?

A: Minimal restrictions can be set up, but then have stricter controls for Seneca Army Depot areas.

Comment: If you find someone has violated LUCs or the LUC is failing, the Army would need to do something.

Comment: If there are problems, a review can be requested. LUCs should be gotten in place while the Army is still here doing clean-up—a trial period and if there are problems, correct them.

Q: What if down the road after monitoring, we need to make restrictions more stringent and the new owner doesn't want to live up to them?

A: The Army won't reimburse the new owner but will correct the problem.

Comment: Care is needed in writing the documents.

Q: What happens if ground water becomes contaminated outside the depot?

A: The Army has no jurisdiction outside the depot. The local community is the best one to deal with restrictions. The Health Department can impose restrictions.

Comment: If the Army heard of this situation, it would notify DOH who would notify the county.

M. Tackett: If property transfers three times, could certain restrictions drop off?

~~**Mr. Anderson:** I have heard of it. I'm not sure about New York. Research would be done and written into the LUCs to have restrictions continue longer.~~

Comment: For the transfers under NYS Law, restrictions run with the property forever.

Comment: Language can be put in the lease to account for revisiting LUCs specifying parties, regulators, and roles of local governments.

Mr. Cooke: Can you specify what should be included in the LUCs?

Mr. Anderson: No. As a contractor, the Army tells me what to include. If you have suggestions, they should be sent to Steve Absolom.

Q: Can you outline the process?

S. Absolom: The Army cannot have the contractor do the town zoning. It **can** provide outreach efforts.

Q: What are the dangers when there are no zoning restrictions?

Mr. Anderson: They are considerable. The community must protect itself from residual contamination on land. The Army can do some things in the deed. If the deed fails, then that's it. LUCs must be layered and have as many types of control as possible as a safety net.

Q: Why are LUCs being considered now rather than years ago when we started leasing?

Mr. Absolom: We're not going back. Deeds and leases have included LUCs. We have brought Dave Anderson in to let the community know what it will need to do to become involved in LUCs, such as with building permits, zoning,

etc. Soon we'll be doing areas that have more remediation.

Mr. Geraghty: As regulators, we want to know LUCs are enforced.

Ms Schaffer: All these regulatory agencies have controls in place. So are you telling towns they need to be watchdogs?

Mr. Anderson: No. The regulatory protections will continue. We also want LUCs to supplement the other controls. It requires a vigilant community to protect itself. ~~LUCs developed by the community will be accepted more readily by the community.~~

Mr. Geraghty: DOH is not forcing zoning to the towns.

Mr. Anderson: But zoning is a good tool. The Army won't impose zoning on a community. It can't. It can just suggest LUCs.

Mr. Absolom: We won't impose zoning. The Army will have controls and wants to work with the community. There must be enough layers in place to protect the community.

There being no further questions on LUCs, Mr. Absolom thanked Mr. Anderson for his presentation.

5. Mr. Absolom asked for open discussion. There being none, a motion was made to close the meeting.

6. Mr. Geraghty, DOH, expressed his pleasure at working with the RAB and introduced his replacement, Ms. Charlotte Bethany. Mr. Absolom thanked Mr. Geraghty for all he had done for the RAB.

7. The next meeting will be January 15, 2002, at the Seneca County Office Building, 1 DiPronio Drive, Waterloo, NY, 7:00 p.m. Use the North Road entrance and follow signs to the 2nd Floor.

Mr. Absolom thanked everyone for coming and adjourned the meeting at approximately 8:52 p.m.

Respectfully submitted,

Nancy Williamson

NANCY WILLIAMSON
Recording Secretary

Enclosure

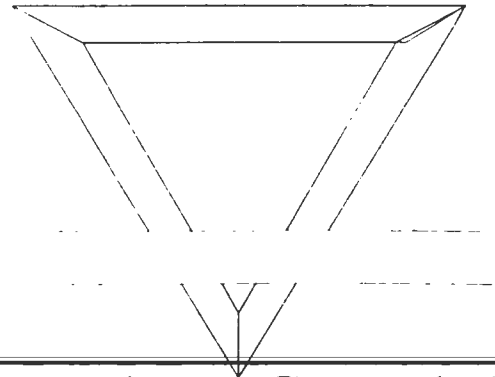
APPROVED AS SUBMITTED:

Stephen M. Absolom

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

Karen K. Tackett

Karen Tackett
Community Co-Chair



Using Land Use Controls in the Seneca Army Depot Cleanup

David Anderson, J.D.



Current EPA Institutional Control Policy (IC)

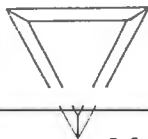
- ✓ IC – Legal/Admin Controls minimizing contamination exposure by limiting land/resource use
- ✓ Appropriate for use under CERCLA and RCRA
- ✓ Generally meant to **supplement** cleanup
- ✓ Most effective if **layered**
- ✓ Also can be used in **series**
- ✓ Different understanding from DoD on implementation, maintenance and enforceability





Current DoD / Army LUCs Policy

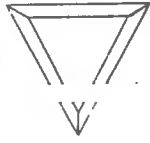
- ✓ Land Use Controls (LUCs) – physical, legal or administrative mechanism restricting use/access to prevent/reduce human health/environmental risks
- ✓ DoD Policy on Land Use Controls (LUCs) Associated with Environmental Restoration Activities (17 Jan 2001)
 - DoD Guidance on LUCs Associated with Environmental Restoration Activities for Property Planned for Transfer Out of Federal Control
- ✓ DoD Guidance on LUCs with Environmental Regulatory Agencies (2 Mar 2001)
 - Template for LUCs Agreement with Environmental Regulatory Agencies
- ✓ USAEC Interim LUCs Management Plan (Draft Aug 2001)



LUCs/IC Options

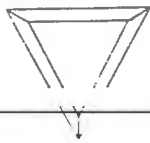
- ✓ LUCs/IC--**Proprietary Controls**
 - Deed Restrictions, Easements, Covenants/Contracts, Reversionary Interest
- ✓ LUCs/IC--**Government Controls**
 - Local Permits--well drilling/construction; Conservation Easements, Improvement Districts, Zoning
 - Federal statute (RMA); State statute; Local ordinance (e.g., environ. prot. ord.)
- ✓ LUCs/IC--**Enforcement and Permit Tools**
 - Administrative Orders, Envirn. Permits, Consent Decrees
- ✓ LUCs/IC--**Informational Devices**
 - Deed notices, EPA/Fed site registry, advisories





Hypothetical #2: Landfill

- ✓ Feasibility Study
- ✓ Land Use Determination – Landfill
- ✓ ROD - LUCs
- ✓ Agreement for LUCs with EPA/State
 - Prohibit wells excavation
 - Future conveyance
- ✓ [Optional] Finding of Suitability to Transfer (FOST)
 - LUCs
- ✓ [Optional] Deed – LUCs
 - Enforcement
- ✓ Layering – Physical, Administrative, Other Legal



Hypothetical #3: Conservation Area

- ✓ Feasibility Study
- ✓ Land Use Determination – Conservation
- ✓ ROD - LUCs
- ✓ Agreement for LUCs with EPA/State
- ✓ FOST – LUCs
 - Prohibit wells, excavation
 - Authorized activities
 - Enforcement
 - Future conveyance
- ✓ Layering – Physical, Administrative, Other Legal



MINUTES
RESTORATION ADVISORY BOARD
September 21, 1999 MEETING

1. **ATTENDANCE:**

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
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:

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

Community RAB Members Present:

Richard Durst (Community Co-chair),
Antje Baeumner, Jeffrey Beall, Brian Dombrowski
Frank Ives, Patricia Jones, Bob McCann,
Ken Reimer, Dave Schneider,
Fred Swain, Karen Tackett, Frankie Young-Long,
Henry Van Ness, David Wagner

Community RAB Members Not Present:

Russell Miller, Jan Schneider (excused),
Ray A. Young

Environmental Support Personnel Present:

Marsden Chen, NYS Department of Environmental
Conservation
Mr. Ed Agy, Headquarters, U.S. Army Industrial
Operations Command
Michael Duchesneau, Parsons Engineering Science,
Inc.
Keith Hoddinott, USACHPPM
Kevin Healy, U.S. Army Corps of Engineers,
Huntsville
Janet Fallo, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Project Office,
Construction Division
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
John Cleary, Base Transition Coordinator, SEDA
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Heather Clark, Cornell University
Arthur Hall, Resident, Waterloo
Gregg Tackett, Resident, Romulus
Doug Daeffler, Resident, Waterloo

Visitors:

Chris Kane, Roy F. Weston, Corp.
Roberto Rico, Roy F. Weston, Corp.
Denis Roy, Roy F. Weston, Corp.
Mike McCarty, Roy F. Weston, Corp.
Edwin J. Benton, Roy F. Weston, Corp.

2. Mr. Stephen Absolom introduced our new Commander, LTC Brian K. Frank. LTC Frank provided the opening remarks.

3. Stephen Absolom then asked for introductions of all attending. Mr. Absolom outlined the agenda, then asked if there were any comments or changes to the minutes from the June meeting. There were no changes and the minutes were signed and entered into the record.

4. Mr. Tom Battaglia introduced the guest speaker, Mr. Chris Kane, from Roy F. Weston, Corp., who gave a presentation on the Open Burning Grounds Remediation Project. Mr. Kane gave an overview of all the efforts taken this summer right up to current status.

Some highlights of Mr. Kane's presentation:

History and background:

- SEAD was placed on the National Priority List on July 13, 1989.
- As a result of the Remedial Investigation/Feasibility Study, site remediation is necessary
- The Final ROD was signed in June 1999.
- DOD Explosive Safety Board approved Ordnance and Explosives (OE) Work Plan on July 14, 1999.
- Roy F. Weston Corp. prepared the Remedial Design workplans and EODT Inc. is doing the OE removal effort.
- EODT Inc., prior to remediating the soil, will provide the required explosive clearance.
- Weston constructed soil staging area where the explosive screened material will be placed.

- He showed maps of sites. A copy of his slide presentation is forwarded with these minutes.

- They will be clearing Case I, II, and III soils. Case III is the lowest case soil.

18,000 cu yds. - Case I
12,00 cu yds. - Case II
12,000 cu yds. - Case III

- Approximately 80% complete with Case I screenings.

- Objectives of the project:

EODT sifts I, II, and III soils for UXO
EODT will load and transport to Weston's staging area.

Weston will be collecting and treating water from Reeder Creek next month or so. They are in the process of taking samples from water. Don't have the permit for discharging the treated water.

Q: What happens with soils with failed TCLP criteria?

A: Toxicity Characteristic Leaching Procedure (TCLP) details how much contamination leaches out of a given sample in a certain time. Soils, which fail TCLP, are treated to remove.

- Weston will stockpile, stabilize and dispose of soil.

- TCLP - stockpiled soils only. Weston - dispose case I and II, treated and untreated material.

Q: Where will it be going?

A: We have not awarded the contract to an offsite landfill. When we do, we will award it to the qualified bidder with lowest price. We are still in the process of collecting bids. By November we will have that.

Q: So there is no control as far as who is awarded the contract other than yourselves?

A: Sometimes, the most competitive bidder is not always the one that is qualified. They have to meet all regulatory guidelines. It has to be a landfill that is approved by the State to accept the material. We will have to go through normal procedures before it is awarded.

- To date Weston has had 0 accidents. Have not had any lost time due to accidents. This does not count first aid cases.

- Things done to date:

Within the exclusion zone installed haul road, which connects Open Burning Ground to Weston's staging area.

A 300 X 400-foot staging area has been completed for case I and II soils.

Have constructed storage tanks which are 25% full. Have not treated any water to date.

Have constructed a decontamination pad for access to the support zone. Trucks are washed and decontaminated before coming out. Started constructing stage area for Case III soils which is the largest volume of soils for remediation.

EODT has completed 80% of UXO screening.

Q: Do you expect any unexploded materials?

A: During this project there has been no live ordnance found on site. Prior to EODT's visit, they did find one. That was the basis for moving on from the OBG site. There has been none since starting the project. They have completed 80% of OE clearing and excavation of soils. Has completed excavation of Case I soils screening at berm pads A, B, and D.

- EODT sifts and screens material 8-10 hours on a daily basis. Over 275 locations have been tested and analyzed for total lead. Some excavations of soils leads to continued excavations to reduce contaminant level.

Q: Does that vary in depth?

A: Yes, to date we have excavated down deeper in some cases and some laterally.

Q: Are sampling for TCLP or lead?

A: Total lead only. TCLP test is not until stockpiled.

- In addition to sampling, have sampled over 113 stockpiled samples. EODT screens, hauls to Weston's staging area to unload material. It is loaded daily. Weston segregates piles and samples them. They are covered on a daily basis. EODT has been unloading 1000 cu yds. per day to stockpile at staging area.

Q: Has that material been TCLP tested? Has it passed?

A: Yes, only 8 samples failed TCLP, 1600 cu yds. Not as large a quantity as initially thought. Will continue to sample on a daily basis.

Q: Is there a procedure you do that will reduce contamination?

A: Yes. There are a couple of ways we can do that, either stabilize or solidify soils. We have been working with the Army on that. We need to wait to get more of an idea for the quantity.

Q: Will that be subcontracted or performed yourself?

A: Looking at self-performing.

Q: What is the cross mix of chemicals used?

A: Will do a pilot study to determine most appropriate chemicals. May take soil to a RCRA landfill as hazardous waste, depending on the quantity.

Q: Were the quantities more or lower than expected?

A: Lower than expected. Soil is not failing TCLP as expected--1600 cu yds. to date.

- In addition to sampling, we will be decommissioning 32 ground water monitoring wells. A NYSDEC protocol is followed. Weston has also cleared brush at Creek. Wastewater from decontamination activity is being stored for further treatment.

- Projected:

Complete OE
Clear for Case I, II and III soils and clear low lying hills.
Have to complete excavation for Case I, II and III soils.
Backfill excavations.
Strip 1 ft of soil and sift for OE clearance - 30 acres.

Q: How are they identifying and locating ordnance found?

A: In soils, begin removing, sifting, digging up layers, screening, sorting by hand. Soil goes thru screen to get piece of OE out.

Q: How did get 9 feet down?

A: In picture old OBG did not have raised berm pads. It could be from before the berms and pads were added afterwards.

- Other projected actions:

Weston - excavate Reeder Creek sediments.
Complete samples for Case I, Case II and Case III soils.

Q: If there is lead in Creek, has anyone tested at the mouth of the creek.

A: Was based on samples in the Remedial Design document. That was sampled by Parsons. Steve Absolom added we did not sample at the mouth. We have gone down gradient on other projects. Sampled downgradient until we didn't find contamination and then stopped.

Q: How far away from lake are you?

A: Two to three miles.

- Other projected items:

Weston also has to perform ground sampling every 10,000 linear feet within perimeter limits (depth of 1 ft) to define lateral/vertical extension of existing soil cover concentrations.

Stabilize 1600 cu yds. of soil (failing TCLP).

Transport and dispose Case I and II soils to facility. To date, not chosen yet.

Sample haul road.

Characterize remaining debris from site.

Perform final grading and site restoration.

Install seven new monitoring wells one up gradient and six down gradient.

- Projected Dates:

Case I, II and III excavations should be completed by the end of November 1999.

Site Wide excavation to a depth of one foot for OE clearance by Feb 2000. Winter weather can affect that work.

Installation of new groundwater monitoring wells by March 2000.

Site Restoration by April/May 2000

- Main focus:

- Remove soil for OE clearance

- Weston has a cost plus contract with the Army, which allows for flexibility.

- Total project is 30-35% complete as of this date.

Q: Case III soils stay right there?

A: Depending on what they find, may use it for backfill and cover area with material. May use in other locations. Will depend on results of soil sampling.

5. Mr. Absolom then turned the meeting over for open discussion and updated the group on various issues

- Prison - Ahead of schedule. Department of Corrections has issued and solicited for new sewage plant to support Romulus and SEDA. They are in the process of awarding contract. They are in the process of preparing

Right of Entry adjacent to the existing one. The new plant should be up on line by June 2000, prior to the opening of the facility.

Q: What about municipal water system?

A: As part of prison facility building new water storage tank.

- Housing - In August we entered into lease with IDA for all of the family housing on base along Route 96 and the lake. IDA subleased to ASPEN who will eventually purchase the housing. On the lake they are getting ready for occupancy and have leased some of them. They are currently working on 30 units in Elliot Acres.

Q: Was that based on bid?

A: It was based on bid. Once it's sold, the public will know the details.

- The Deed has been approved and is being circulated in the Pentagon for approval and signatures within the next couple of weeks. IDA will own that property and will continue to transfer to ASPEN.

- SEAD 5 - Sludge Pile referred to in the newsletter. This project and decision document are a result of past 60's/70's and putting in one location. These have to be treated as a CERCLA site from elevated metals. Doing a removal action. Not prepared to have a public meeting yet. Plans have to be developed.

- KidsPeace - A not-for-profit organization that is taking over the North Depot Area. Lease was signed in mid-June. They are in the process of preparing bid documents for the renovation of facilities. They expect to go out for bids and make awards around the beginning of November. They plan to renovate buildings for kids coming in late spring early summer timeframe. They have a full time employee. They have hired a maintenance supervisor full time to begin in October.

Q: What entrance will they be using and how affect deer population?

A: They will be using Route 96A. They will be closing the gate on the North End. The campus is self-contained.

Q: Will they refurbish bowling alleys, etc.

A: They will be preparing the administrative buildings first.

Q: Is this the same group you were talking about before, the same one from Pennsylvania?

A: Yes, it is a facility for troubled youths that have not been adjudicated. They might have physical/mental problems, etc. Pat Jones from IDA added that they will have a job fair December/January timeframe. They expect to hire initially 200-300 people. When it goes to full capacity, could be up to 600 people with 600 children--they have a 1-1 ratio.

- ATSDR: As of today they are two weeks away from releasing their report for public comment. They are prepared to come up and present to the RAB and the public. Steve proposed to the group to try to have release of document on a Monday and present it to Tuesday night RAB meeting. We won't get a pre-brief but try to get a briefing as soon as it is released. It may mean changing the date of the next RAB meeting.

Q: We won't get a pre-released document?

A: When it is ready for public comment it has to be released to everyone at the same time.

Q: How would they release it?

A: They would do a Public Notice in the paper. It will say where the documents will be placed. They have agreed to send each member of the RAB a copy.

Steve had asked if the group would want them to brief as close to the release date? The next RAB meeting will be 19 October. They release it on the 18th and brief us on the 19th. The consensus was yes. A letter will be sent as soon as this is known.

6. Mr. Absolom opened the floor for any future agenda items.

One individual requested feedback on the landfill fire. Some feel that individuals don't want all of Seneca's waste to go to Seneca Meadows--why not some other landfill.

Some discussion ensued regarding materials that are sent to the landfill and the fire itself.

It was decided that one agenda item would be to have someone explain the guidelines for contracting a landfill.

5. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members will be announced due to possible Public Health Assessment meeting in place of RAB.

Respectfully submitted,

Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:

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

RICHARD A. DURST
Community Co-Chair

**MINUTES
RESTORATION ADVISORY BOARD
November 16, 1999 MEETING**

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Government RAB Members Not Present:

Julio Vazquez, U.S. Environmental Protection
Agency (representing Carla Struble) (excused)
Dan Geraghty, NYS Department of Health (excused)
James Quinn, NYS Department of Environmental
Conservation (excused)

Community RAB Members Present:

Jeffrey Beall, Brian Dombrowski, Bob McCann,
Ken Reimer, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Frankie Young-Long,
David Wagner

Community RAB Members Not Present:

Richard Durst (Community Co-chair) (excused),
~~Antje Baujmner (excused), Frank Ives,~~
Patricia Jones (excused), Russell Miller,
Henry Van Ness, Ray A. Young (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.
Keith Hoddinott, USACHPPM
Kevin Healy, U.S. Army Corps of Engineers,
Huntsville
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Enroth, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Michelle Brock, U.S. Army Corps of Engineers,
New England District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Heather Clark, Cornell University
Arthur Hall, Resident, Waterloo
Neil Chaffee, Ithaca Journal

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the September meeting. There were no changes and the minutes will be signed and entered into the record at the next meeting since Dr. Durst was not present. Mr. Absolom noted that there were no regulatory personnel present at the meeting due to other priorities and maternity leave.

4. Mr. Michael Duchesneau gave a presentation on the projects affecting the north end parcel that is going to be transferred to KidsPeace, a not-for-profit facility for youths with either physical or mental disabilities. They would like this transfer to occur by the first of the year. He basically wanted to show how we got to where we are and show where we are in the process.

Some highlights of Mr. Duchesneau's presentation are:

As far as results of recommendations for these sites, EPA and state have not fully reviewed.

CERCLA establishes essential process. EPA is the watchdog. Facility is listed on NPL.

SCIDA raised this priority for army schedule.

Federal Facility Agreement (FFA) is established between EPA, the State of NY, and the Army. It establishes the process and procedure. It is the

governing document for all decisions. It requires evaluations of site.

Army proposed classifications of a SWMU as problem or no problem site. Once identified as a no further action site, FFA list in the NY State Part 373 RCRA permit.

A "No Action SWMU" is a site where there has been no release of hazardous substances, pollutants or contamination. It does not pose a threat to the public health, welfare, or the environment.

At the North End all sites but one are in the no further action group.

Q: If transfers should occur and they find there is contamination, what is the Army's responsibility?

A: If something is found we guarantee we will come back and remediate that site. We will not pay owner for losses associated with that.

Q: What is timetable?

A: We want to have FOST available for public comment on December 1. Agencies will be able to review document. The agencies want to facilitate the transfer as quickly as they can. They don't want to just sign off if there is an issue associated with it. Steve Absolom also added he met with the regulators in Albany on November 4 and talked about the process for this. They are working together to make this happen. They are reviewing the document.

Q: Do you have an idea of the acreage the KidsPeace plans to use?

A: They have plans to use all acreage. They will demolish some of the buildings. The boiler house is one that is targeted for demolishing. They are putting in a new heating system.

Q: Is the demolition their responsibility?

A: Yes, they have to pay for all that.

Q: What is the location of the ice rink?

A: It is between tennis courts and the access road. The Fire Department would flood this over in winter for use as an ice rink.

Q: How about operating permits?

A: Sewage treatment plant permit has to be transferred. Air permits - cap by rule. Don't have one. Not in original to warrant any emissions.

Up to this point, we identified SWMU's ranked to look at worst first. When BRAC was established it changed the priorities. Transferring property was the primary and making sure sites that are going to be transferred are clean.

The other thing that happened is at SEDA the RCRA permit was not necessary because of BRAC. At the time permit was withdrawn. There is nothing to put the no further action sites because there was no permit. A decision document has been prepared and is being reviewed by the Army. Mr. Duchesneau briefly summarized what is in the document.

The Environmental Baseline Survey (EBS) is another result of BRAC. It is required for base closure. It was completed in October 1996. On the North End identified six sites, SEADS 123a, b, c, d, e, f. The EBS another resurvey collected documents and did the reviews. It came up with a list which included SWMUS.

Five additional sites are added as "No Further Action" -

SEAD 7 - Shale Pit

SEAD 18 - Bldg 709, Classified Document

Incinerator

SEAD-21 - Sewage Treatment Plant No. 715

SEAD-29 - Bldg 732 - 500 gal UST Waste Oil Tank and Stained Soil. Had stained soil, tank and oil removed.

SEAD-32, Bldg 718 - 2 used Oil Tanks in place. Conducted small investigation found low levels of TPH in soil

Q: What is TPH

A: Total Petroleum Hydrocarbon (TPH) gives the big picture of whether there is a presence of petroleum or oil.

Q: What are the state limits for groundwater?

A: The State of New York doesn't have established numbers for TPH#. Go to next step to see if material has volatile organic compounds (VOCs) or Semi-VOCs. State has established regulatory levels for VOCs and Semi-VOCs - found in TPH.

SEAD 123a and 123b - found no volatiles or semi-volatiles above TAGM (Technical Assistance Guidance Memorandum). Had some minor staining but not a lot.

SEAD 123c Bldg 747 - The EBS indicated that acid materials were stored there. It was closed in 1998 IAW NY State requirements.

SEAD 123d - Area West of Bldg 715 - There were supposedly suspicious mounds. They did test pits and collected two samples. Found volatiles but very low levels and are not concerning.

SEAD 123e - A rumored DDT Burial at Ice Rink.

Did a Geophysical survey to identify if any drums were buried. Only thing found was steel water pipe.

SEAD 123f - Mound north of Post 3 was another suspicious mound. They collected soil samples and didn't find anything of concern.

SEAD 21 - Sewage Treatment Plant Justification for NFA Operating facility regulated under State Pollutant Discharge Elimination System (SPDES). Already have another agency monitoring work done here. It is non-hazardous waste. No oil spills, dead vegetation. Sludge was removed from facilities for drying.

SEADs 29, 32, 61, 123b, 123c - All tank sites that are managed by SEDA Tank Management Program. No hazardous waste stored here. Tanks have been closed, removed or are in compliance with current regulations. Tanks left in place for use by KidsPeace.

SEAD 18 - Classified documents incinerator. Only incinerated paper here. Its use was restricted to authorized personnel only. Ash was properly disposed and passed EP toxicity test.

SEAD 7 - Shale Pit is a controlled area. Couldn't just dispose of stuff without knowledge of depot. Mostly road base material. Inert construction debris placed in pit. Exempt from hazardous waste regulation in the State of New York.

SEAD 123a - Indoor Firing Range - removal complete during decommissioning in 1992. At that time SEDA measured walls for presence of lead. There was lead in bullets. Still lead there. Embedded in wall. Army believes no need to do anything unless use site for anything else as long as use of that facility does not involve children.

SEAD 123d&f Mounds - No observable contamination or buried drums present.

SEAD 123e Rumored DDT Burial - Covers a 200 X 400-foot area. Collected soil samples and found no evidence of DDT Burial, no volatiles, no semi-volatiles, no TPH, no PCBs nor pesticides and no metals above TAGM levels.

In Summary - The No Further Action (NFA) recommendations were based on

- Many sites are managed under existing programs.
- Stored materials were not wastes.
- No evidence of buried hazardous materials.
- Access to Areas were restricted and inspected.
- Releases closed under existing programs. They were controlled and cleaned up.
- There is no evidence of threat to human health or environment.

As a result conclusion put in a decision document why NFA has dropped from this consideration to allow the transfer from army to IDA to KidsPeace. That document will be reviewed by EPA to allow the transfer to go ahead.

Other questions generated:

Q: What about surface shale at North End?

A: It was thought that cans were buried there.

When found anomaly found water line. Sampled test pit area. Up until 1985 shale pit excavated shale for roadbeds and fill material. Stopped using it for that and started backfilling with dirt. Pavement fenced off and controlled access. Steve Absolom added on north end sites we did a lot a few years ago. Looked at worst first. It is coincidental that priority is high enough and we want to prepare decision document. Change of BRAC created need to close out sooner.

In transfer of property we tell of adjacent property. How determine it is not hazard to human health and environment. Will work that with the agency.

5. Mr. Absolom opened the floor for open discussion.

- He spoke about ATSDR being here last month to present their Public Health Assessment. The comment period is now closed. They will prepare a final assessment. As new information comes they will update it accordingly.

- He proposed that with the December RAB meeting being close to Christmas to postpone and the next meeting would be on January 18th. Everyone agreed.

6. The meeting was adjourned at approximately 8:15 p.m. The next RAB meeting with both government and community members will be on January 18, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

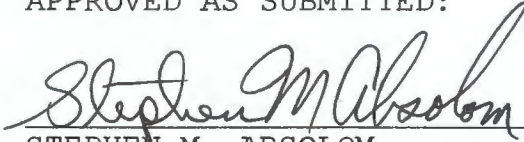


LAURA J. SPOSATO

Recording Secretary

Enclosure

APPROVED AS SUBMITTED:



STEPHEN M. ABSOLOM

U.S. Army Co-Chair



RICHARD A. DURST

Community Co-Chair

*U.S. Army Corps of Engineers
New York District
Seneca Army Depot Activity
Romulus, NY*

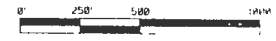
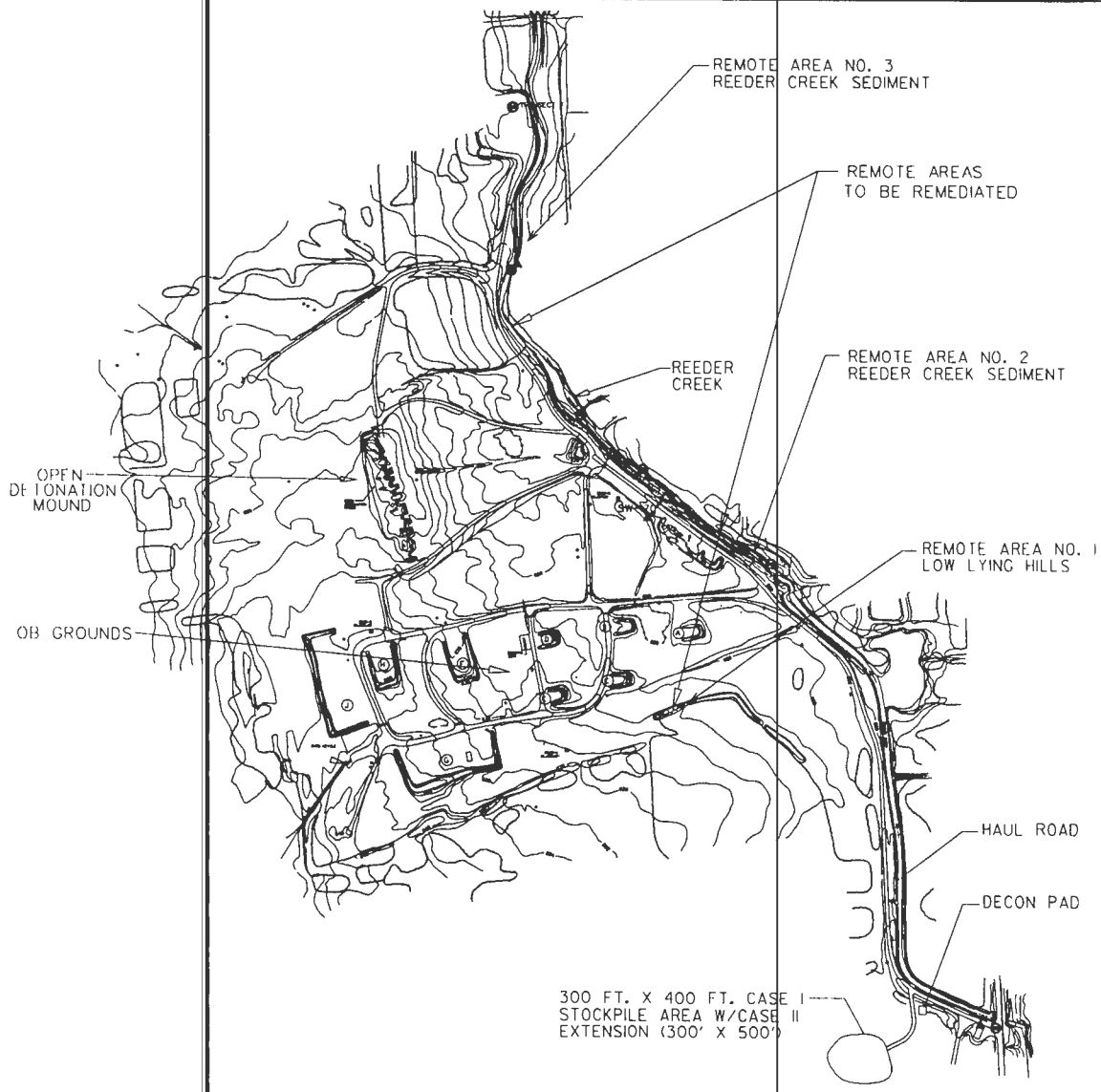
Background

- The Open Burning Grounds was placed on the Federal National Priorities List on July 13, 1989
- Remedial actions are to be performed in accordance with the Comprehensive Environmental Response Compensation and Liabilities Act (CERCLA)
- The Army completed the Remedial Investigation Report in September 1994 and the Feasibility Study Report in March 1996
- The RI/FS concluded that specific remediation for lead contaminated soils and lead/copper sediments is required
- The Final Record of Decision (ROD) defining the Selected Remedy was signed June 1999
- The Department of Defense Explosives Safety Board (DDSB) approval was received for OE clearance on 14 July 1999

Introduction

- Roy F. Weston, Inc. is under contract with the U.S. Army Corps of Engineers under Task Order No. 0013 (Contract No. DACW-33-95-D0004)
 - Contract Vehicle (Cost-Reimbursable Task Order)
- The OB Grounds Remediation is being performed in accordance with the ROD and the Remedial Design (Parsons Final Section C – Technical Specifications – August 1998)
- The Revised Draft Project Work Plan, Health and Safety Plan, and the Sampling and Analysis Plan define Weston's technical approach in accordance with State, Federal, and local regulations
- The Remedial Design document combined with EODT's Work Plan for the Ordnance and Explosives Removal Action, and Weston's Project Work Plans for Soil and Sediment Remediation address the Remedial Action for the OB Grounds

3: \DESIGN\DWG\ACOE\SENECA\ SITEPLAN.DWG PLOTTED ON 20SEP1999 AT 11:38 BY CAD



SITE PLAN

SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NEW YORK

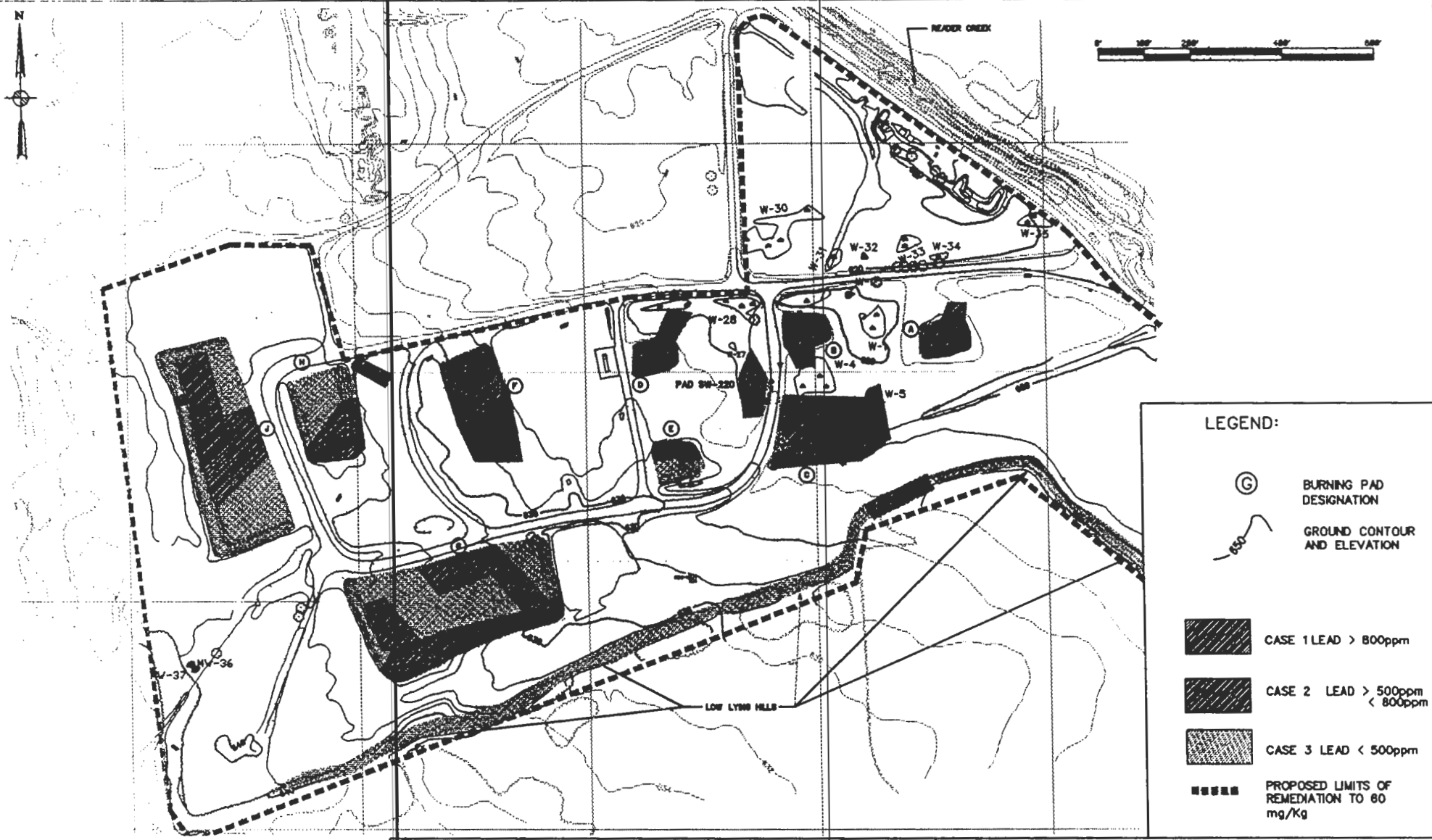
ROY F. WESTON, INC.

WESTON

MANAGERS DESIGNERS/CONSULTANTS

DRAWN JBT	DATE SEPT 99	DES. ENG.	DATE	W. O. NO. 1324
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REMEDIAL ACTION AT THE BURNING GROUNDS
 SENECA ARMY DEPOT ACTIVITY (SEDA)
 ROMULUS, NEW YORK

DEPARTMENT OF THE ARMY
 NEW YORK DISTRICT
 CORPS OF ENGINEERS
 FORT DRUM, NEW YORK



PROPOSED LIMITS OF EXCAVATION
 CASE I, II, AND III

WESTON
 MANAGERS DESIGNERS/CONSULTANTS
 MANCHESTER NEW HAMPSHIRE

DRAWN	JBT
DATE	SEP 99
FIGURE NO.	2

Project Objectives

- EODT to excavate and sift Case I, II, and III soil to identify, remove, and dispose of Ordnance and Explosives (OE) material from the Open Burning Grounds for clearance purposes
- EODT to Load and transport Case I, II, and III soil (lead contaminated) from the OB Grounds to the stockpile staging area for characterization and disposal by WESTON
- Excavate and remove contaminated sediments from Reeder Creek
- Collect, treat and discharge wastewater in accordance with NYSDEC permit limits

Project Objectives (Cont'd)

- Perform post excavation confirmatory sampling, grid/perimeter sampling, and stockpile characterization sampling to meet remedial action cleanup criteria
- Stabilize soils that fail TCLP criteria
- Dispose of Case I and II (treated and untreated) material offsite
- Remove and/or cover surface soil within the OB Grounds containing concentrations of lead greater than 60 mg/kg
- Decommission 31 groundwater monitoring wells and install 7 new wells
- Perform the project with zero accidents

Safety Is a Job Requirement



**WANT THE US ARMY CORPS OF ENGINEERS
UNIFORM NEW YORK DISTRICT**

**BILLARD BUILDING CORPORATION
CORPORATE ENGINEER**

**BOOTH ARMY DEPOT ACTIVITY
ENGINEER NEW YORK**

INDUSTRIAL ENGINEER

WESTON

CONSTRUCTION

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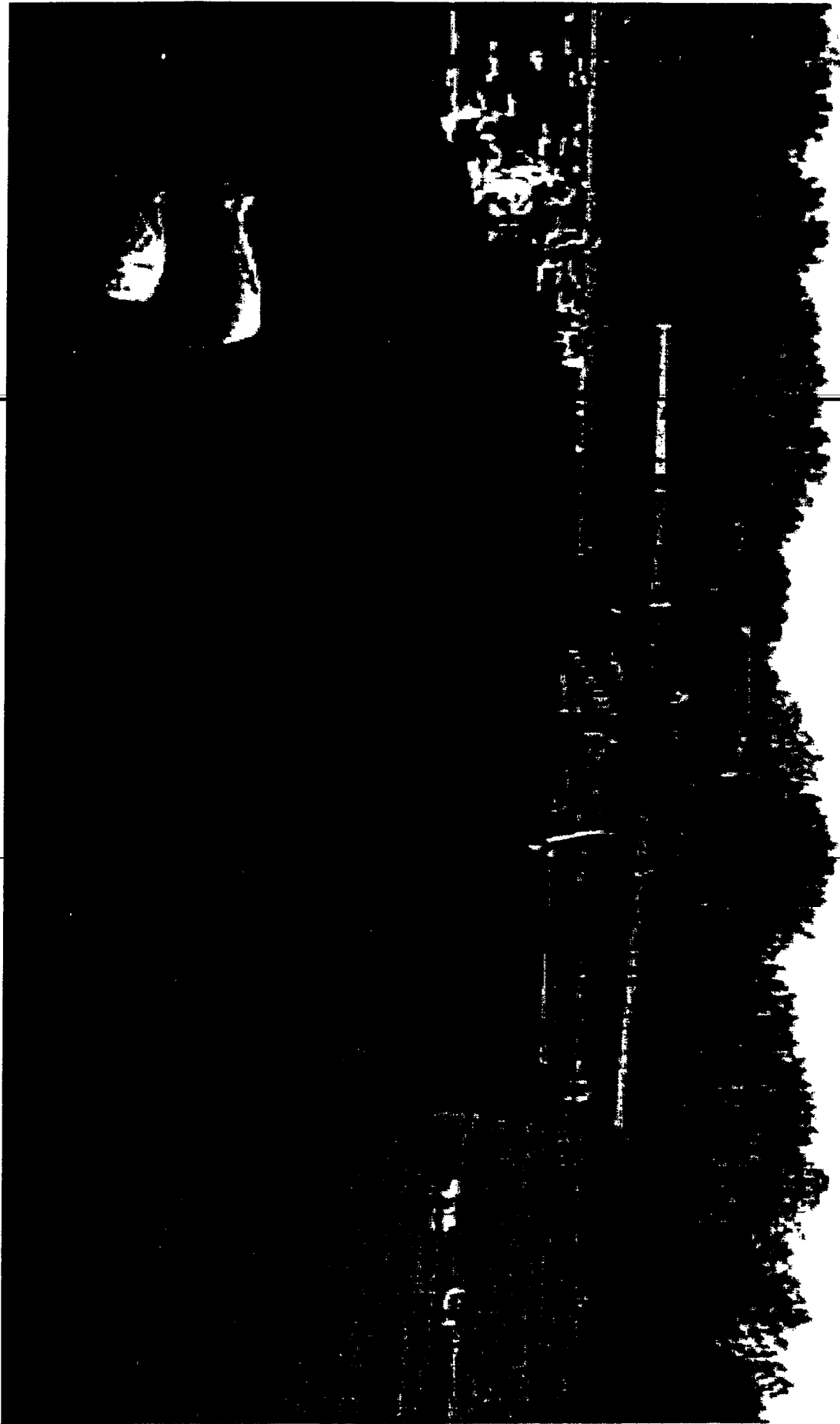
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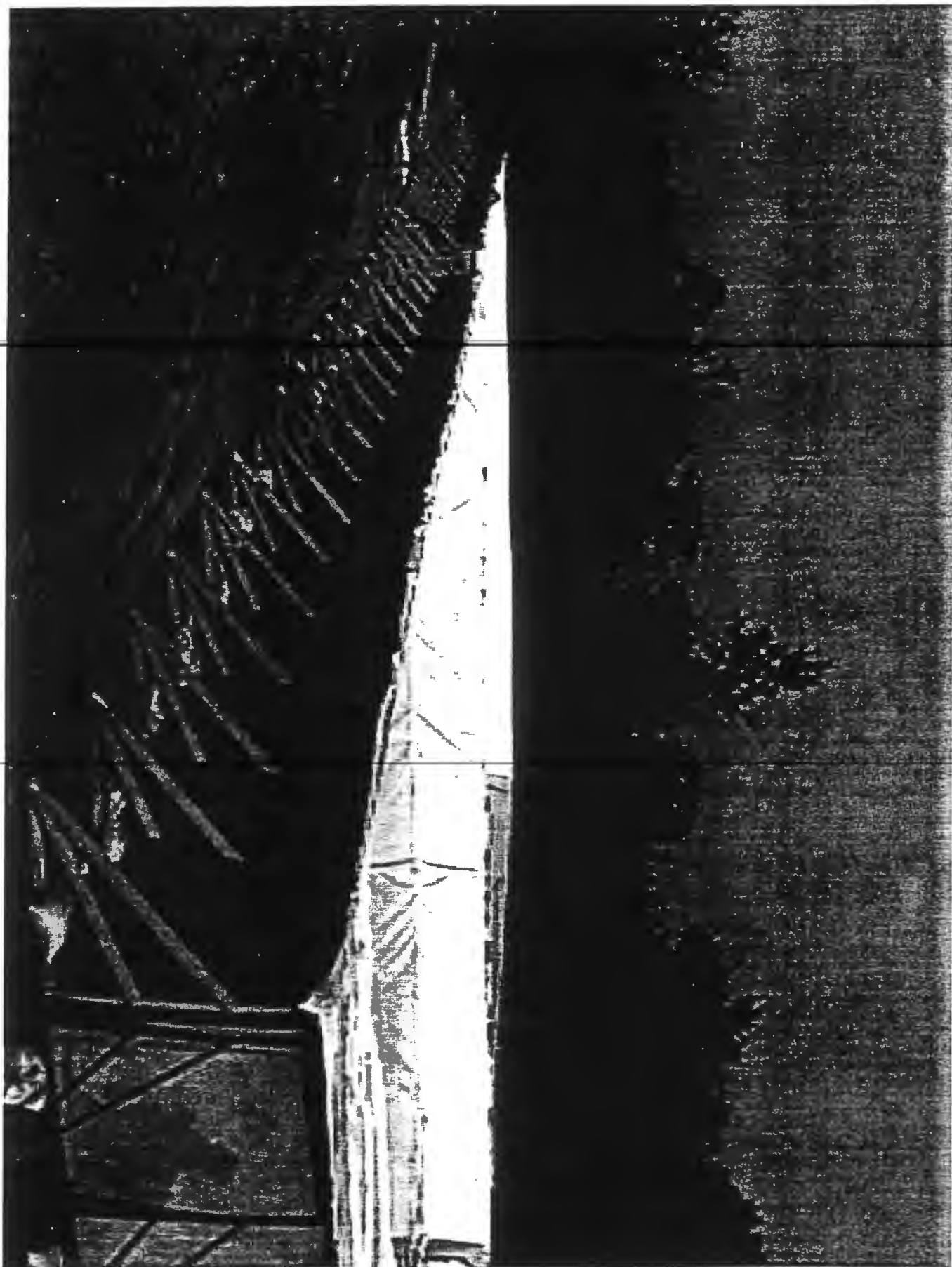
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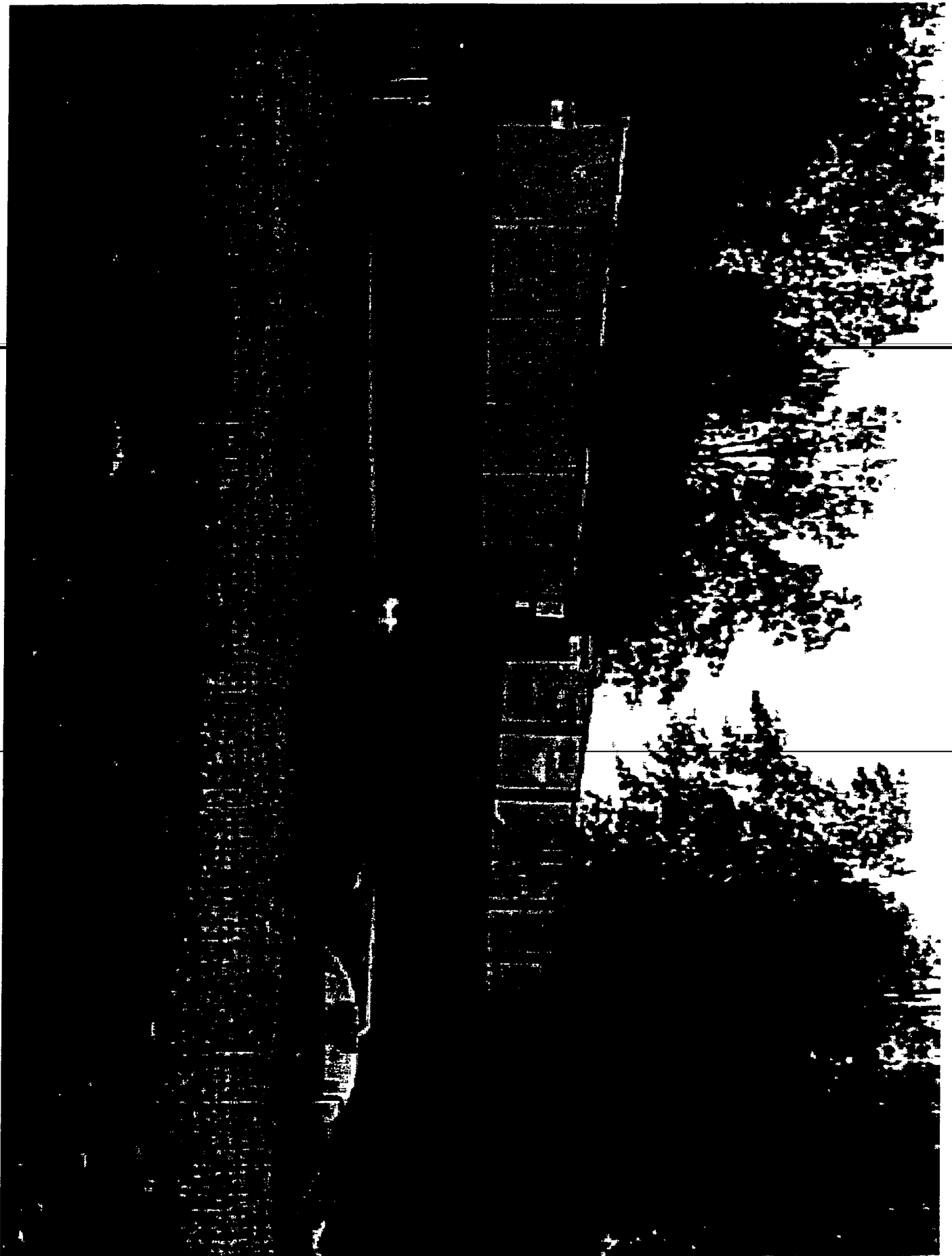
ENGINEER

Current Status

- Exclusion zone:
 - Installed 285 ft. haul road
 - Installed a 300 ft. x 400 ft. lined staging area for Case I and II soils
 - Assembled 2-20 mil reinforced polyethylene lined 155,000 gal. modular storage tanks
 - Installed 20 ft. x 50 ft. decon pad for WESTON and EODT equipment
 - Started construction of Case III soil stockpile extension (300 x 400 ft.)
- EODT has completed approximately 80% of the planned UXO screening at burn pad and berm areas A - J (approx. 22,600cy)









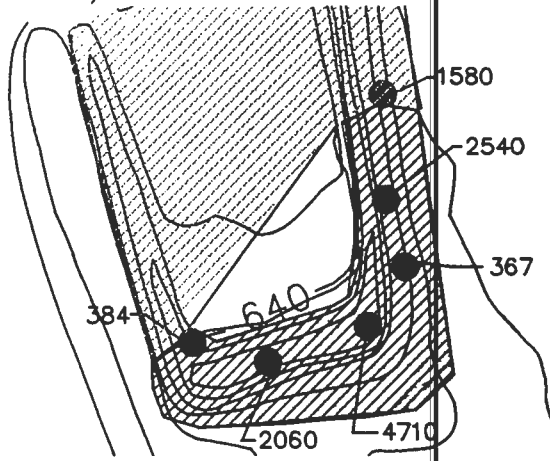
Current Status (Cont'd)

- EODT has completed Case I soil screening at burn pads A, B, and D
- A total of 275 post excavation confirmatory samples have been collected and analyzed for total lead
- Over 113 stockpile samples have been collected and analyzed for TCLP metals (8-200 cy piles failing TCLP)
- A total of 32 groundwater monitoring wells have been decommissioned
- Clearing activities were completed for Reeder Creek excavation (1-1100 ft. and 1-1050 ft. section)
- Wastewater from decontamination activities is being stored for future treatment

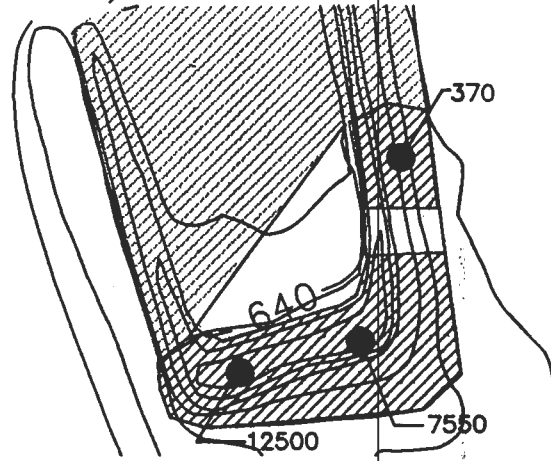


G:\DESIGN\DWG\ACOE\SENECA\ SLIDE-1.DWG PLOTTED ON 15SEP1999 AT 15:33 BY CAD

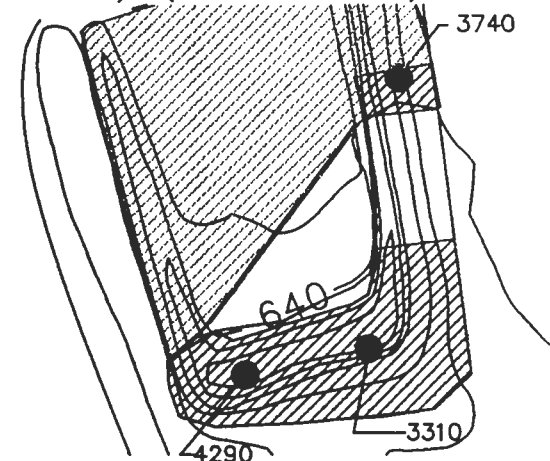
CASE I
BERM
(REMOVED)



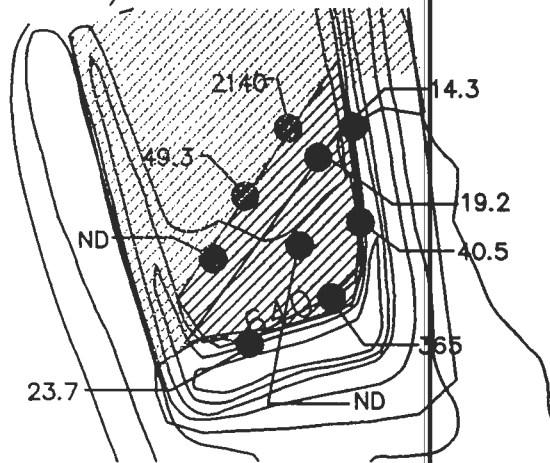
CASE I
SURFACE SOIL BENEATH BERM
(CUT 1 FT.)



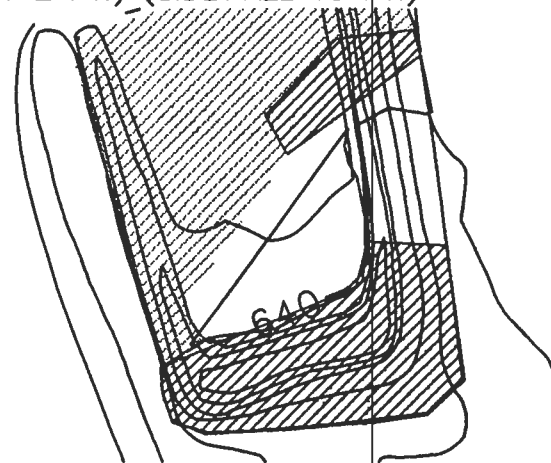
CASE I
SOIL BENEATH BERM
(CUT 1 FT.) (SIDEWALL 1 FT.)



CASE III
PAD
(CUT 4 FT.)



CASE IV (PROPOSED)
SURFACE SOIL BENEATH BERM
(CUT 2 FT.) (SIDEWALL 10 FT.)



REMEDIAL ACTION AT THE BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NEW YORK

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT
CORPS OF ENGINEERS
FORT DRUM, NEW YORK



PAD & BERM H
CASE I, SOIL EXCAVATION LIMITS AND
CONFIRMATORY SAMPLE RESULTS

WESTON
MANAGERS DESIGNERS/CONSULTANTS
MANCHESTER NEW HAMPSHIRE

DRAWN JBT
DATE SEP 9
FIGURE NO. 3





Projected Activities

■ EODT

- Complete OE clearance for Case I, II, and III soils and Low Lying Hills
- Complete excavation of Case I soil (approx. 6000 cy)
- Excavate Case II soil (approx. 1200 cy)
- Excavate Case III soil (approx. 12,000 cy)
- Backfill excavations
- Strip 1 ft. of soil site wide for OE clearance (approx. 41,500 cy)

Projected Activities (Cont'd)

■ WESTON

- Excavate Reeder Creek sediments and complete confirmatory sampling for Case I, II, and III soils
- Perform perimeter sampling every 200 l.f. to determine limits of lead removal to 60 mg/kg
- Perform confirmatory grid sampling every 10,000 sf within perimeter limits (depth of 1 ft.) to define the lateral/vertical extent of existing soil cover concentrations (max 60 mg/kg)
- Stabilize 1600+ cy of soil (failing TCLP)
- Transport and dispose of Case I and II soil (treated and untreated) as RCRA Subtitle D Non-hazardous material. No disposal site has been chosen at this point for Case I and II soil
- Sample haul roads and staging areas for lead (remediate as necessary)
- Characterize/remove all remaining debris from site (PPE, liner material, construction debris, etc.)
- Final grade/restore site
- Install seven new monitoring wells at groundwater divide (1 upgradient, & 6 down gradient)

Schedule

- Projected completion dates for target activities:
 - Case I, II, and III excavations (November 1999)
 - Reeder Creek excavation (November 1999)
 - Sitewide excavation to a proposed depth of 1 ft. for OE clearance (February 2000)
 - Installation of new groundwater monitoring wells (March 2000)
 - Site restoration (April/May 2000)

Conclusion

- The entire site will be safely screened for OE clearance
- Case I and II material will be completely removed, characterized, stockpiled, and disposed of in accordance with the Technical Specifications. Case III material will be removed and stockpiled.
- WESTON is prepared to address and implement actions as they relate to state and federal agency comments to support the current remedial effort at the Seneca Army Depot Open Burning Grounds Remediation as approved by the U.S. Army Corps of Engineers (under existing Contract No. DACW33-95-D0004)

Restoration Advisory Board Meeting Agenda

**February 15, 2000
NCO Club**

- 7:00** **Welcome**
LTC Brian K. Frank
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** **Unexploded Ordnance (UXO) Engineering
Evaluation/Cost Analysis (EE/CA)**
Mr. Kevin Healy
U.S. Army Corps of Engineers, Huntsville
-
- 7:55** **Break**
- 8:05** **Unexploded Ordnance (UXO) Igloo Area Investigation**
Mr. Kevin Healy
U.S. Army Corps of Engineers, Huntsville
- 8:35** **Open Discussion**
- 9:00** **Adjournment**

MINUTES
RESTORATION ADVISORY BOARD
November 16, 1999 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Government RAB Members Not Present:

Julio Vazquez, U.S. Environmental Protection
Agency (representing Carla Struble) (excused)
Dan Geraghty, NYS Department of Health (excused)
James Quinn, NYS Department of Environmental
Conservation (excused)

Community RAB Members Present:

Jeffrey Beall, Brian Dombrowski, Bob McCann,
Ken Reimer, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Frankie Young-Long,
David Wagner

Community RAB Members Not Present:

Richard Durst (Community Co-chair) (excused),
Antje Baujmmner (excused), Frank Ives,
Patricia Jones (excused), Russell Miller,
Henry Van Ness, Ray A. Young (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.
Keith Hoddinott, USACHPPM
Kevin Healy, U.S. Army Corps of Engineers,
Huntsville
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Enroth, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Michelle Brock, U.S. Army Corps of Engineers,
New England District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Heather Clark, Cornell University
Arthur Hall, Resident, Waterloo
Neil Chaffee, Ithaca Journal

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the September meeting. There were no changes and the minutes will be signed and entered into the record at the next meeting since Dr. Durst was not present. Mr. Absolom noted that there were no regulatory personnel present at the meeting due to other priorities and maternity leave.

4. Mr. Michael Duchesneau gave a presentation on the projects affecting the north end parcel that is going to be transferred to KidsPeace, a not-for-profit facility for youths with either physical or mental disabilities. They would like this transfer to occur by the first of the year. He basically wanted to show how we got to where we are and show where we are in the process.

Some highlights of Mr. Duchesneau's presentation are:

As far as results of recommendations for these sites, EPA and state have not fully reviewed.

CERCLA establishes essential process. EPA is the watchdog. Facility is listed on NPL.

SCIDA raised this priority for army schedule.

Federal Facility Agreement (FFA) is established between EPA, the State of NY, and the Army. It establishes the process and procedure. It is the

governing document for all decisions. It requires evaluations of site.

Army proposed classifications of a SWMU as problem or no problem site. Once identified as a no further action site, FFA list in the NY State Part 373 RCRA permit.

A "No Action SWMU" is a site where there has been no release of hazardous substances, pollutants or ~~contamination. It does not pose a threat to the public~~ health, welfare, or the environment.

At the North End all sites but one are in the no further action group.

Q: If transfers should occur and they find there is contamination, what is the Army's responsibility?

A: If something is found we guarantee we will come back and remediate that site. We will not pay owner for losses associated with that.

Q: What is timetable?

A: We want to have FOST available for public comment on December 1. Agencies will be able to review document. The agencies want to facilitate the transfer ~~as quickly as they can. They don't want to just sign~~ off if there is an issue associated with it. Steve Absolom also added he met with the regulators in Albany on November 4 and talked about the process for this. They are working together to make this happen. They are reviewing the document.

Q: Do you have an idea of the acreage the KidsPeace plans to use?

A: They have plans to use all acreage. They will demolish some of the buildings. The boiler house is one that is targeted for demolishing. They are putting in a new heating system.

Q: Is the demolition their responsibility?

A: Yes, they have to pay for all that.

Q: What is the location of the ice rink?

A: It is between tennis courts and the access road. The Fire Department would flood this over in winter for use as an ice rink.

Q: How about operating permits?

A: Sewage treatment plant permit has to be transferred. Air permits - cap by rule. Don't have one. Not in original to warrant any emissions.

Up to this point, we identified SWMU's ranked to look at worst first. When BRAC was established it changed the priorities. Transferring property was the primary and making sure sites that are going to be transferred are clean.

The other thing that happened is at SEDA the RCRA permit was not necessary because of BRAC. At the time permit was withdrawn. There is nothing to put the no further action sites because there was no permit. A decision document has been prepared and is being reviewed by the Army. Mr. Duchesneau briefly summarized what is in the document.

The Environmental Baseline Survey (EBS) is another result of BRAC. It is required for base closure. It was completed in October 1996. On the North End identified six sites, SEADS 123a, b, c, d, e, f. The EBS another resurvey collected documents and did the reviews. It came up with a list which included SWMUS.

Five additional sites are added as "No Further Action" -

SEAD 7 - Shale Pit

SEAD 18 - Bldg 709, Classified Document

Incinerator

SEAD-21 - Sewage Treatment Plant No. 715

SEAD-29 - Bldg 732 - 500 gal UST Waste Oil Tank and Stained Soil. Had stained soil, tank and oil removed.

SEAD-32, Bldg 718 - 2 used Oil Tanks in place. Conducted small investigation found low levels of TPH in soil

Q: What is TPH

A: Total Petroleum Hydrocarbon (TPH) gives the big picture of whether there is a presence of petroleum or oil.

Q: What are the state limits for groundwater?

A: The State of New York doesn't have established numbers for TPH#. Go to next step to see if material has volatile organic compounds (VOCs) or Semi-VOCs. State has established regulatory levels for VOCs and Semi-VOCs - found in TPH.

SEAD 123a and 123b - found no volatiles or semi-volatiles above TAGM (Technical Assistance Guidance Memorandum). Had some minor staining but not a lot.

SEAD 123c Bldg 747 - The EBS indicated that acid materials were stored there. It was closed in 1998 IAW NY State requirements.

SEAD 123d - Area West of Bldg 715 - There were supposedly suspicious mounds. They did test pits and collected two samples. Found volatiles but very low levels and are not concerning.

SEAD 123e - A rumored DDT Burial at Ice Rink. Did a Geophysical survey to identify if any drums were buried. Only thing found was steel water pipe.

SEAD 123f - Mound north of Post 3 was another suspicious mound. They collected soil samples and didn't find anything of concern.

SEAD 21 - Sewage Treatment Plant Justification for NFA Operating facility regulated under State Pollutant Discharge Elimination System (SPDES). Already have another agency monitoring work done here. It is non-hazardous waste. No oil spills, dead vegetation. Sludge was removed from facilities for drying.

SEADs 29, 32, 61, 123b, 123c - All tank sites that are managed by SEDA Tank Management Program. No hazardous waste stored here. Tanks have been closed, removed or are in compliance with current regulations. Tanks left in place for use by KidsPeace.

SEAD 18 - Classified documents incinerator. Only incinerated paper here. Its use was restricted to authorized personnel only. Ash was properly disposed and passed EP toxicity test.

SEAD 7 - Shale Pit is a controlled area. Couldn't just dispose of stuff without knowledge of depot. Mostly road base material. Inert construction debris placed in pit. Exempt from hazardous waste regulation in the State of New York.

SEAD 123a - Indoor Firing Range - removal complete during decommissioning in 1992. At that time SEDA measured walls for presence of lead. There was lead in bullets. Still lead there. Embedded in wall. Army believes no need to do anything unless use site for anything else as long as use of that facility does not involve children.

SEAD 123d&f Mounds - No observable contamination or buried drums present.

SEAD 123e Rumored DDT Burial - Covers a 200 X 400-foot area. Collected soil samples and found no evidence of DDT Burial, no volatiles, no semi-volatiles, no TPH, no PCBs nor pesticides and no metals above TAGM levels.

In Summary - The No Further Action (NFA) recommendations were based on

- Many sites are managed under existing programs.
- Stored materials were not wastes.
- No evidence of buried hazardous materials.
- Access to Areas were restricted and inspected.
- Releases closed under existing programs. They were controlled and cleaned up.
- There is no evidence of threat to human health or environment.

As a result conclusion put in a decision document why NFA has dropped from this consideration to allow the transfer from army to IDA to KidsPeace. That document will be reviewed by EPA to allow the transfer to go ahead.

Other questions generated:

Q: What about surface shale at North End?

A: It was thought that cans were buried there.

When found anomaly found water line. Sampled test pit area. Up until 1985 shale pit excavated shale for roadbeds and fill material. Stopped using it for that and started backfilling with dirt. Pavement fenced off and controlled access. Steve Absolom added on north end sites we did a lot a few years ago. Looked at worst first. It is coincidental that priority is high enough and we want to prepare decision document. Change of BRAC created need to close out sooner.

In transfer of property we tell of adjacent property. How determine it is not hazard to human health and environment. Will work that with the agency.

5. Mr. Absolom opened the floor for open discussion.

- He spoke about ATSDR being here last month to present their Public Health Assessment. The comment period is now closed. They will prepare a final assessment. As new information comes they will update it accordingly.

- He proposed that with the December RAB meeting being close to Christmas to postpone and the next meeting would be on January 18th. Everyone agreed.

6. The meeting was adjourned at approximately 8:15 p.m. The next RAB meeting with both government and community members will be on January 18, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO

Recording Secretary

Enclosure

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
January 18, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Julio Vazquez, U.S. Environmental Protection
Agency

Dan Geraghty, NYS Department of Health
James Quinn, NYS Department of Environmental
Conservation

Community RAB Members Present:

Richard Durst, Community Co-Chair
Antje Baeumner, Bob McCann,
Ken Riemer, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Henry Van Ness,
David Wagner

Community RAB Members Not Present:

Jeffrey Beall (excused), Brian Dombrowski (excused),
Frank Ives (excused), Patricia Jones (excused),
Russell Miller, Ray A. Young (excused),
Frankie Young-Long (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.
Keith Hoddinott, USACHPPM
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Project Office, Construction
Division
Michelle Brock, U.S. Army Corps of Engineers,
New England District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the November meeting. There were no changes and the minutes were signed and entered into the record.

4. Mr. Absolom then introduced our speaker, Mr. Michael Duchesneau, who gave a presentation on Proposed Recommendations for SEAD-13, IRFNA Disposal Site and also the pilot study being done at the Ash Landfill. A copy of the handout is forwarded with these minutes. Some highlights from Mr. Duchesneau's presentation:

- Results and recommendations have not been reviewed or agreed to by EPA or NYSDEC.

- IRFNA - Inhibited Red Fuming Nitric Acid.

- Pits were dug and filled with limestone/lime, then IRFNA was added and a neutralization action occurred.

- Common practice to mix an acid with a base to neutralize.

Q: What is hazard?

A: Concerned about subsurface disposal activity. Acids may be leached. The concern is presence of nitrates in groundwater, aluminum in the surface waters.

- Located in future conservation/recreational area.

- Adjacent to the Duck Pond - could have migrated in surface water.

- Expanded site investigation (ESI), Dec 1995.
What kind of issues. Did small scale site investigation.

- Summary of ESI Investigation

Did some geophysical surveys
Analyzed soil borings
Seven monitoring wells
Checked quantity water in with quality of
water out.

- Focus efforts in the pit area. Geophysical survey used EM-31. It is ideal for pinpointing areas of salt content. Showed areas where the pits were.

- We are looking at one monitoring well with highest nitrate concentration.

Q: How come used EM-31 instead of radar?

A: Radar is less dramatic than EM-31.

- He gave a summary of soil analytical data
Found 12 metals detected above TAGM criteria.
More concerned about presence at high levels and what was found is not too far above TAGM level.
Volatiles low - not concerned about this.

TAGM values used for background. The number of soil samples for background totaled about 50 across Depot. Of that we use 95th percentile.

Q: Do they have anything to do with hazardous value?

A: No. They aren't indicative huge chromium disposal site. It's there. Slightly above level. Concerned but not particularly over concerned.

Q: What is TAGM?

A: Technical Administrative Guidance Memorandum. Guiding criteria for work done at the Depot.

- He Summarized Groundwater Data

- Metals in groundwater are affected by turbidity of water sample collected. Muddier water more metal in it. In 1994 some of these samples were very turbid. Have developed newer/better technology for collecting them. In 1992 doing filtered and unfiltered. Had to do nonturbid sampling without filtered.

- He summarized surface water data. Only concern here was aluminum and iron. There were no volatiles, semi-volatiles, pesticides, herbicides nor nitoraromatics detected.

- Mini-risk assessment. Identical process full-blown baseline. Take maximum values evaluate what risks are in human exposure. Consider what land going to be used for. Unacceptable if drinking water with highest nitrate levels.

- Groundwater risk from iron and nitrate. Look at aluminum problem too. Left with issue of what to do. Army is evaluating information. Considering restricting use of groundwater at site or do monitoring program. Nitrates degrade over time. Aluminum in surface water is difficult to understand. Sample aluminum to confirm results. Believe low level. Think it's from sediment in samples.

- Groundwater flows the way land goes. The pond is in the low spot. Groundwater flows toward pond. Not seeing in down gradient wells.

Q: What will the property be used for?

A: Conservation. People who drink water are not close to that site. Seven groundwater wells, only one found in excedence--right in pit. There is no real exposure if no one is drinking water.

Q: What about toxicology of nitrates?

A: 10 PPM#--Blue baby syndrome. Problem for pregnant mothers. Only dangerous to infant children and unborn children that we know.

- Right now we are leaning toward monitored natural attenuation.

- DOH/DEC make sure current and future receptors aren't at risk. Extent isn't far out where would impact people. Steve Absolom added that by presenting this now, the RAB can see what our options are going to be in future to treat this. Do I spend million dollars to investigate this site. Take information and make reasonable decision. It's is a financial decision as well as what is the right thing to do.

Mike Duchesneau also summarized the site conditions of the Ash Landfill. Some highlights of this presentation:

- Former trash incinerator located within conservation land use area.
- Concerned with chlorinated organics in groundwater.
- Source area eliminated in 1995 with a removal action.
- Left with extended groundwater plume at depot boundary.
- Installed a reactive barrier wall with zero valence iron. Fairly new technology. Involves chemical reaction. Passive system groundwater moves thru reactive wall where dechlorination takes place and is cleaned. Put barrier wall width plume at Depot Boundary. As water moves thru trench, we see it go in and out.
- Goals are to demonstrate concentration reductions, determine groundwater flow regime.
- Implemented after RI and FS prior to ROD. Still working on ROD based on results of this study.
- Monitoring is ongoing.

- Groundwater moves about 40 feet/year. Concentrations high coming in. When started, contaminated groundwater already there down gradient; therefore it takes time before gets flushed out.

Q: Any idea of how many flushes.

A: No. Probably 5-10 flushes. The question is how fast groundwater moves to flush it clean. It is not any easy fix answer.

- Good news is in the trench were reaction going on concentrations are very low.

Q: Is there any geologic feature attributed to this?

A: Yes, when did trenching, did test pits, did hit areas where found old clay tile pipes. Could be funneling along a path in middle.

- In summary, three quarterly rounds complete. Last round currently being done.

- Trench concentrations are all low--good news.

- Downgradient concentration is above target values. So flushing to TCE/DCE will require more time to reduce downgradient concentrations.

- Technology appears successful. Further downgradient monitoring is required.

5. Mr. Absolom gave a presentation on The Principles of Environmental Restoration which was a two-day workshop the BCT attended. A copy of the handout is forwarded with these minutes. Some highlights of Mr. Absolom's presentation:

- He found the training course got him thinking in other areas he hadn't been thinking. One goal was with Ecological Risk Assessment and ways we can streamline that so we can come to agreement as to what we should do with project, etc.

- Trainers used specific site examples.

- Training encourages strategic thinking, team building and problem solving.
- Can be used to streamline cost and scheduling. Could help time things better.
- Help develop effective communication and cooperation. EPA, the Army, State, would work as a team.

- Uncertainties are inherent and will always need to be managed.

- Will try to make principles of environmental restoration work.

- Found it was a great idea but feel we have to get out of mindset of regulator/regulatee.

- We would look at our options based on what we know about the site.

Q: Is budget complex and it is a problem with this philosophy?

A: No, IRFNA good example. The RI if funded but not yet authorized to proceed.

Q: Does funding for RI/FS come out of the same pot of money?

A: The money can be put in contract for different segments of work to be accomplished. Different tasks are set up in contract.

- Project managers must still make decisions when uncertainties exist.

- Use the Conceptual Site Model (CSM)
 - Organize and communicate installation data
 - Prioritize problems/responses
 - Identify uncertainties
 - Basis for evaluating effectiveness of potential responses
 - Communicate effectively with stakeholders.

- Hope to keep PER concept active and use for decisions.

- To manage uncertain ecological risks, we will do a RA and based on date, i.e., how effect mouse, etc. With new EPA guidance, instead of risk assessment you make risk management decisions. You look at population effect and community level effects.

- Need to allow flexibility - as we do a project need to be able to make field decisions and still be in framework of ROD.

- Make sure you know how to say project is done. Make sure all spelled out before come to closure on site. Have an agreed on exit strategy.

6. Mr. Absolom then opened up the meeting for open discussion. The following questions were raised:

Q: Regarding a news article on Depleted Uranium, did the depot store some here?

A: Shells, yes, consisting of bullets.

Q: Was any taken apart here? Apparently seeing health problems with Depleted Uranium and other contaminants.

A: It was not manufactured here. In storage process, don't know if separated projectile from casing. Tom Battaglia, former Depot Safety Officer, interjected and said no. All they used to do was a visual inspection. They would go through and check linkage and then put it back in its case. Steve also mentioned that Department of Health/NRC is looking at Bldg 612. They are keeping an eye on where DU was dealt with. We had an NRC license. As part of closure, they would like to terminate license.

7. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members will be on February 15, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:

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

RICHARD A. DURST
Community Co-Chair

Presentation to the RAB
January 18, 2000

Update on Status of :
The IRFNA Site (SEAD-13)
and
The Ash Landfill

Reactive Barrier Wall Treatability Study

Michael Duchesneau, P. E.

Topics for Tonight's Presentation

- *Proposed Recommendations for SEAD-13, IRFNA Disposal Site*
 - *Groundwater Results from the Zero Valence Iron Treatability Study*
 - *Results and Recommendations have not been Reviewed or Agreed to by EPA or NYSDEC*
-

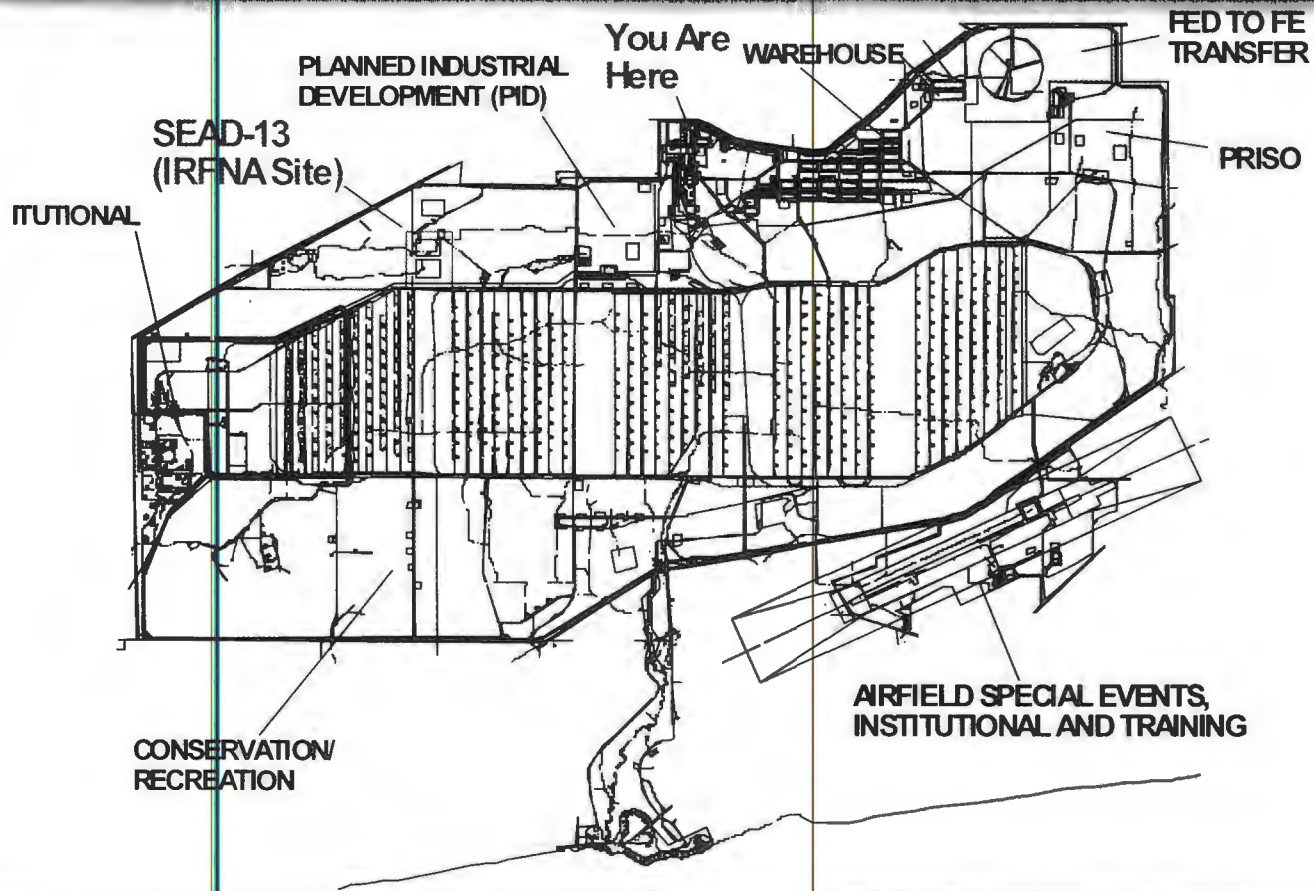
SEAD-13, IRFNA Site Background Information

- *IRFNA - Inhibited Red Fuming Nitric Acid*
 - *Oxidizer in Liquid Missile Propellant Systems*
 - *Composition*
 - *81%-85% Nitric Acid (HNO₃)*
 - *13%-15% Nitrogen Dioxide (NO₂)*
 - *0.7% Hydrofluoric Acid (HF)*
 - *2%-3% Water*
 - *Disposed (Neutralized) in Shallow Trenches
Partially Filled with Limestone or Lime*
-

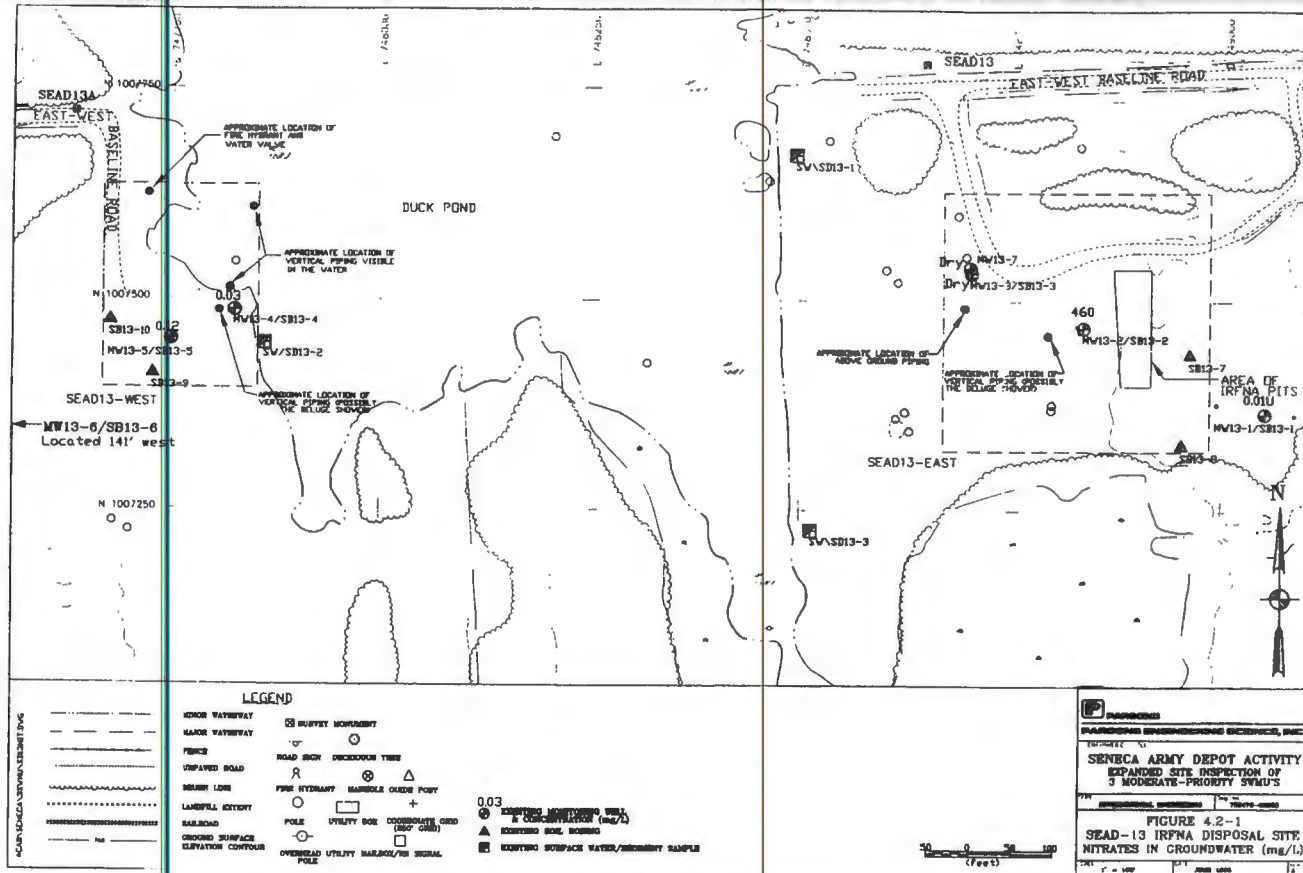
SEAD-13, IRFNA Site Background Information (Cont.)

- *Identified as a Solid Waste Management Unit (SWMU); SEAD-13*
- *Future Conservation/Recreation Area*
- *Adjacent to the “Duck Pond”*
- *Expanded Site Investigation (ESI);
December, 1995*

Location Map of SEAD-13, (IRFNA Site)



Site Map of SEAD-13, (IRFNA Site)

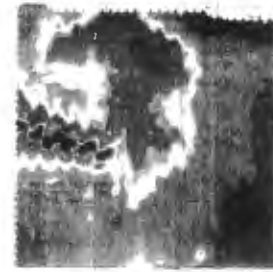


PARSONS ENGINEERING SCIENCE

SEAD-13, IRFNA Site Summary of ESI Investigation

- *Geophysical Surveys*
 - *Electromagnetic (EM-31); 12,180 feet*
 - *Ground Penetrating Radar (GPR) 7,500 feet*
- *Ten (10) Soil Borings*
 - *Three (3) Samples Analyzed per Boring; 30 Total*
- *Seven (7) Monitoring Wells*
 - *Two (2) Background for each Disposal Pit*
 - *Two (2) within each Disposal Pit*
- *Three (3) Surface Water/Sediment Sample Locations*
 - *Two (2) from Duck Pond and One (1) Upstream*

Geophysical Anomalies (EM-31) at SEAD-13



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PARSONS ENGINEERING SCIENCE & INC.
3800 WASHINGTON AVENUE
DENVER, COLORADO 80202
TELEPHONE: 303.733.1000
FAX: 303.733.1001

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SEAD-13, IRFNA Site

Summary of Soil Analytical Data

- *Low VOCs (None Above; from Lab. Contamination)*
 - *3 Semi-VOCs above TAGM Criteria (phenol, 1,4-dichlorobenzene and 4-methylphenol) in one sample*
 - *1 Pest./PCBs detected; None above TAGM Criteria*
 - *No Herbicides detected; No Nitroaromatics detected*
 - *12 Metals detected above TAGM Criteria*
 - *Chromium (9 Above; Max. 35 mg/Kg; TAGM 24 mg/Kg)*
 - *Copper (14 Above; Max. 45 mg/Kg; TAGM 25 mg/Kg)*
 - *Nickel (14 Above; Max. 57 mg/Kg; TAGM 37 mg/Kg)*
 - *Thallium(12 Above; Max. 0.9mg/Kg; TAGM 0.3 mg/Kg)*
-

SEAD-13, IRFNA Site Summary of Groundwater Data

- *No VOCs, PCBs/Pest. or Herbicides detected*
 - *No Semi-VOCs above GA Criteria*
 - *Nitrate (1/5 Above; Max. 460 mg/L; GA 10 mg/L)*
 - *6 Metals detected above GA Criteria (Turbidity)*
 - *Antimony (4/5 Above; Max. 53 ug/L; GA 3 ug/L)*
 - *Chromium (1/5 Above; Max. 69 ug/L; GA 25 ug/L)*
 - *Lead (1/5 Above; Max. 35 ug/L; GA 25 ug/L)*
 - *Iron (4/5 Above; Max. 69,000 ug/L; GA 300 ug/L)*
 - *Magnesium (5/5 Above; Max. 188 mg/L; GA 35 mg/L)*
 - *Manganese (3/5 Above; Max. 1,120 ug/L; GA 300 ug/L)*
-

SEAD-13, IRFNA Site

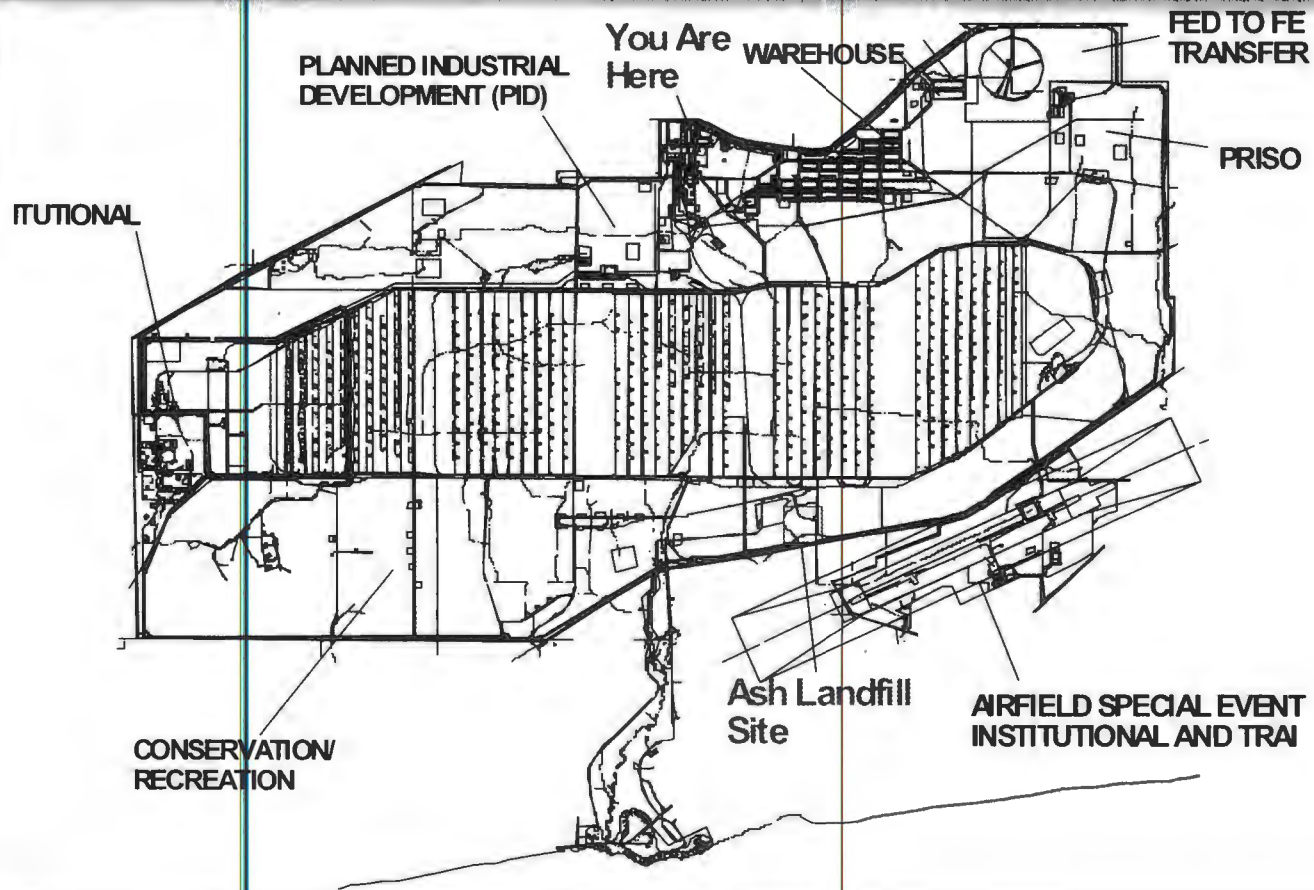
Summary of Surface Water Data

- *No VOCs detected*
 - *No Semi-VOCs detected*
 - *No Pest./PCBs detected*
 - *No Herbicides detected*
 - *No Nitroaromatics detected*
 - *2 Metals detected above Class C Criteria*
 - *Aluminum (Ionic) (3/3 Above; Max. 3,830 ug/L;
Class C Criteria 100 ug/L)*
 - *Iron (3/3 Above; Max. 5,790 ug/L;
Class C Criteria 300 ug/L)*
-

SEAD-13, IRFNA Site “Mini-Risk” Assessment

- *Human Receptors Considered*
 - *Park Worker*
 - *Recreational Visitor (Child)*
 - *Construction Worker*
 - *Excess Risk to Park Worker and Recreational Visitor due to Ingestion of Groundwater*
 - *Groundwater Risk from Iron and Nitrate*
 - *Ecological Risk from Aluminum in SW*
-

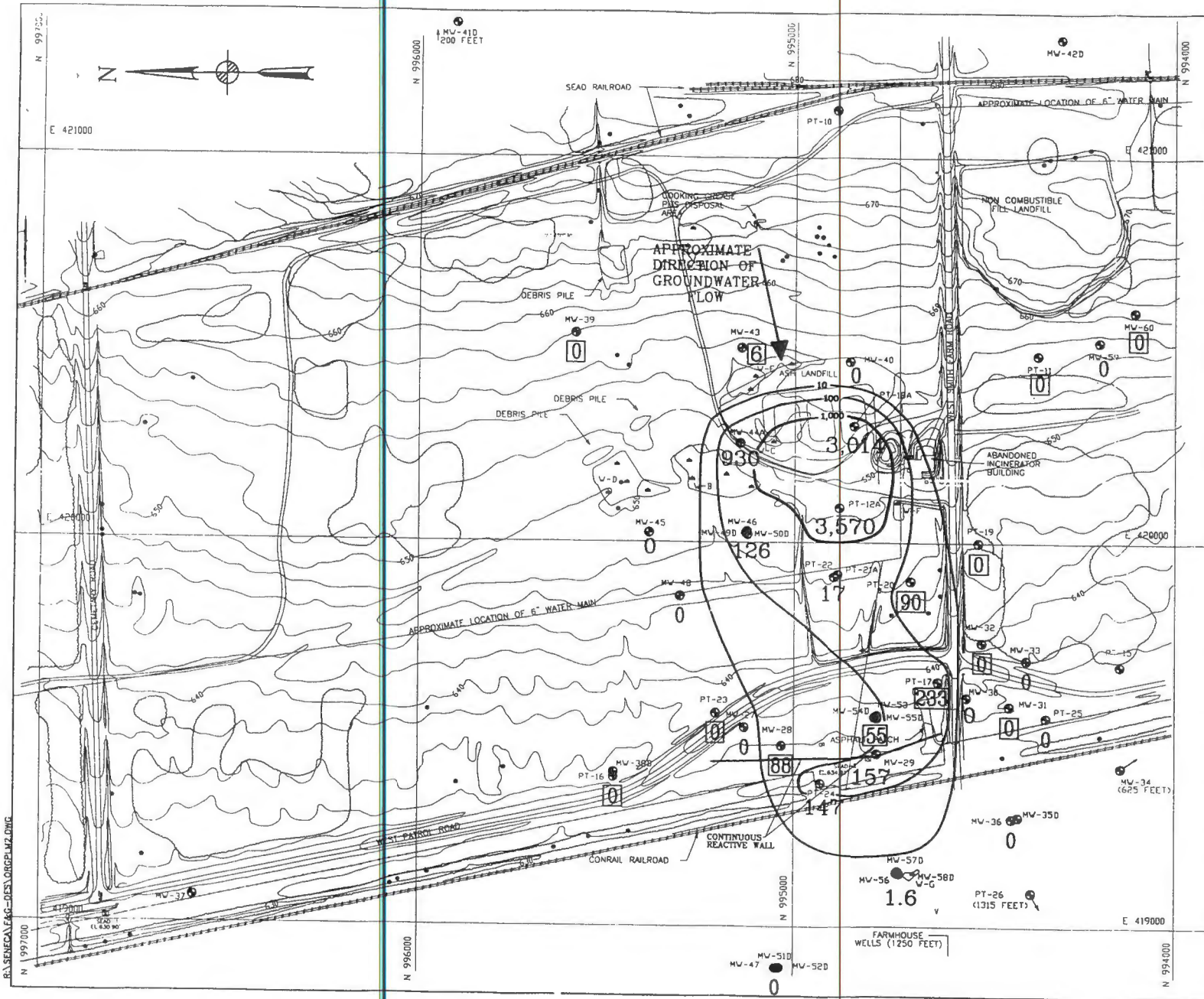
Location Map of Ash Landfill Site



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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*



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 1997 DURING THE RI

NOTE: THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCHEDULED IN THE TILL/WEATHERED SCALE ADAPTER.

Scale: 1" = 250'

B	11/4/98	ISSUED FOR EPA REVIEW							
A	8/28/98	ISSUED FOR REVIEW							
MV	DATE	DESCRIPTION							
	DRAWN BY	C. SHOWN	CHECKED BY	A. TRAYLOR					
	DESIGN SUPV.		REV. ENG.						
	CHIEF DESIG. ENGR.		MAP. OF ENGR.						
	PROJECT MANAGER	H. BUDHESKIAN							
	MR. OF PROJECTS	J. P. CHAMBERLAIN							
	TR. COORDINATOR	V. B. PATTERSON							

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
 ASH LANDFILL GROUNDWATER TREATABILITY STUDY
 USING ZERO VALENT IRON CONTINUOUS REACTIVE WALL

DEPT. ENVIRONMENTAL ENGINEERING Proj. No. 788200-01004

FIGURE 1
 ASH LANDFILL GROUNDWATER TREATABILITY STUDY
 ORGANICS PLUME: POST-REMOVAL ACTION CONDITIONS

SCALE: AS NOTED DATE: NOVEMBER 1998 REV: B

R:\SENECA\EGG-DESI\ORGP\MZ.DWG

N 997000

N 996000

N 995000

N 994000

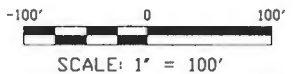
E 421000

E 419000



LEGEND:

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- 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
- TREATMENT WALL
- 6" WATER MAIN



C	2/2/99	ISSUES FOR EPA REVIEW							
D	11/4/98	ISSUES FOR EPA REVIEW							
E	10/2/98	ISSUES FOR RE-BID							
F	9/16/98	ISSUES FOR BID							
G	8/25/98	ISSUES FOR REVIEW							
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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
 ASH LANDFILL GROUNDWATER TREATABILITY STUDY
 USING ZERO VALENT IRON CONTINUOUS REACTIVE WALL TREATABILITY STUDY WORK PLAN

DEPT: ENVIRONMENTAL ENGINEERING Proj No: 7268208-01004

FIGURE 3
 PROPOSED MONITORING WELL LOCATIONS FOR CONTINUOUS REACTIVE WALL

SCALE: 1" = 100' DATE: FEBRUARY 1999 REV: E

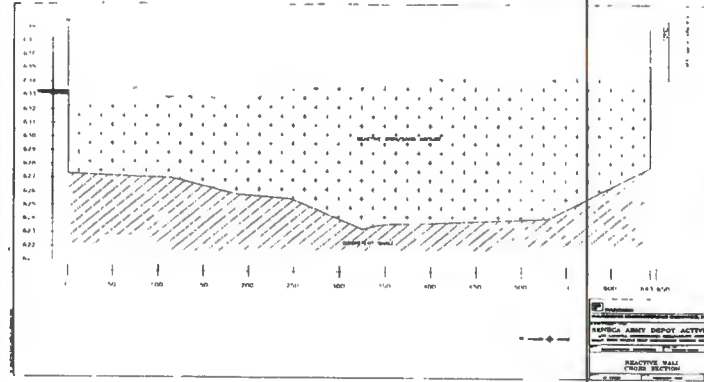
Reactive Barrier Wall with Zero Valence Iron

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

Goals for Reactive Barrier Wall Study at Ash Landfill

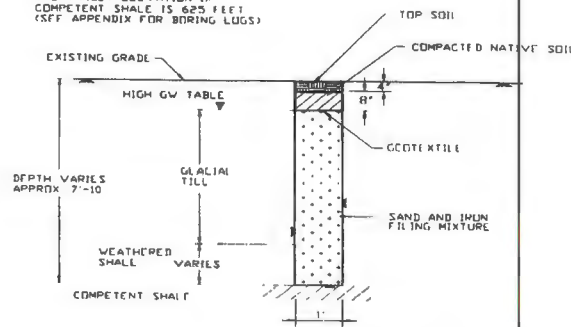
- *Demonstrate Concentration Reductions*
- *Evaluate Degradation Rate*
- *Determine Groundwater Flow Regime*
- *Obtain Engineering Design Data*
 - *Reactive Iron Volume*
 - *Hydraulic Characteristics of Barrier*

Reactive Barrier Wall Cross-Section



NOTES:

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

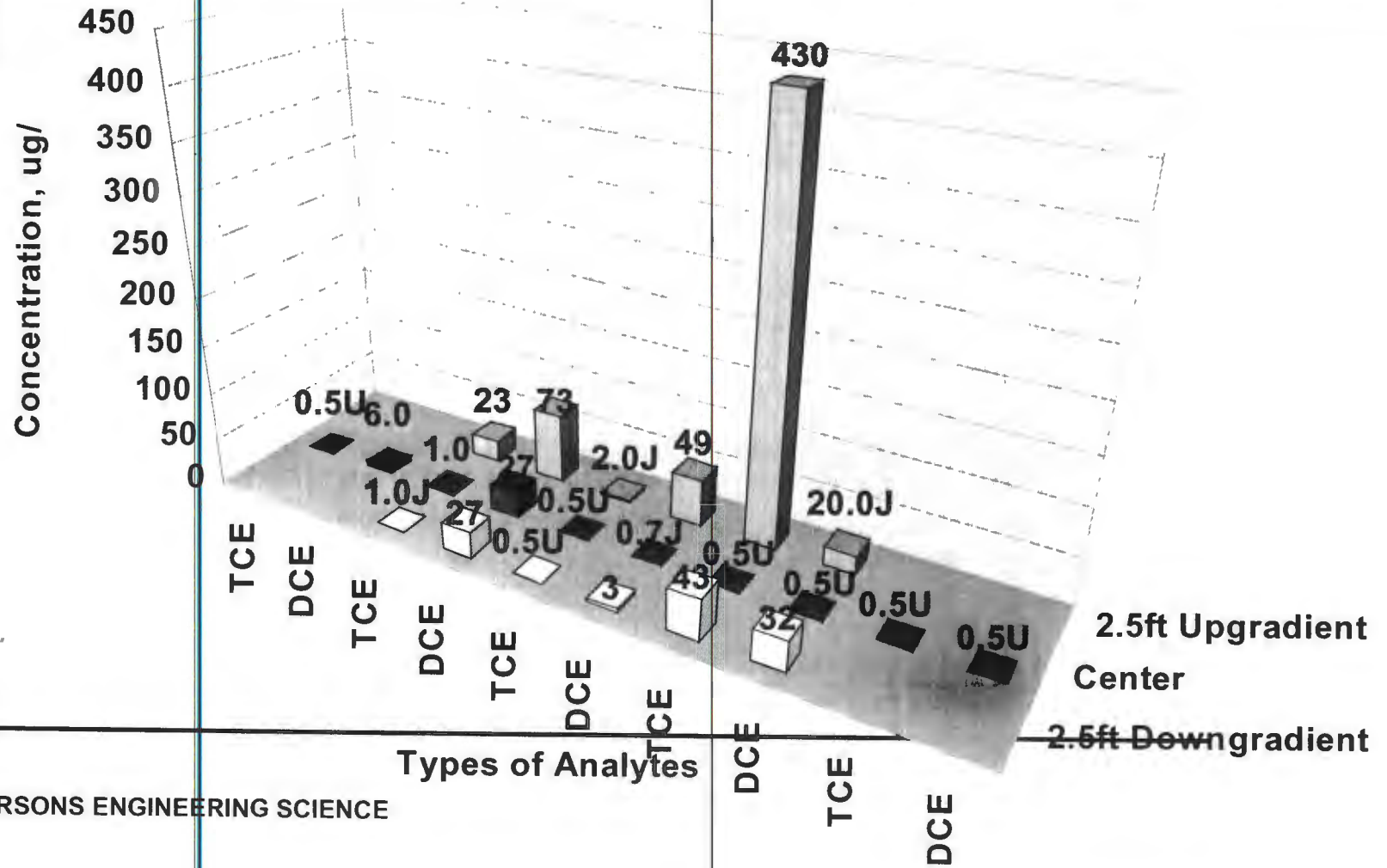
Treatability Study for In-Situ Reactive Barrier Wall

- *Implemented after RI and FS, Prior to ROD*
- *Installed December, 1998; Monitoring is On-going*
- *Installed with a Continuous Trencher in Less than One Week*
- *Reactive Wall is 650 feet long, 14 inches wide, 7 to 12 feet deep, 50/50 Mixture of Reactive Iron and Sand*

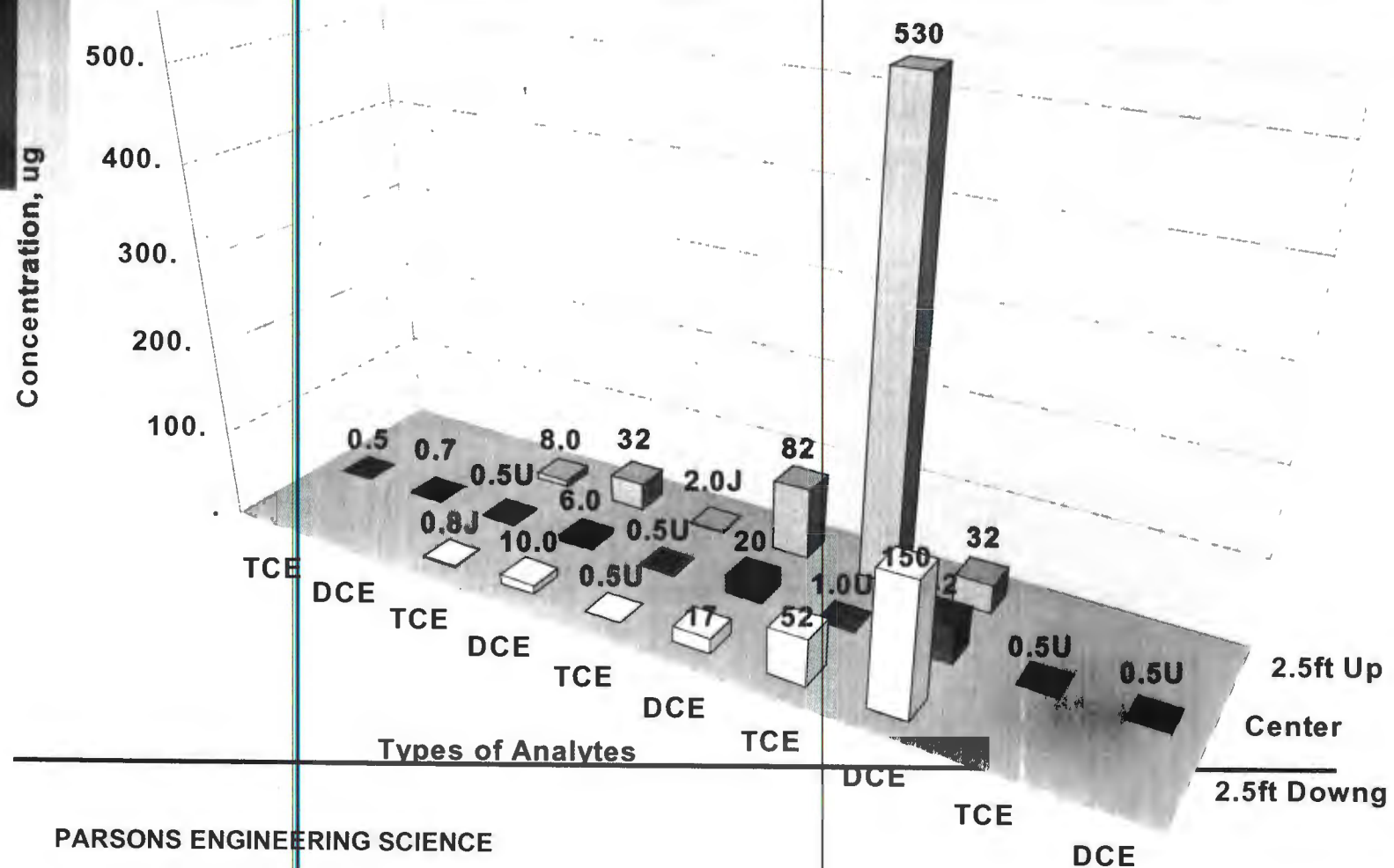
Ash Landfill, Reactive Barrier Wall Study, Scope of Work

- *Select SubContractors*
 - *Envirometals (Patent Holder for Zero Valence Iron Applications)*
 - *Dewind; Trench Installation Contractor*
 - *Peerless; Reactive Iron Supplier*
 - *Install Reactive Wall; December, 1998*
 - *Perform Groundwater Monitoring*
 - *1 Year of Quart. Samp.; Monthly Water Levels*
 - *Prepare Report*
-

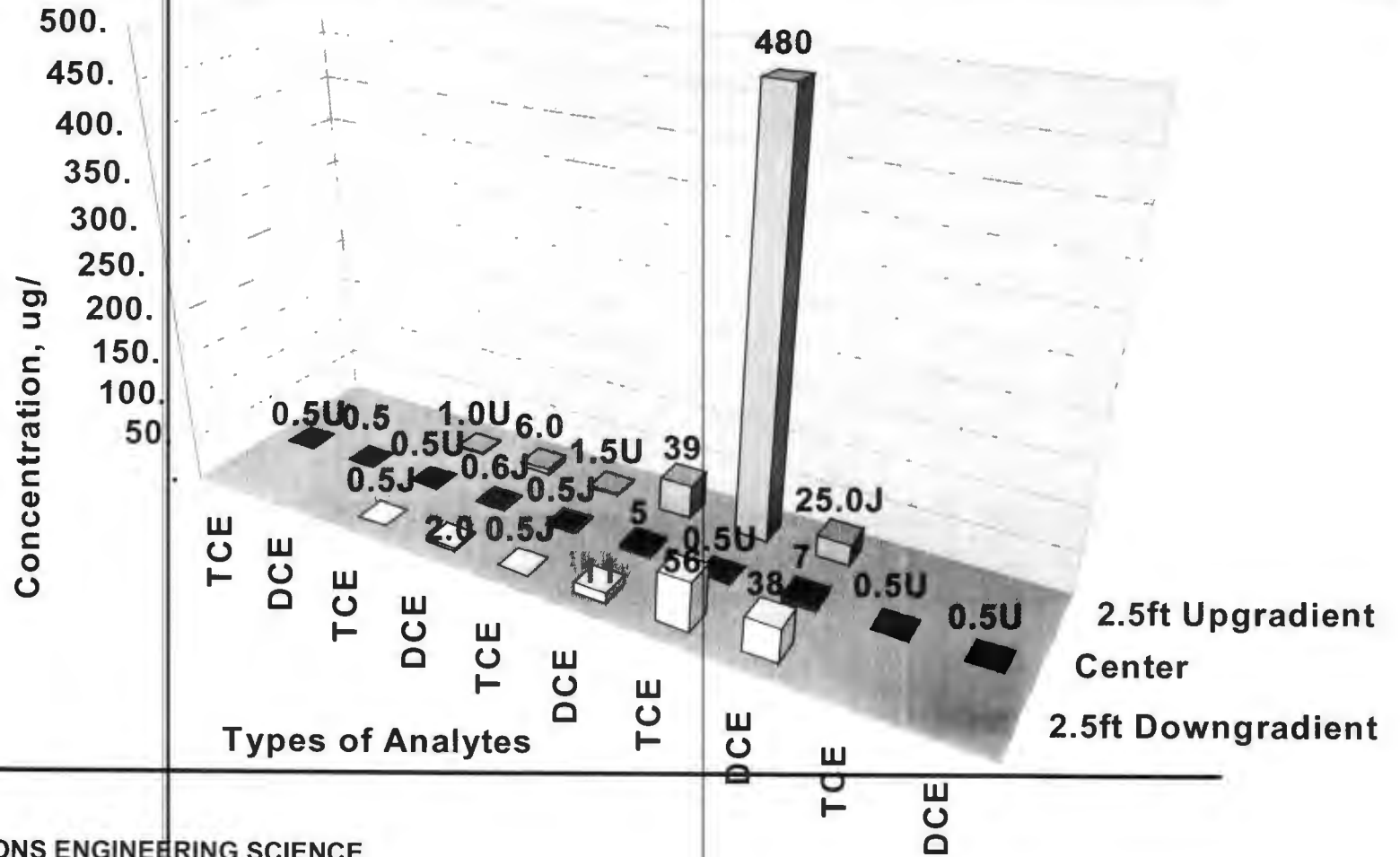
Reactive Barrier Wall; 1st Round Groundwater Data, April 1999



Reactive Barrier Wall; 2nd Round Groundwater Data, June 1999



Reactive Barrier Wall; 3rd Round Groundwater Data, Sept. 1999



Reactive Barrier Wall Treatability Study Update

- *Three (3) Quarterly Rounds Complete; Last Round Currently being done*
- *Trench Concentrations are all Low*
- *Downgradient Conc. are above Target Values*
- *Flushing of TCE/DCE from Aquifer will Require more Time to Reduce Downgradient Conc.*
- *Technology Appears Successful; Further Downgradient Monitoring is Required*

Test Pit Prior to Installation



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Continuous Trencher Machine



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Continuous Trencher Machine



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On-Site Mixing of Reactive Iron with Sand



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Reactive Iron with Sand After Mixing



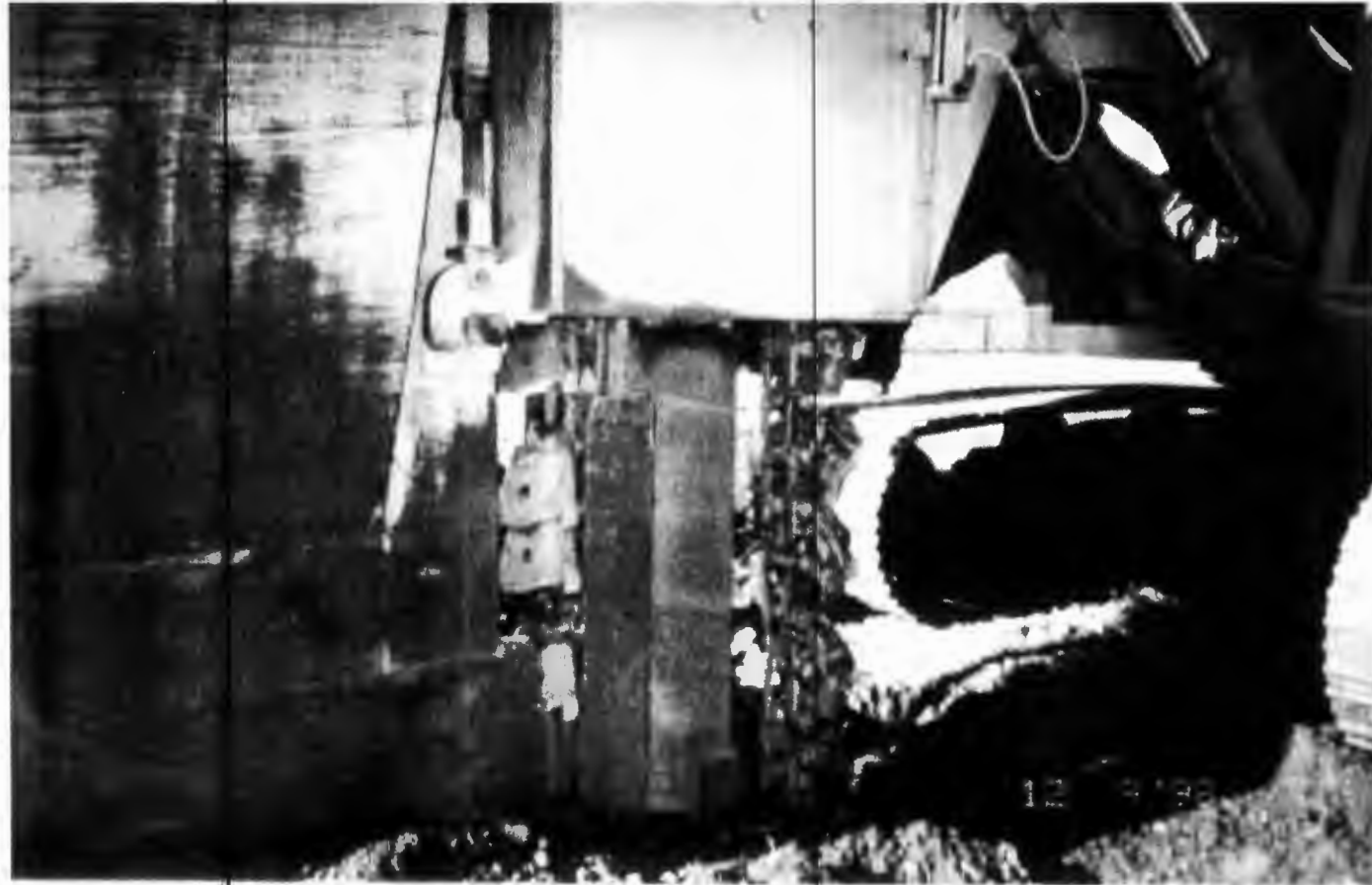
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Installation of Reactive Barrier Wall with Continuous Trencher



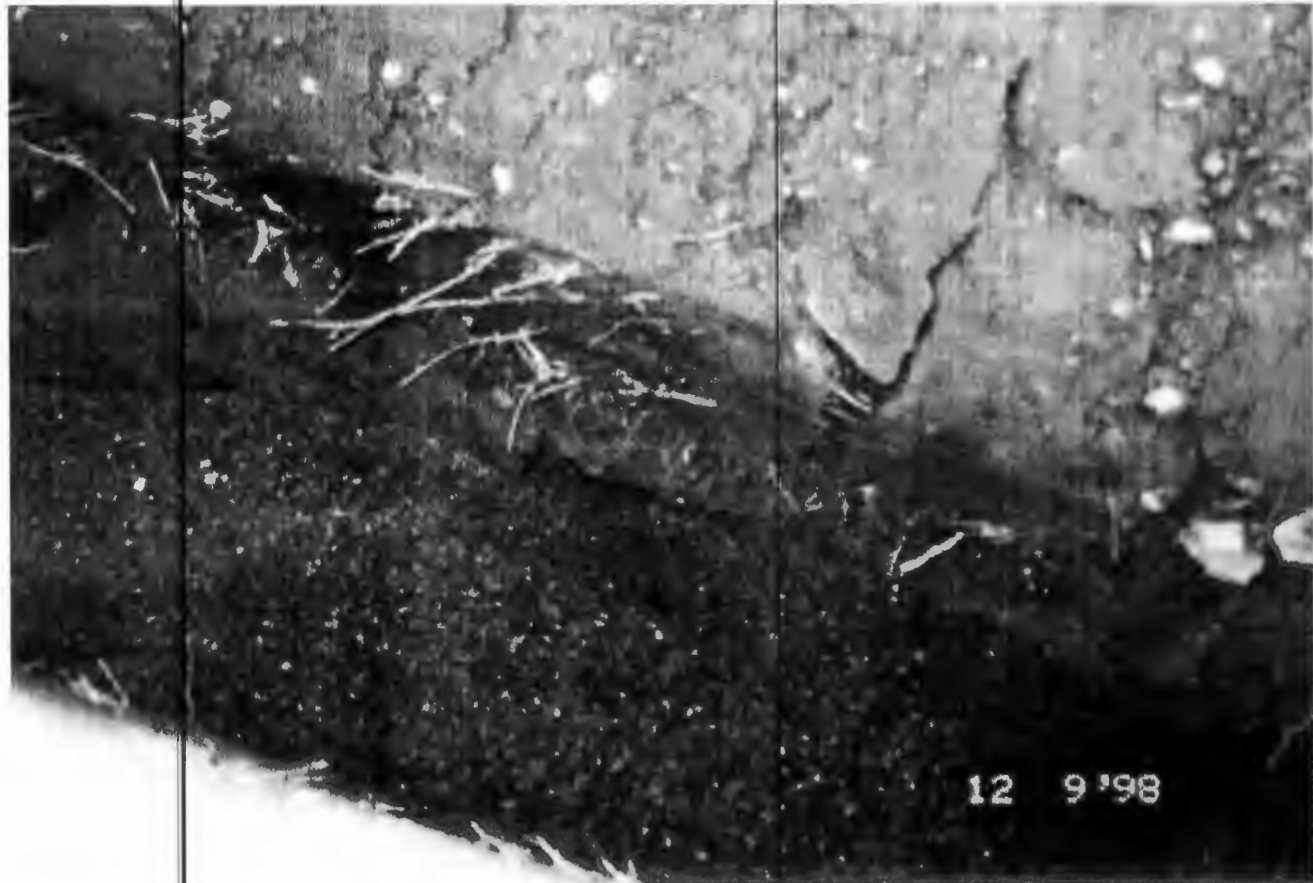
PARSONS ENGINEERING SCIENCE

Continuous Trencher Excavating Soil and Placing Reactive Iron

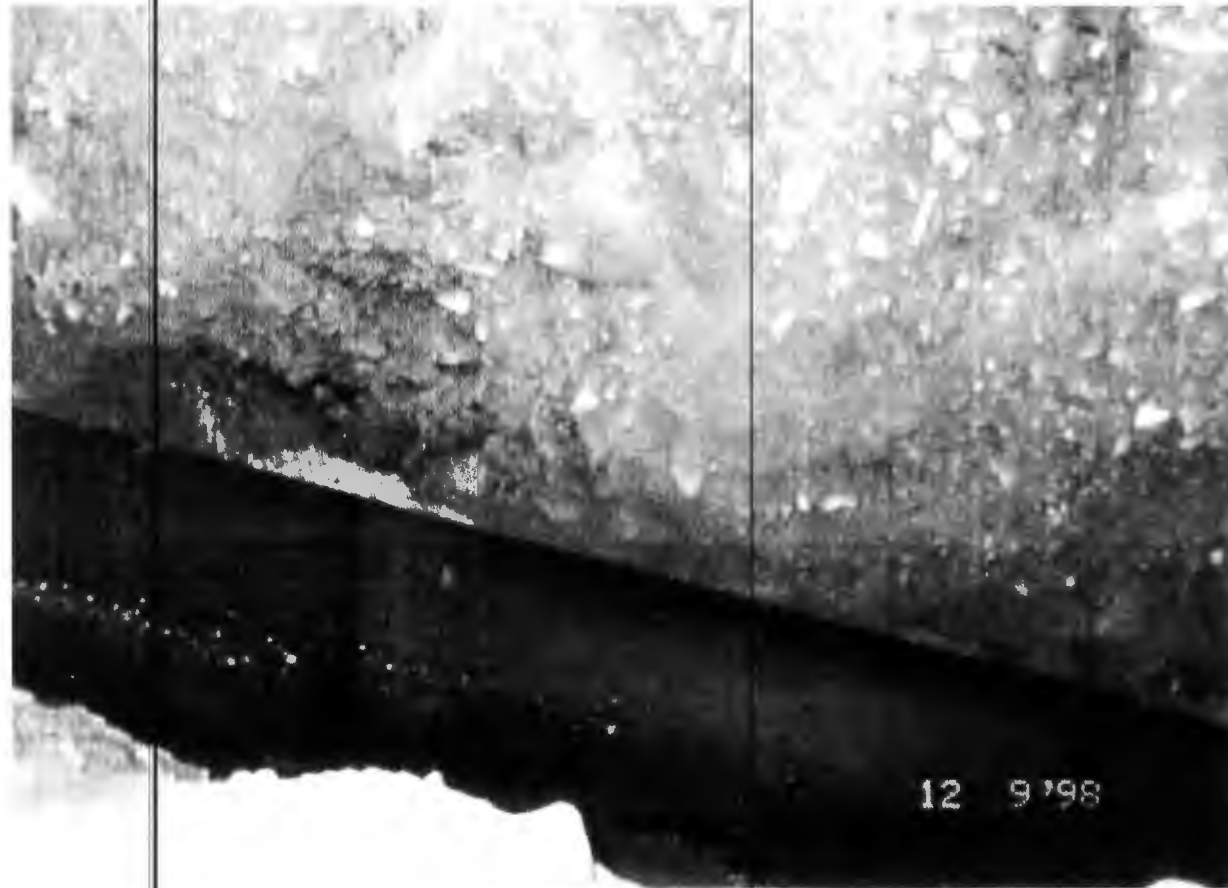


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Installed Trench with Reactive Iron Following Trenching Operations



*Trench with Geotextile Filter Fabric
over Reactive Iron Prior to Backfilling*



Installation of Reactive Barrier Wall with Zero Valence Iron



**PRINCIPLES OF
ENVIRONMENTAL RESTORATION
AND THEIR
APPLICATION TO STREAMLINING
INITIATIVES**

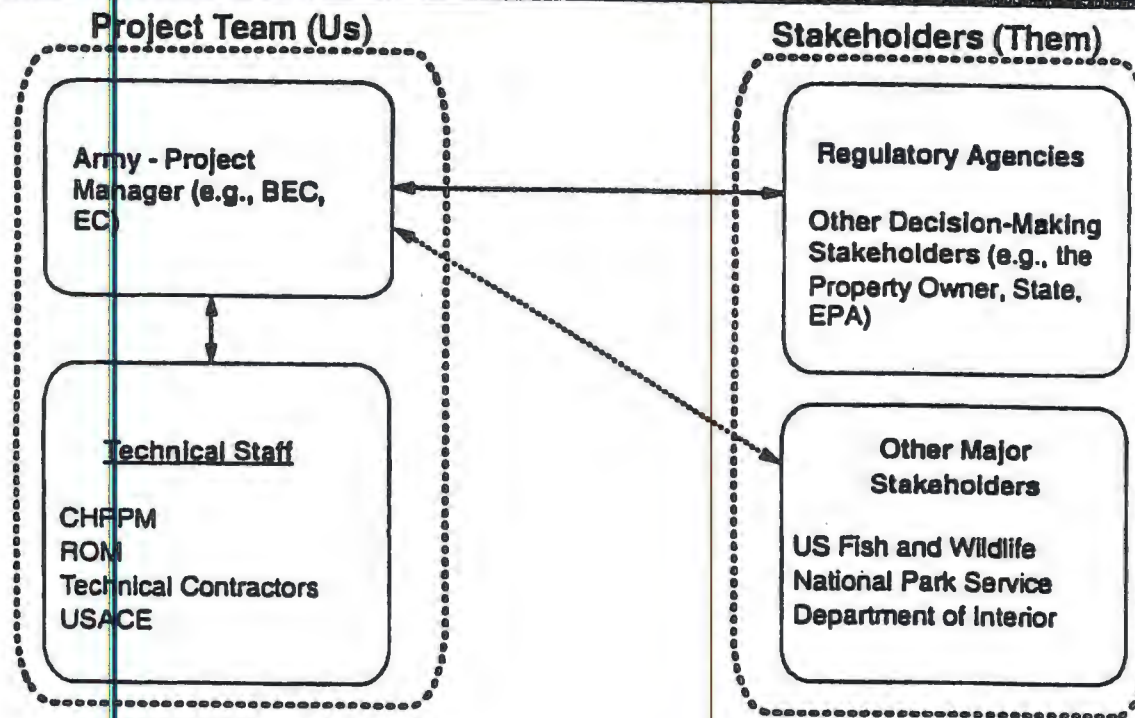
Workshop Objectives

- Introduce the four principles of environmental restoration and their utility in:
 - ✓ Encouraging strategic thinking, team building, and problem solving
 - ✓ Seizing opportunities for cost and schedule streamlining
 - ✓ Improving communication with all stakeholders
- Provide tools that facilitate application of the principles

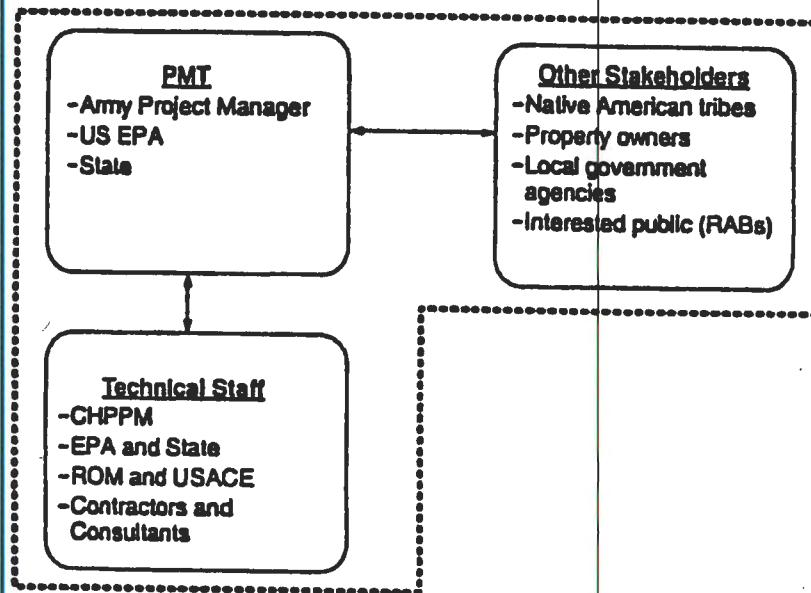
Four Principles of Environmental Restoration

- Developing effective communication and cooperation with a project management team is essential
- Clear, concise, and accurate problem identification and definition are critical
- Early identification of likely response actions is possible, prudent, and necessary
- Uncertainties are inherent and will always need to be managed

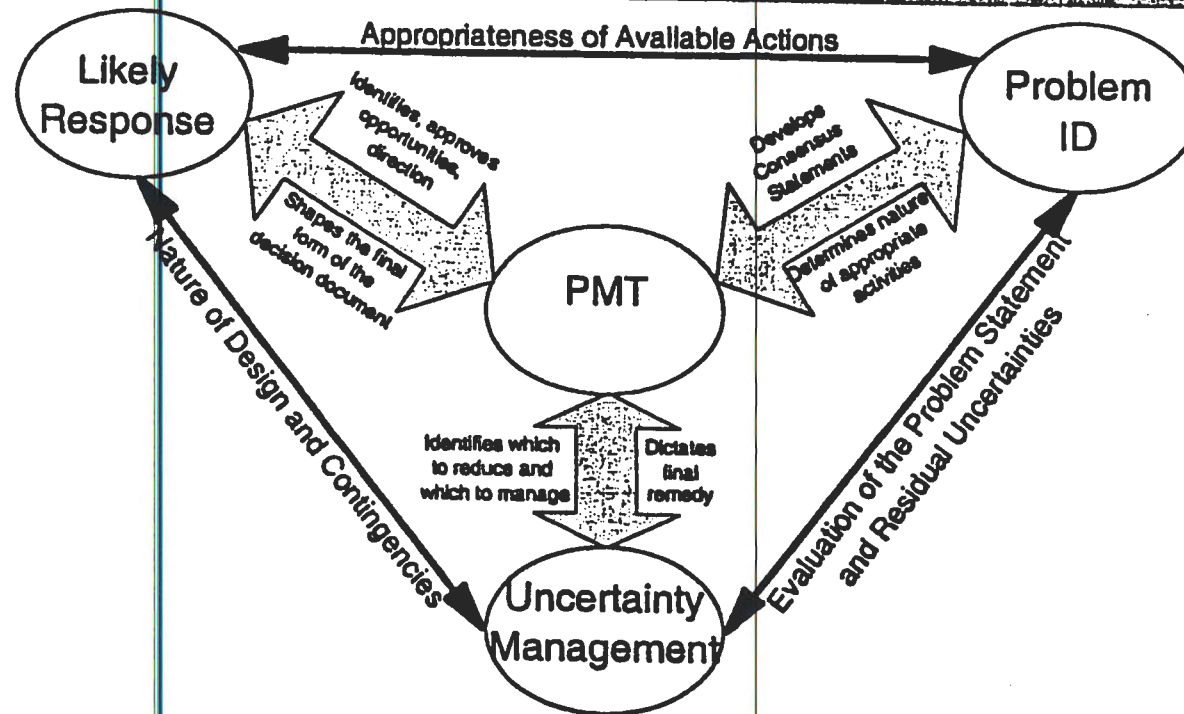
Current Paradigm (What We'd Like to Change)



Proposed Paradigm: Project Management Team Approach



Interactions Between the Four Principles



Environmental Restoration is Driven by Two Key Questions

- Do we have a problem?
- If yes, what should we do about it?

Early Identification of Likely Response Action(s) Allows:

- Early focus on appropriate remedial action objectives and an exit strategy
- Early consideration of potential response action implications
- Development of a hierarchy of probable technologies for a defined problem
- Early consideration of presumptive remedies, generic approaches, and a phased response to remediation
- Implementation of removal and/or interim actions

Why Focus on Uncertainty?

- Uncertainty management is essential for accelerated progress in site restoration because it helps make decisions when “perfect information” is not available
- Resolution of all uncertainties or unknown conditions is unlikely
- Yet, project managers must still:
 - ✓ Make decisions when uncertainties exist
 - ✓ Effectively communicate how uncertainties are addressed
 - ✓ Be able to distinguish between significant and insignificant uncertainties

Uses of the CSM (Conceptual Site Model)

- Organize and communicate installation data
- Represent interrelationships that need to be understood to identify and prioritize problems/responses
- Identify uncertainties
- Provide basis for evaluating effectiveness of potential responses
- Communicate effectively with stakeholders

Individual vs. “Population” Risk

- “Superfund remedial actions generally should not be designed to protect organisms on an individual basis” (USEPA 1999)
- Generally focus on:
 - ✓ population-level effects
 - ✓ community-level effects
- Exceptions
 - ✓ listed or candidate threatened and endangered species
 - ✓ treaty-protected species

Common Elements of Data Collection Planning

- Define the decisions
- Identify data that support making the decisions
- Define and agree on an acceptable level of confidence for most decisions

Remaining Uncertainties in Technology Selection

- Define performance objective
- Set selection basis
- Categorize residual uncertainties
- Select response/technology

Key Elements of a Decision Document

- Requirements and Prohibitions:
 - ✓ Performance Objectives
 - ✓ Response Components
 - ✓ Criteria and Standards
 - ✓ Additional Requirements
 - Allowances and Flexibility
-

Exit Strategy

- What are necessary and sufficient data to demonstrate that the desired state or conditions (e.g., long-term monitoring state) has been reached?
 - ✓ What?
 - ✓ Where?
 - ✓ How?
 - ✓ How often?
 - ✓ Under what conditions?
 - Data interpretation
-

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ENVIRONMENTAL RESTORATION
AND THEIR
APPLICATION TO STREAMLINING
INITIATIVES**

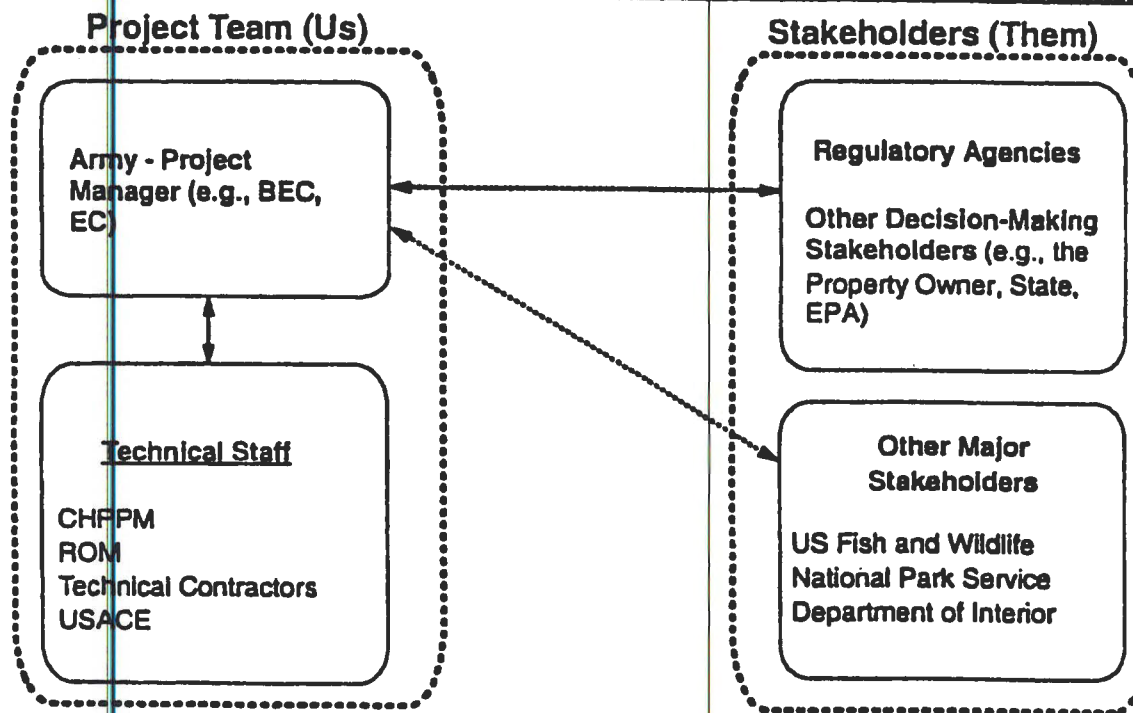
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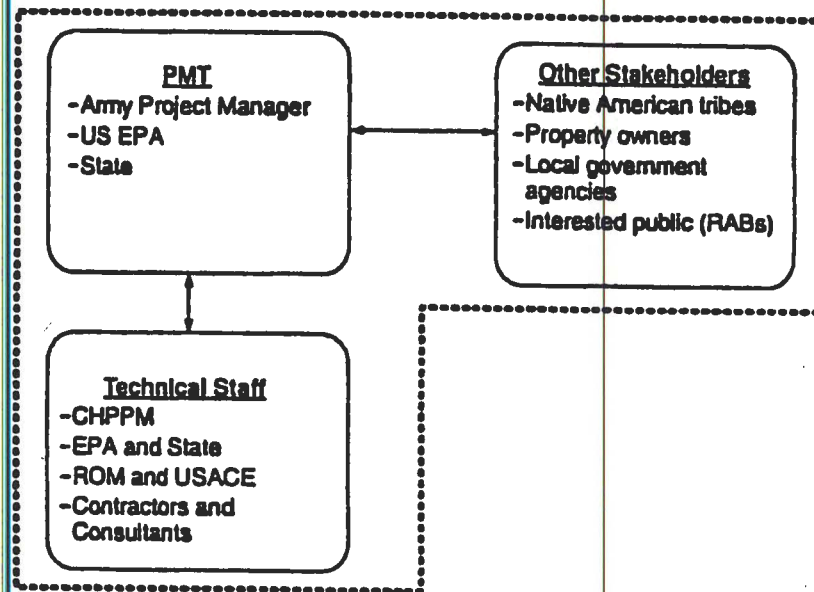
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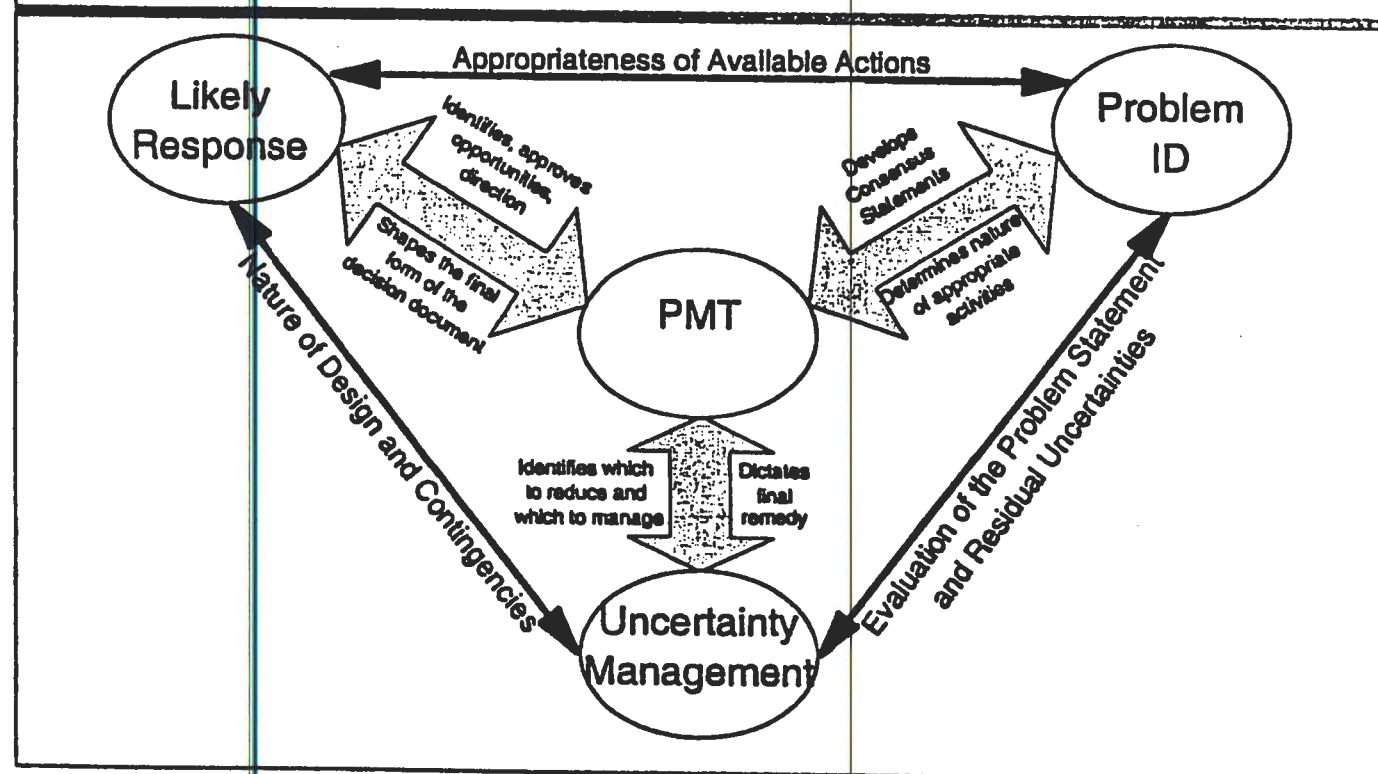
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 - ✓ What?
 - ✓ Where?
 - ✓ How?
 - ✓ How often?
 - ✓ Under what conditions?
 - Data interpretation
-

MINUTES
RESTORATION ADVISORY BOARD
February 15, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Julio Vazquez, U.S. Environmental Protection
Agency

Dan Geraghty, NYS Department of Health
James Quinn, NYS Department of Environmental
Conservation
Steven Paszko, NYS Department of Environmental
Conservation

Community RAB Members Present:

Brian Dombrowski, Russell Miller,
Ken Riemer, Fred Swain, Karen Tackett,
Henry Van Ness, David Wagner

Community RAB Members Not Present:

Richard Durst, Community Co-Chair (excused),
Antje Baeumner (excused), Jeffrey Beall (excused),
Frank Ives (excused), Patricia Jones (excused),
Bob McCann, (excused), Ray A. Young (excused),
Dave Schneider (excused), Jan Schneider (excused),
Frankie Young-Long

Environmental Support Personnel Present:

Kevin Healy, USA Corps of Engineers, Huntsville
Rob Wilcox, USA Corps of Engineers, Huntsville
Michael Duchesneau, Parsons Engineering Science,
Inc.
Jim Louserre, Parsons Engineering Science, Inc.
Keith Hoddinott, USACHPPM
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Project Office, Construction
Division

Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal
Susan Clark Porter, Fingerlakes Times
Tim Noga, Seneca White Deer, Inc.

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.
3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the January meeting. There were no changes and the minutes were signed and will be entered into the record when Dr. Durst signs them.
4. Mr. Absolom then introduced our speakers, Mr. Kevin Healy, who gave a presentation on Ordnance and Explosives Characterization/Remediation at Seneca Army Depot Activity. He also introduced Mr. Rob Wilcox, from Corps of Engineers, Hunstville who gave a presentation on Impact Assessment, The Road to Cooperative Risk Management.
5. Some Highlights from Mr. Healy's presentation follow. A copy of the handout is forwarded with these minutes.

- Object was to provide an overview of UXO evaluation and cost analysis and show how we got where we are today, and also the pilot study being done at the Ash Landfill

- Project goals
 - Determine sites that have potential for Ordnance and Explosives.
 - Characterize each site.
 - Perform remediation with regard to Ordnance and Explosive Threats.

- Haz Tox (Hazardous Toxic and Radiological Waste) refers to chemicals, solvents and metals waste

~~OE (Ordnance and Explosives) refers to ordnance waste.~~

- Characterization Process:

First do Archives Search Report, search past records, i.e., what kind of explosives

Engineering Evaluation/Cost Analysis (EE/CA). Investigation do sampling of how much ordnance. How determine cost to eliminate at the site.

- Remediation:

No further Action. Always have. Its is a baseline to measure others

Control. You may have something out there but it is too small a threat so you have maintain control.

Removal where you would do an actual removal.

- Archives Search Report (ASR) completed Dec 98. Visited Washington, D.C. also, not just local information. Did an extensive search. Identified 13 sites with a potential for OE. These are listed in the handout.

- Also highlighted general process phase for EE/CA. An EE/CA normally takes about a year.

- Geophysical test plot completed in January. Planted inert versions of ordnance/mock ups. Used at the Open Burning Grounds. Parsons evaluated results.

- Work Plans are being prepared and should be done shortly.

- Fieldwork due to begin in April/May 2000

Phases

Determination of OE/presence, do sampling to see what densities we have.

Try to determine risk impact.

~~Started to do a RA on Ordnance. Numbers got too difficult to understand. We have completed impact analysis. Puts in more relative terms.~~

- Make recommendations for future actions.

- Public review/input.

- Action Memorandum states what found and what you will do.

-Hope to complete by Spring 2001.

Q: Talked about the OB Ground. What kind of assurance do you have if you only look at 1-2 ft.

A: Asked to strip 1 foot off the top. Map 1-2 feet below that. Small items if equipment only sees 1-2 feet. Larger items can be seen deeper. On smaller sites chances are not going to exist that far. Only other way to go across surface 1-2 feet. Go strip entire surface. Go 1-2 feet again. Somewhere combine levels of information. If something larger you will see it.

Q: When you say complete by stripping just process? Not actual recommendation?

A: Recommendation would begin after that.

You have this special circumstance in the Ammunition Area (SEAD 53), where have magazine igloos, used only for storage and shipment of OE into and out of the area. You usually don't find concerns.

- Not typically an OE concern since random tossing is against regulations/procedures.

- The ammunition storage area was recommended for additional characterization because of ASR suggestion after magnetometer had registered some "hits" in a ditch. The "hits" may be any metal object.

- Do a statistical sampling. Found hits. Only one problem with recommendation for statistical sweep. Can't do in an area with random dispersal pattern. Can use statistical sampling for basis of conclusion.

- You can either go for everything, do nothing or control.

- The ASR recommends a statistical sampling. However, this requires a random distribution and this is not the case with scenario at SEAD-53.

- Alternatives for a non-random distribution scenario:

Rely on control.

Partial characterization would increase the warm and fuzzy feeling but does not allow basis for conclusions.

More likely be a wildlife refuge.
Could do a 100% characterization.

- So what would be the solution. Looking for RAB input.

Way to do characterization.

1. Grids - random or placed over different plots of area brush clearance. Everything below gets taken out.

2. New method-Meandering Path Method. You would meander through woods and walk and collect data so you can plot and say where you were. Small compact area without mass clearing. Don't have to do all the clearing.

- Utilizing digital instruments. Found the correlation good. Worry about whether they could locate it too. If can find in test plot, they can find others as well.

- There have been times in other places where test plots didn't go as well.

- Expand different on range as opposed to ammo storage area.

- Ammo area fills with magazines, store different UXO. Not allowed to store fuse in same area. Required to keep them required distances apart. Range shoot item for target practice. Leaves metal behind or a dud could be left behind.

- Tom Battaglia - Reality at SEDA more remote. Can be safely picked up and moved. Have yet to find a military item fused and explosive at the same time. As long as the storage facility doesn't handle improperly, you shouldn't have a problem.

Q: Does DEC have an interest in the ammo area?

A: We have not talked to them yet. The last we heard from the state is one of several applications for that area. Right now the last we heard is the state doesn't have an interest in that area. Liability issue for them.

Q: Regarding the OB Ground, any debris removed with ordnance.

A: Not removed from the site yet. It is usually the very last thing we do on a project.

- Goes thru 3-4 states. Check by supervisor, then by senior UXO supervisor that contractor certifies on paper that is inert. We have QA people on this (Fred Allen) responsible for checking. Certification would certify it is free of any explosives or dangerous material.

Q: Where do you remove it to?

A: Scrap dealer—it is recyclable.

Q: Are there any other closure sites dealing with unexploded ordnance?

A: Kevin responded not aware of any. Not a typical ordnance concern.

Q: Non-special circumstance area - 2-3 feet. Transfer unrestricted, uncontrolled or clean?

A: Don't certify anything except for scrap as we far as removing everything to a certain depth. We say that we have cleaned up to the depth.

Q: What about Rerenton Arsenal

A: Keith Hodinott answered released land but did have restrictions on land. The year 1974 was pre-RCRA, before a lot of environmental laws were here

- Everything we do is reviewed and approved by Defense Department Explosive Safety Board (DDESB). There are three default categories of clearing levels:

- 1 ft. - wildlife area
- 4 ft. - general public
- 10 ft. - for construction

- There are default depths. Depend on what find could get unrestricted use.

- NYS deed restrict run and land under NYS law restriction runs with the land. Permanent with the deed itself.

- Steve Absolom added that if you go out ammo area do less than 100% survey, confidence level doesn't change. Put restriction can't dig, put restriction on there. Nothing changes--what are you gaining by spending more? End result would be a deed restriction anyway.

Q: What happens if something is found anytime after the transfer.

A: The Army is still responsible. They would call the sheriff. They would call EOD. If we left something, the Army is responsible. Jim Quinn added that DOD would be asked to move to site.

Q: Any ready to pull out? How do you control it?

A: Fenceline in tact and Army employee remain until rest complete. Maintained through the fence. Probably one year before EE/ECA is done. Put out public review process. A year and a half before come to conclusion on ammo area.

Q: Has there been any fieldwork done.

~~**A:** October timeframe. Usually lasts 4-5 months.~~
Report is 4-5 months after that.

Q: Who has authority to see this is what we are doing?

A: Ordnance not as structured. We have used CERCLA as basis. We present it to RABS and general public for recommendations. Regulators can agree or disagree. Ultimate authority DOD Explosive Safety Board. Congress mandated. Made up of technical experts to oversee across the country.

6. Mr. Absalom introduced Mr. Rob Wilcox who gave the next presentation on Impact Assessment, The Road of Cooperative Risk Management. A copy of his handout is provided with these minutes. This is a portion of decision process after you do the site characterization. Some highlights of Mr. Wilcox's presentation:

- Everyone wants to avoid an OE accident. Communication failures are common. These failures are a result of attitude.

- Need to learn the community needs assessed with ordnance hazard, minimize the risk, manage residual hazards. It is a continuous process.

- Profile of Ordnance Accident. Dangerous stuff. Not something you want out in the public sector. Humans cause detonation. There have been 14-17 deaths since 1945. Land that has been released. That is 17 deaths in 55 years. Now have a low probability of accidents. Avoid consequences. Human behavior is the key item.

- Some contribution factors for potential for an OE accident:

Site stability - i.e, erosion causes problems.

Ordnance sensitivity - not fused, not sensitive. Not fused, not armed. Smaller bullets more sensitive.

Ordnance Density - More you have the bigger the hazard.

Ordnance Distribution- How many per unit area.

Individual Behavior - problems if don't follow rules.

Commitment

Institutional Behavior

Site access - who has access, how get in there.

Site Use - how its used, people issue

- In San Diego in 1983 two children were killed. Brought in wrongful loss lawsuit. The Government was dismissed. Three clearance efforts were done before property was released. Judge ruled the government did all it could do.

- Problems go with the law. Superfund Amended. Gives DOD responsibility that far exceeds authority to deal with it. We cannot deal with any of this if we don't get right of entry from the landowner. Need to work with the state and government landowners.

- Because OD behavior issue rules on state and governmental level.

- It is our responsibility make it as safe as we can and everyone do what they can to do it.

- Event Tree -

Presence. If not present, no OE accident

Access. No people, no possibility of accident

Behavior. If appropriate no accident

- If not present, no accident. These are all dependent on eachother.

- Now ordnance there. Can resolve by taking away? Can't get 100%. Access restriction to deal with.

- Behavior also applies to institutional behavior. No way to guarantee.

- Should have alternatives to cover strategies to eliminate chance of accident.

- Confidence in program.

7. Mr. Absolom opened the floor for open discussion.

8. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members will be on March 21, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:

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

RICHARD A. DURST
Community Co-Chair



Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

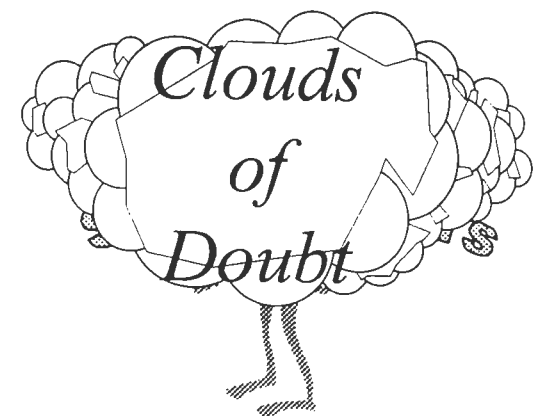


Common Goals

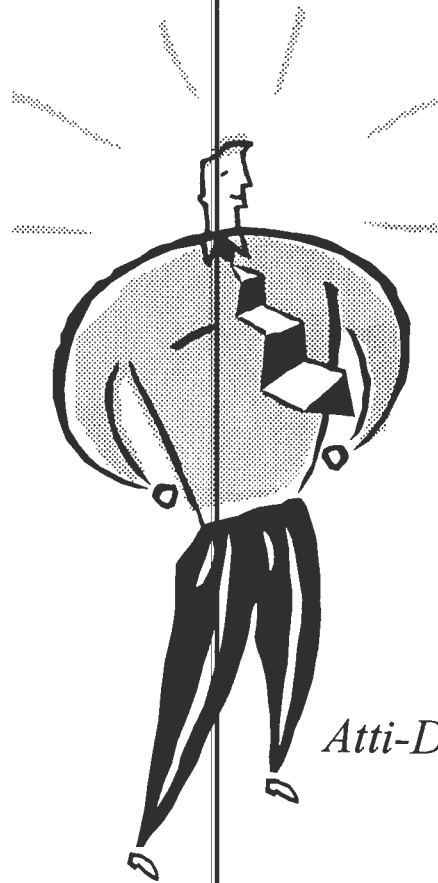
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- etc.



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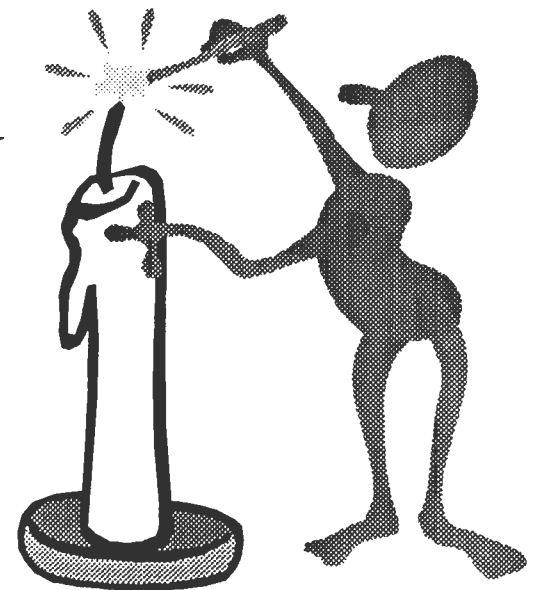
Atti-Dude

- Polluters have encumbered their communities and thereby owe a debt
- Polluters must pay to remove all detectable contamination

**Reducing Risk September 1998 Lenny Siegal*

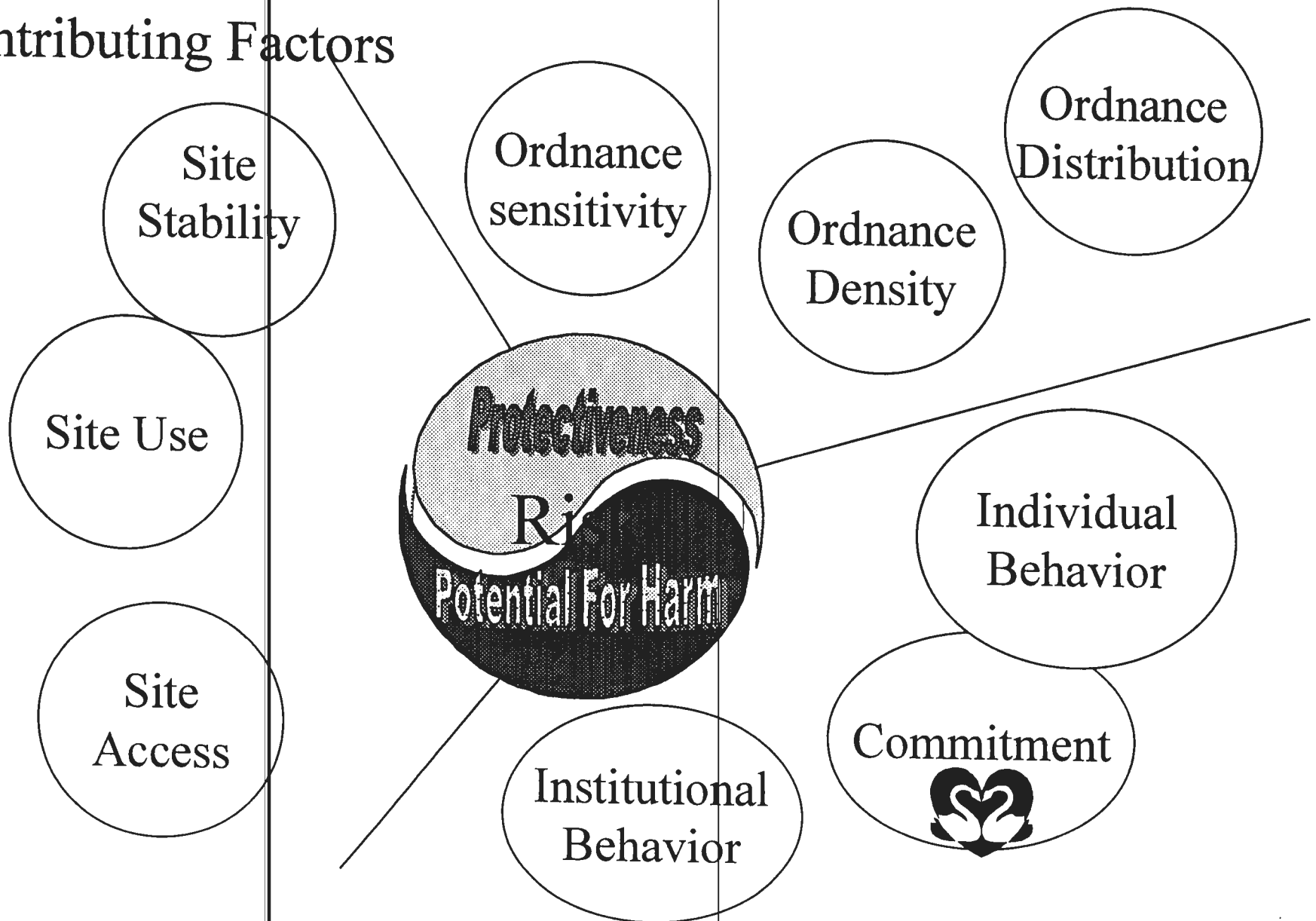
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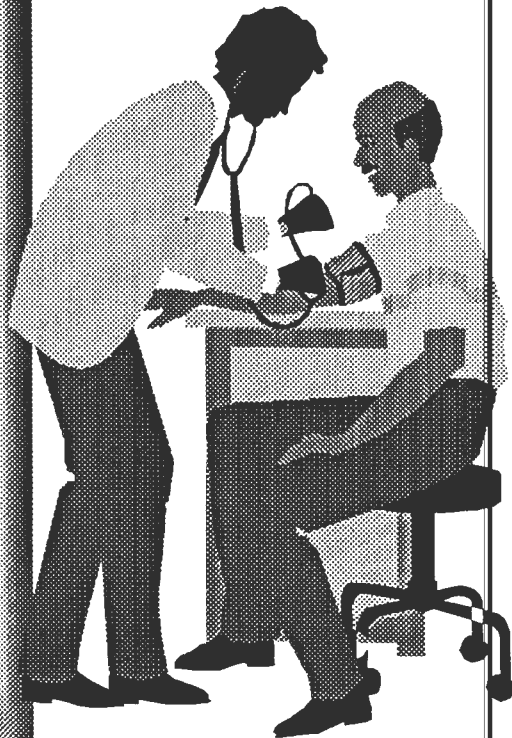


Potential for an OE Accident

Contributing Factors

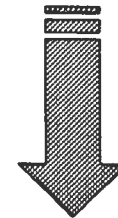


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- etc

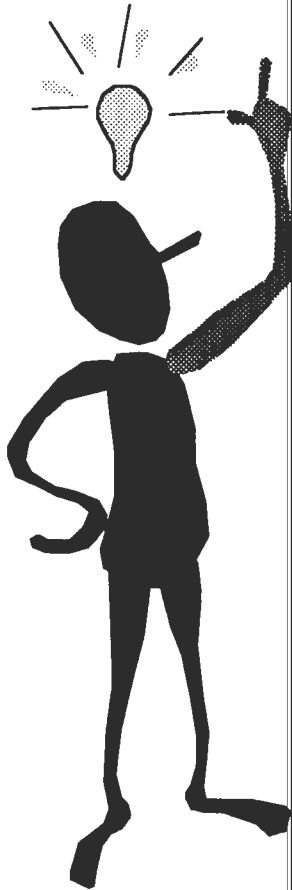
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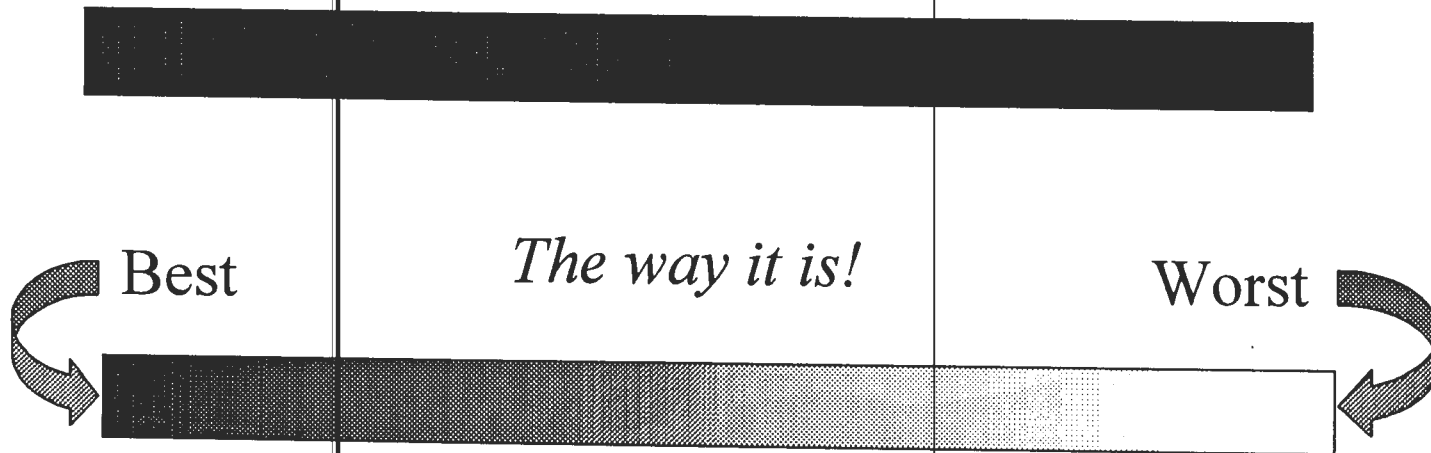
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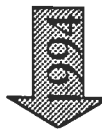
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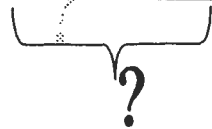
The way we wish it were.



No distinct boundary



Try for Improvement



Measuring Protectiveness

Ordnance			Site			People		
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No Change



Significant Improvement



Sustained Improvement



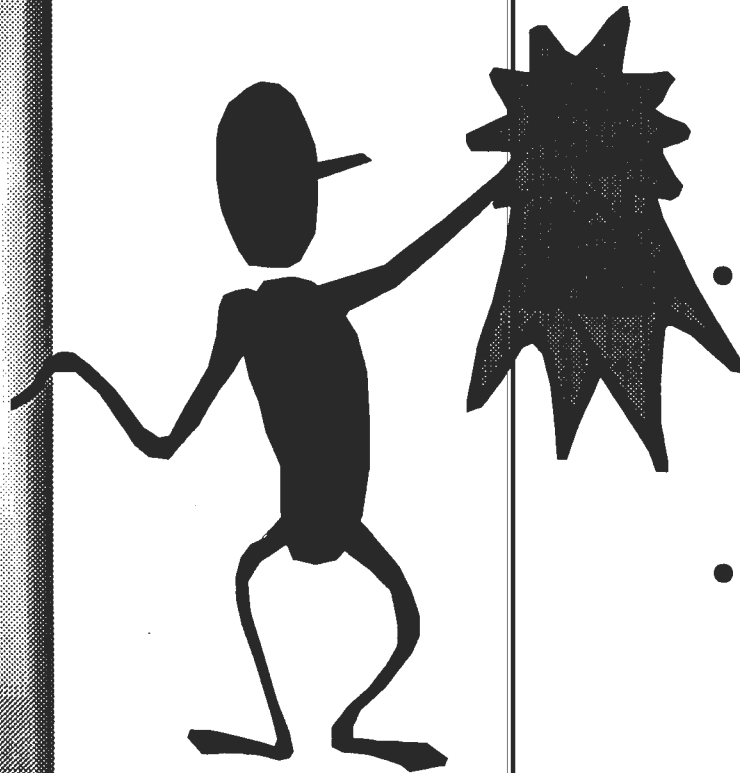
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Serious Deterioration

Figures assigned by comparison to previous 5 year interval

The Project Remains Protective



- No Deterioration
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Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

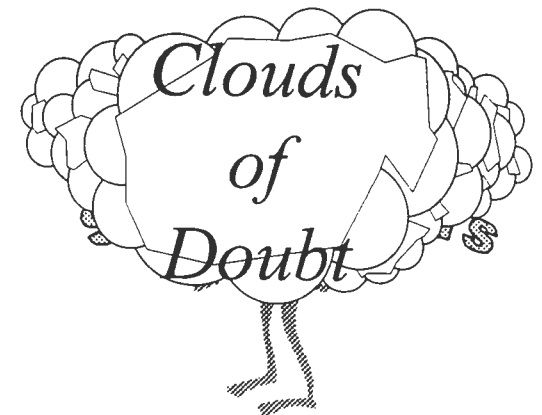


Common Goals

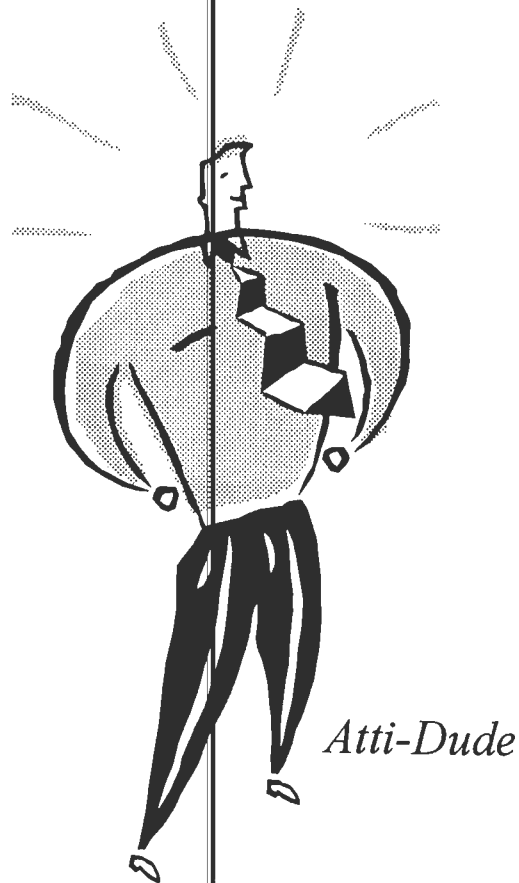
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- etc.



Interest Group Attitudes*

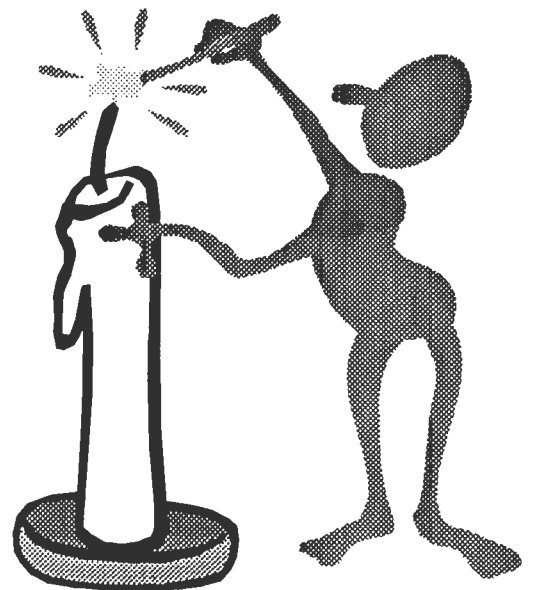


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- Polluters must pay to remove all detectable contamination

**Reducing Risk September 1998 Lenny Siegal*

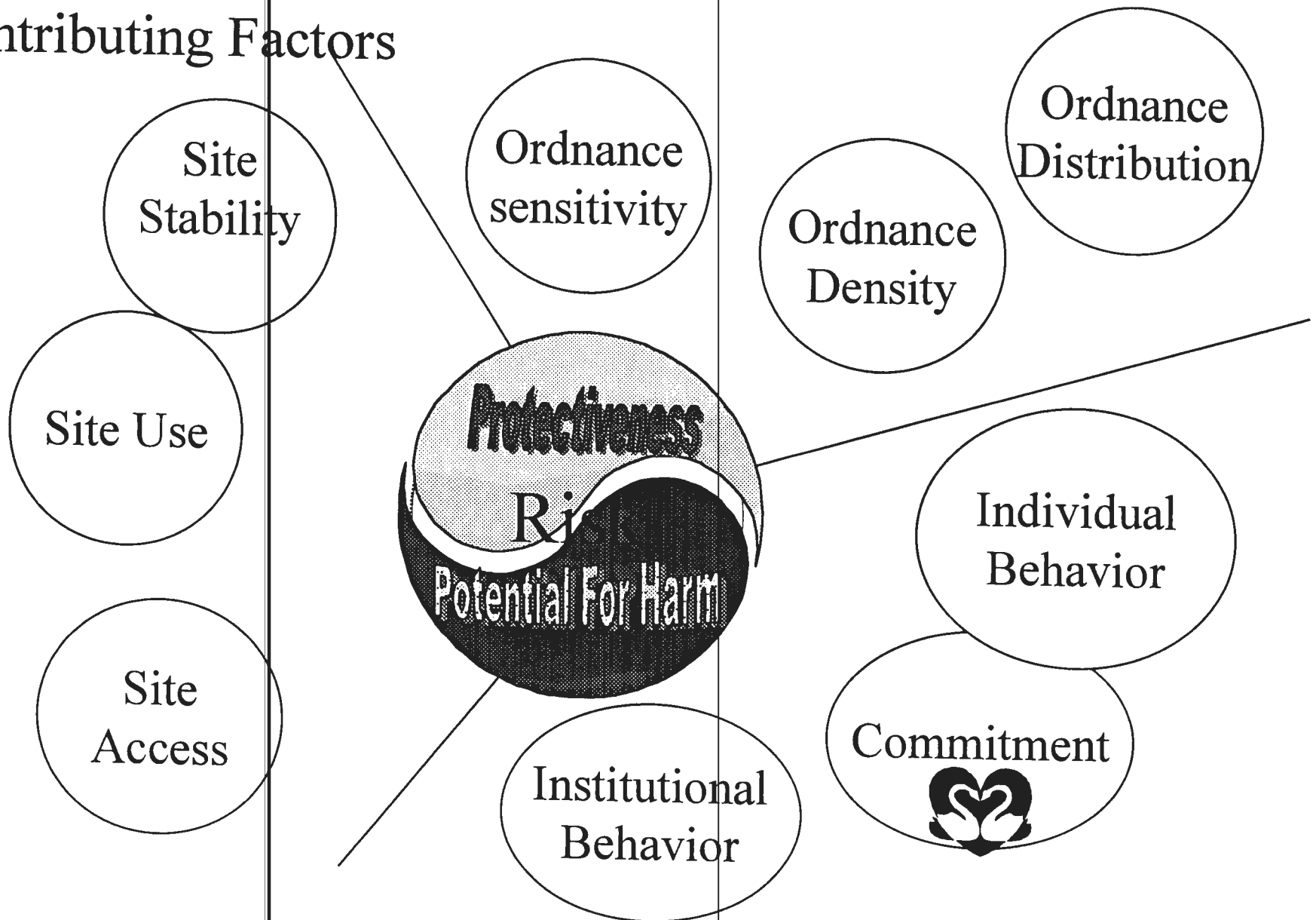
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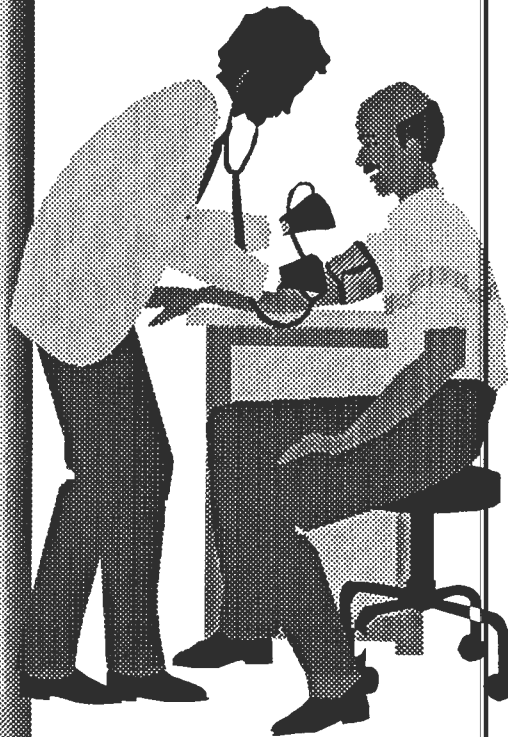


Potential for an OE Accident

Contributing Factors

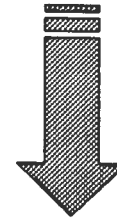


Direct measurements are not always possible



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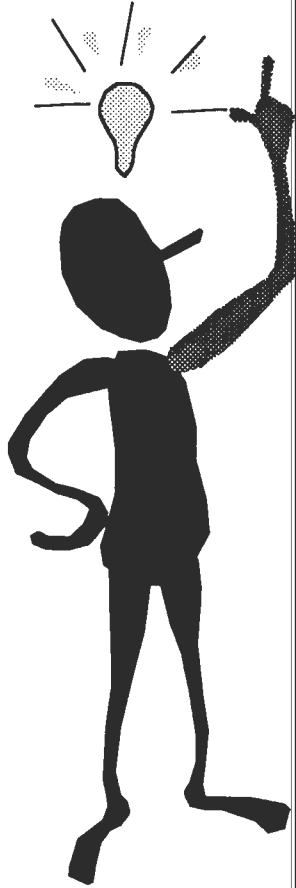
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Similarly, we will measure “protectiveness” indirectly

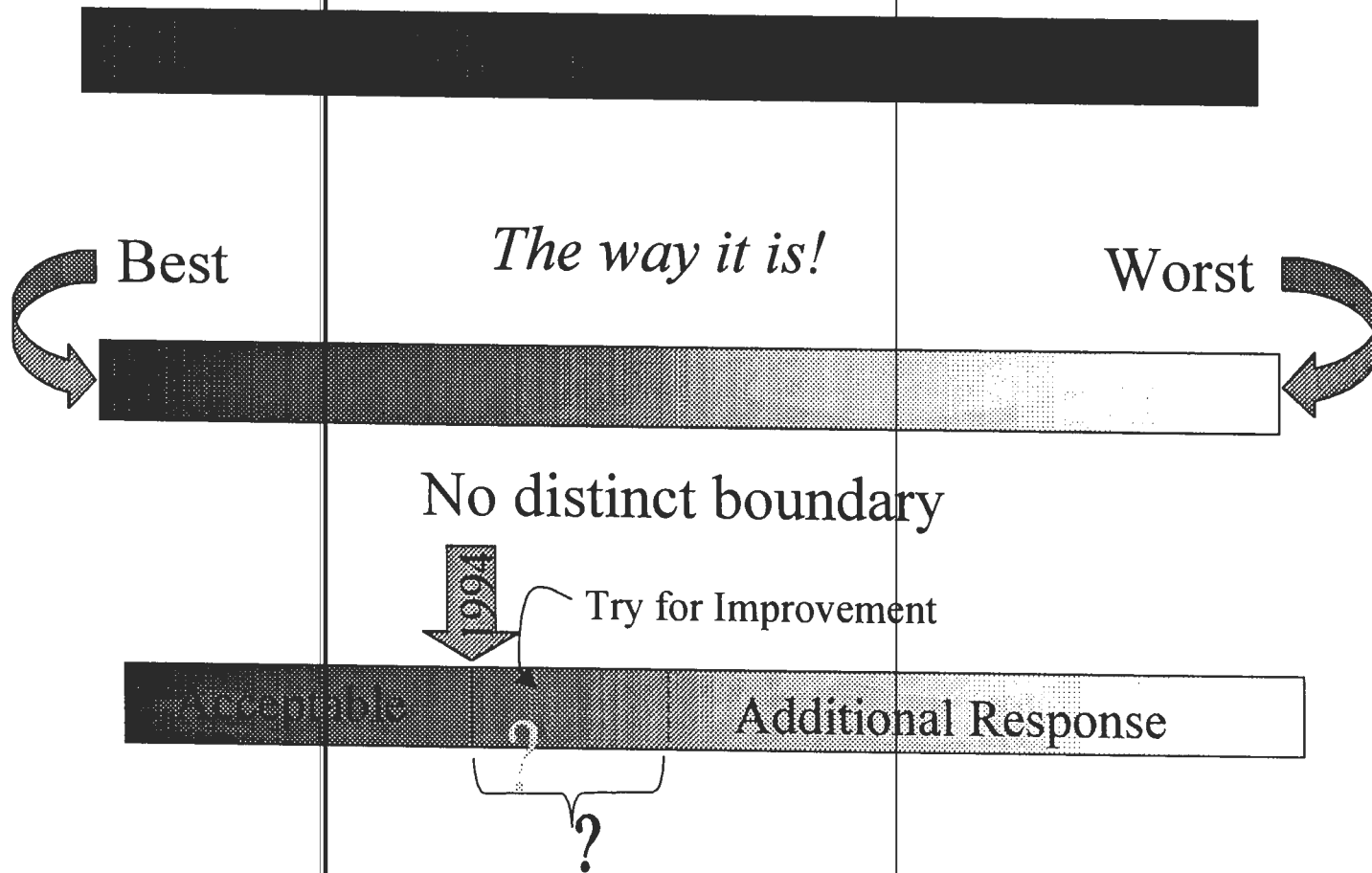
Protectiveness



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Measuring Protectiveness

The way we wish it were.



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Significant Improvement



Sustained Improvement



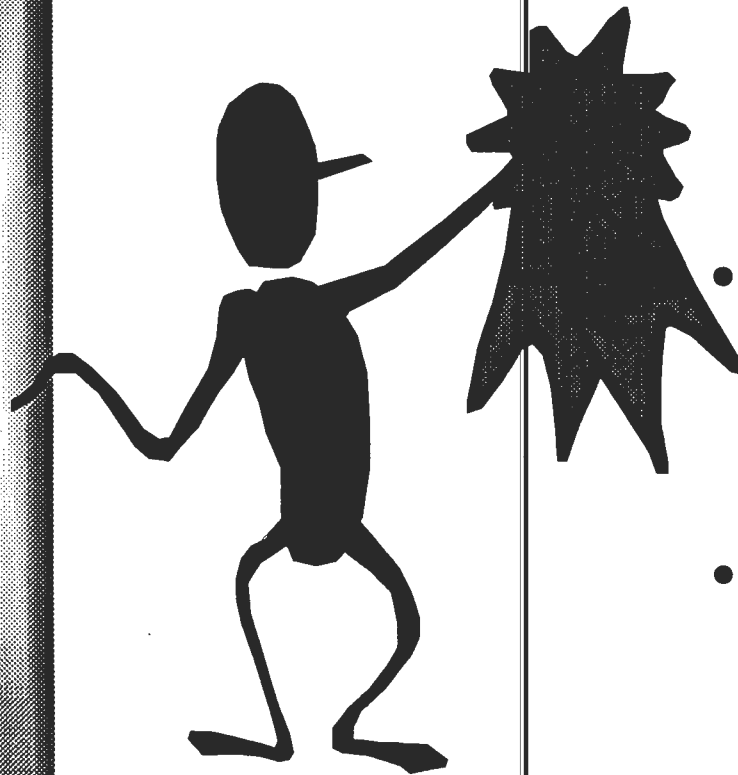
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Serious Deterioration

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Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

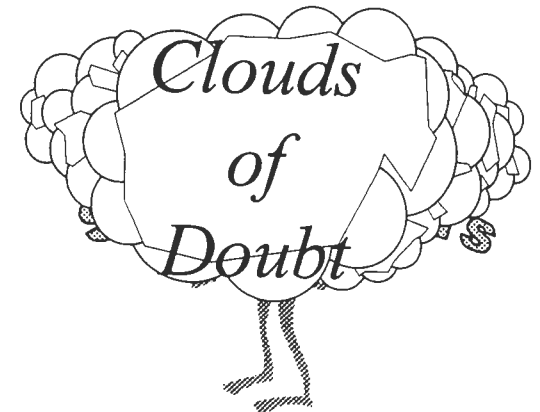


Common Goals

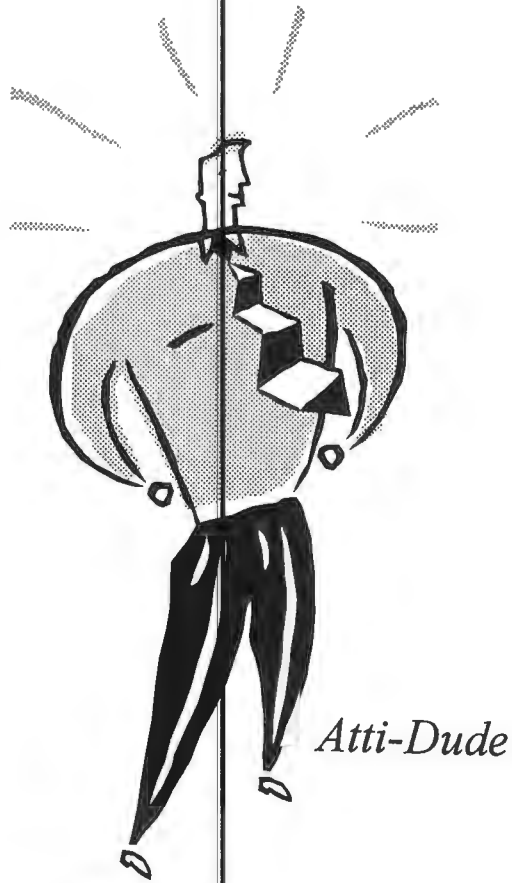
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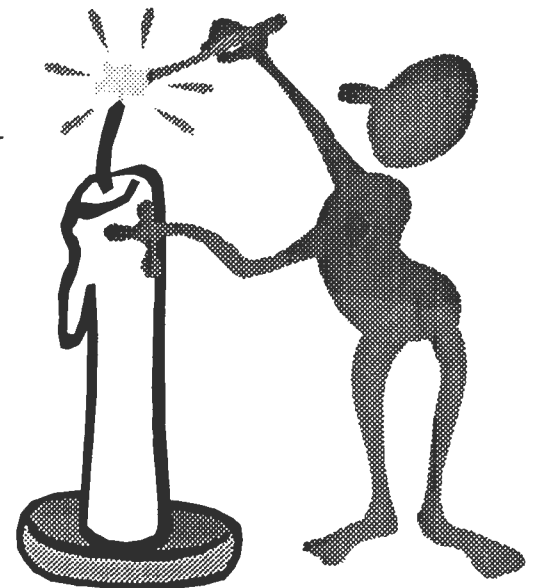


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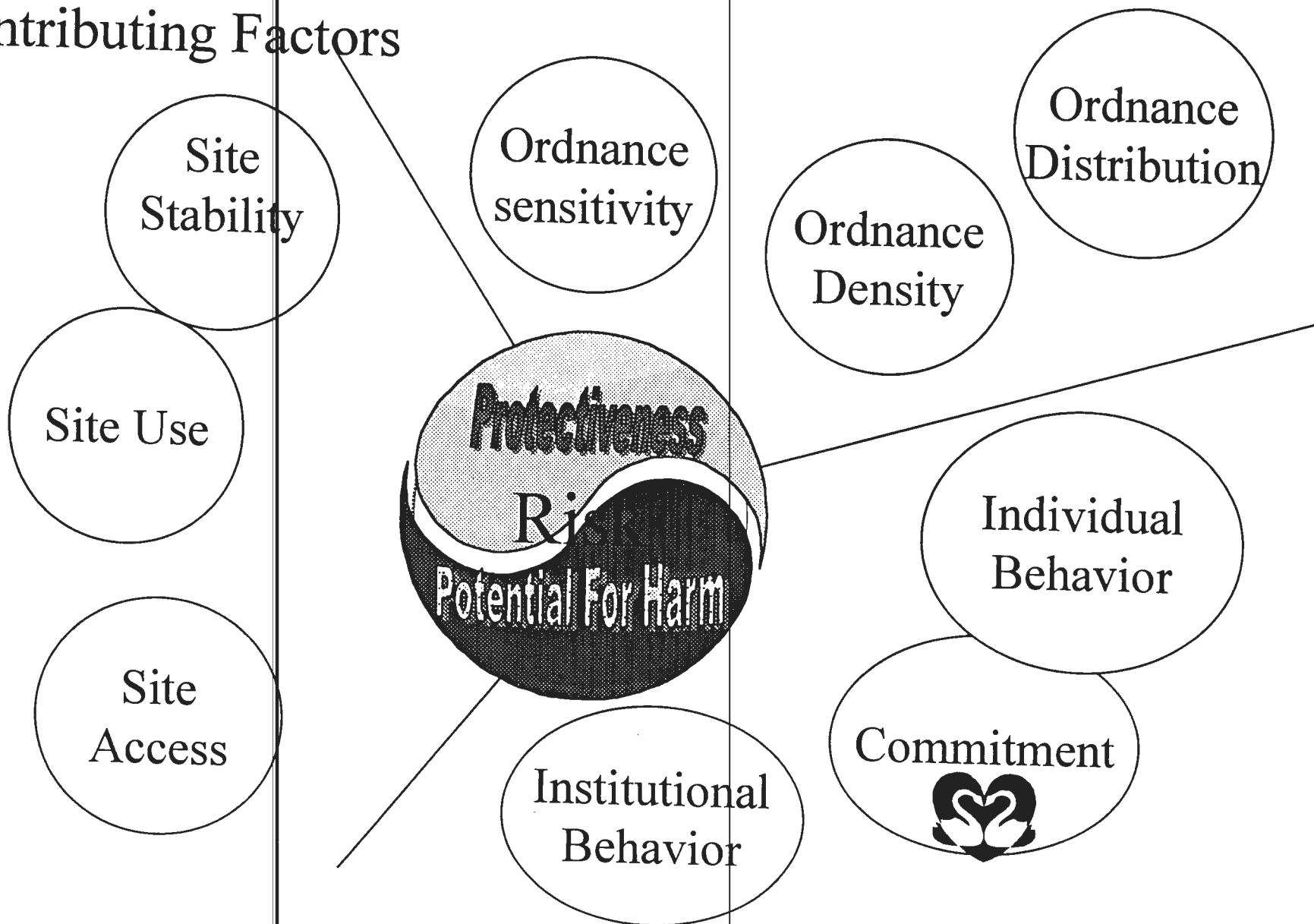
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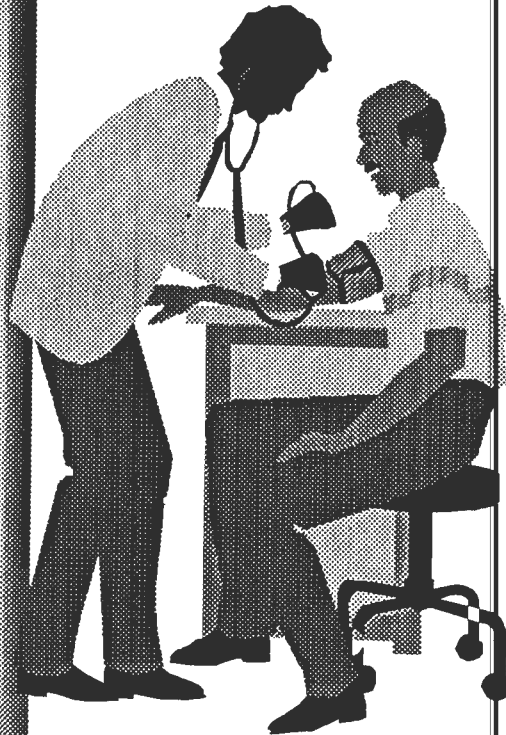


Potential for an OE Accident

Contributing Factors

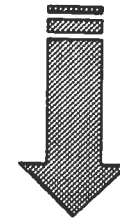


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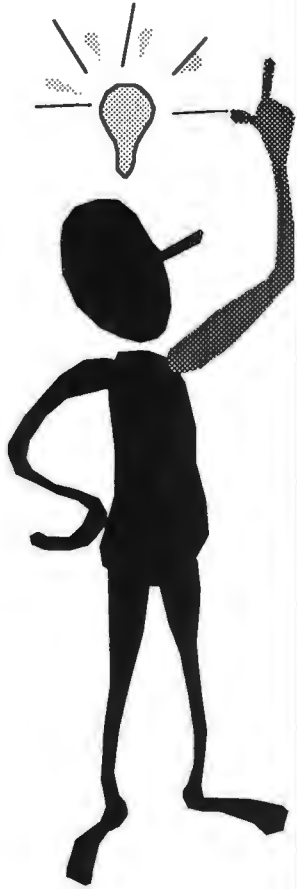
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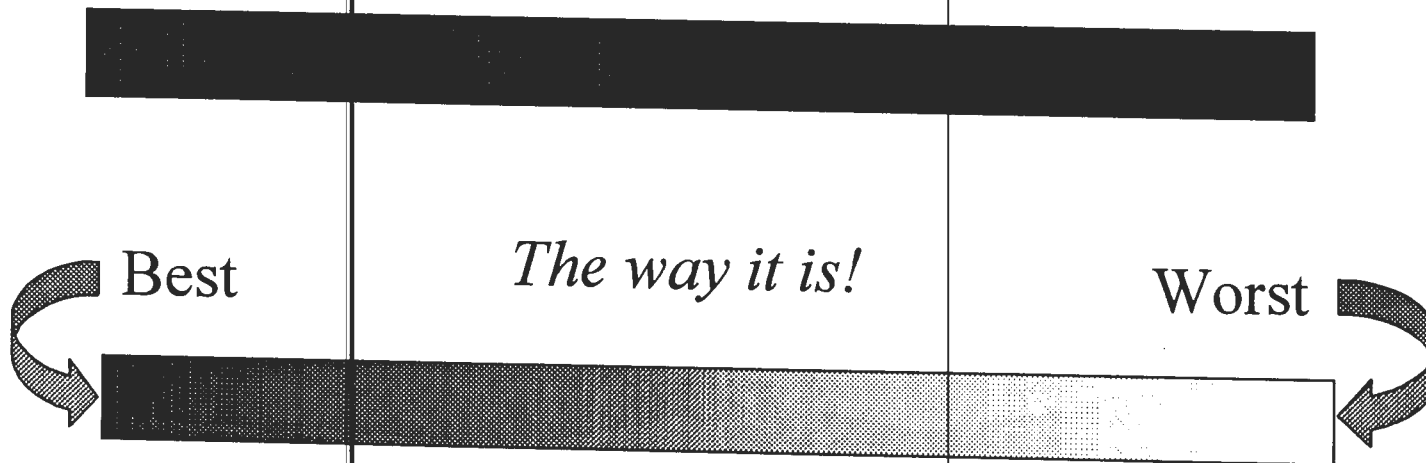
Protectiveness



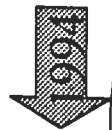
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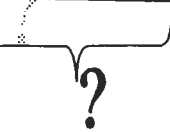
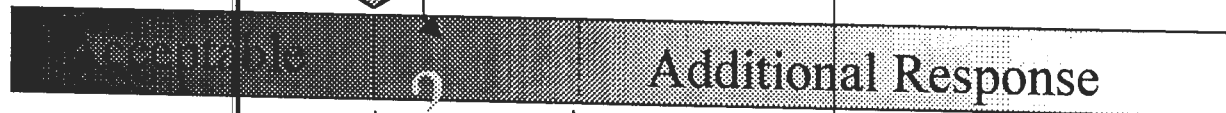
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Try for Improvement



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Significant Improvement



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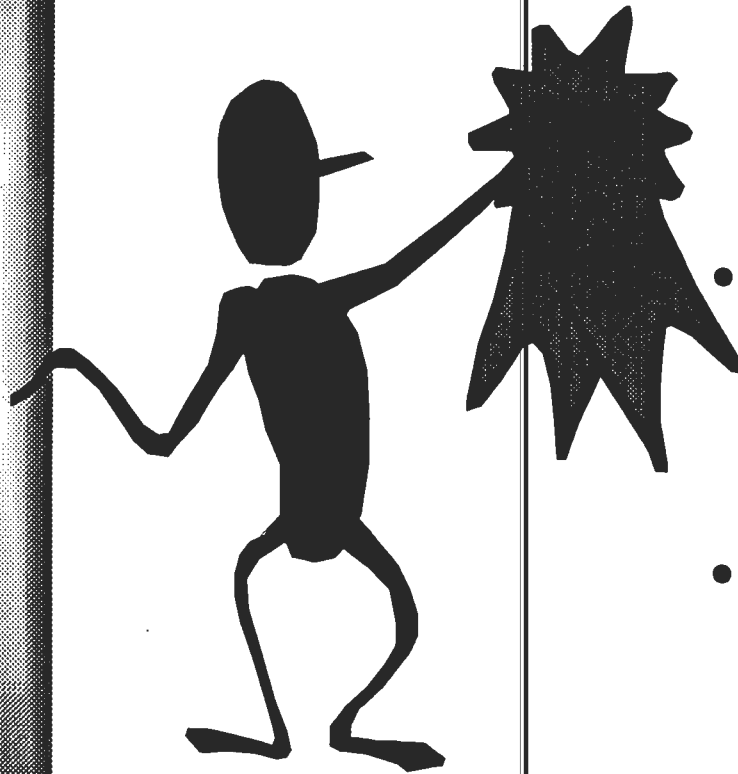
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Serious Deterioration

Figures assigned by comparison to previous 5 year interval

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Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

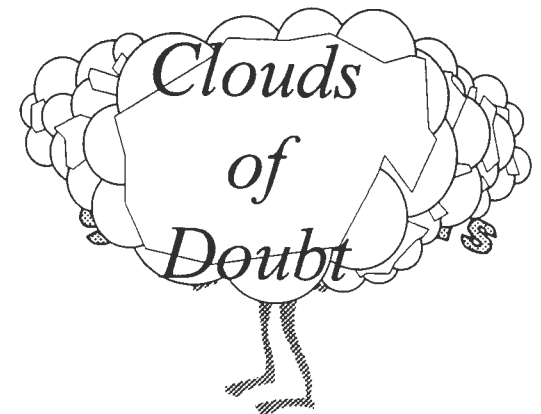


Common Goals

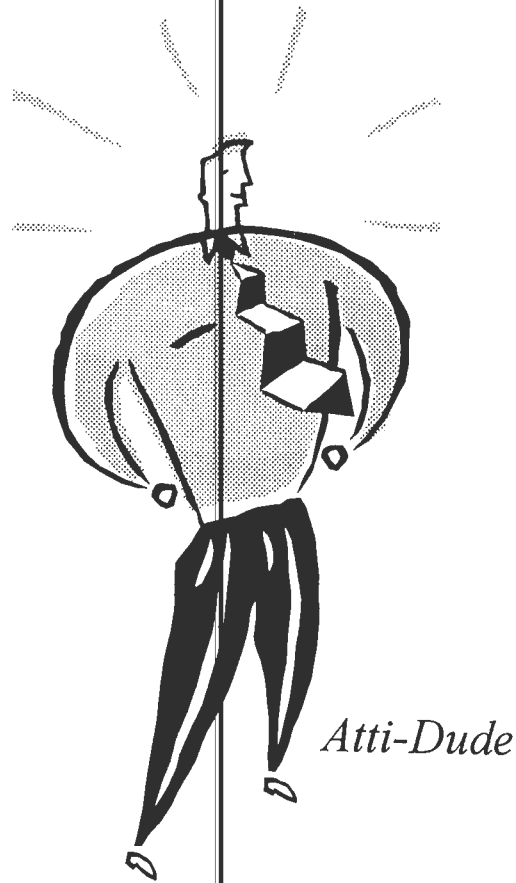
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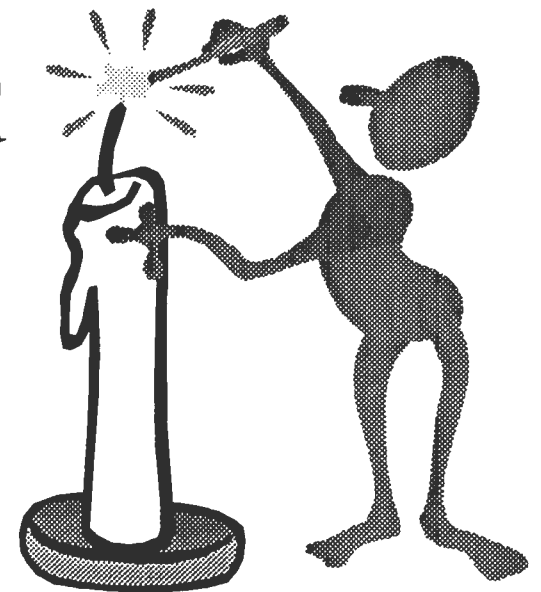


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**Reducing Risk September 1998 Lenny Siegal*

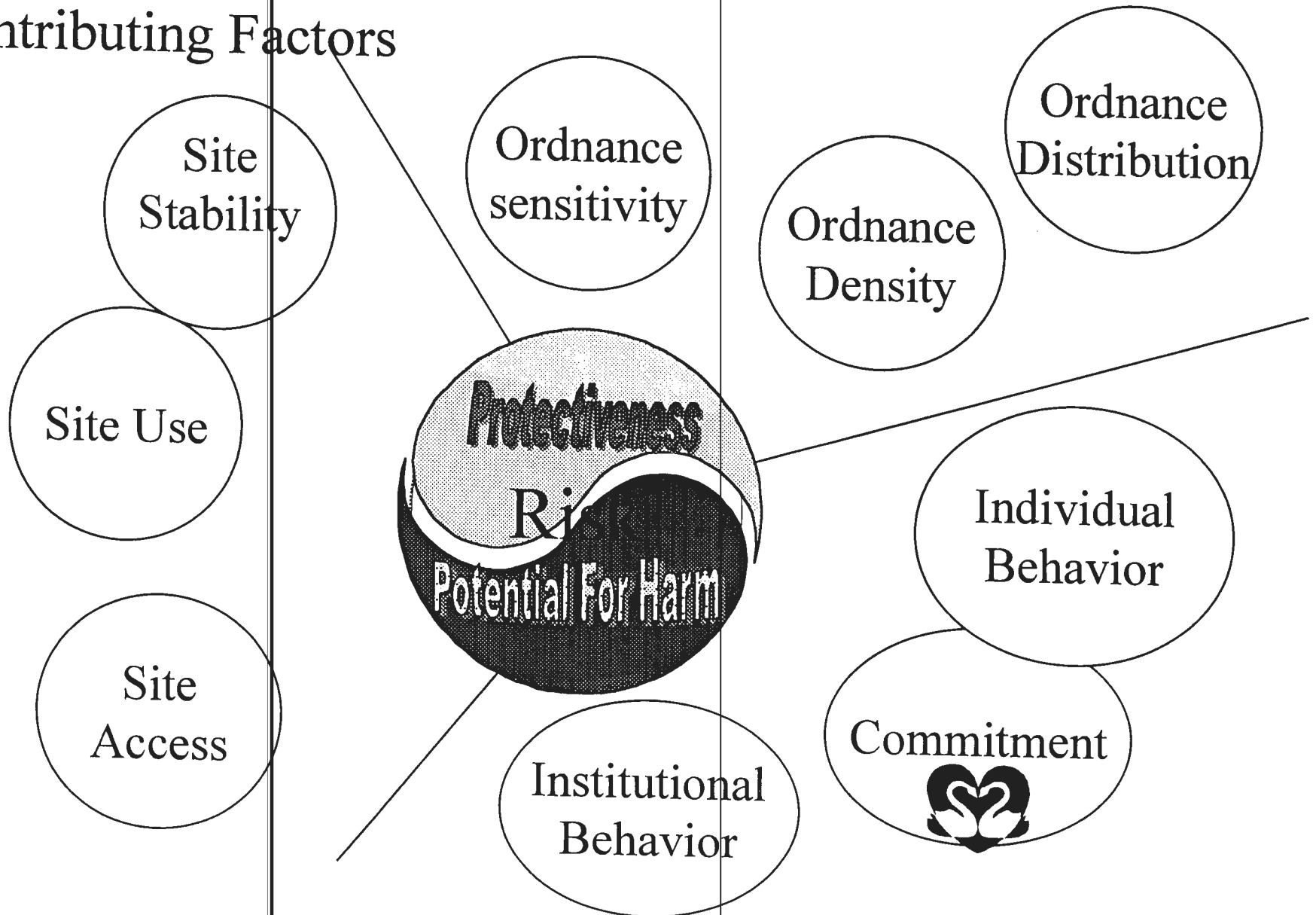
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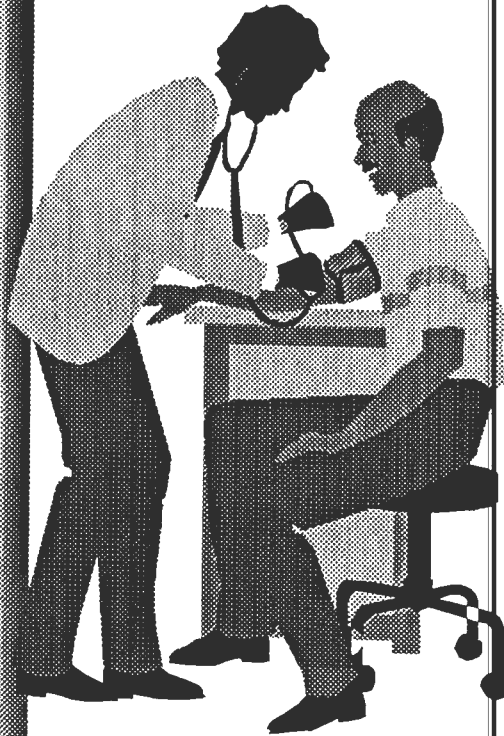


Potential for an OE Accident

Contributing Factors

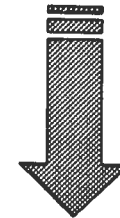


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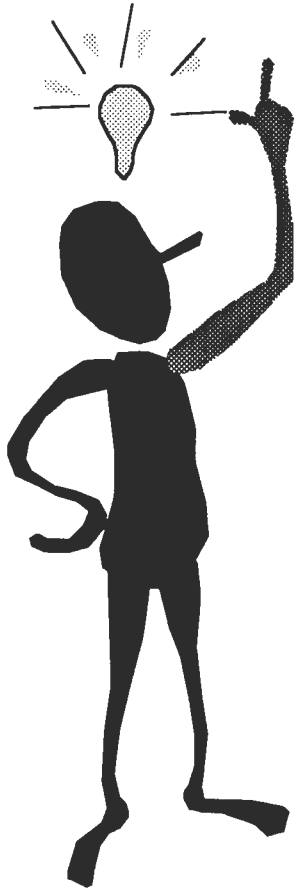
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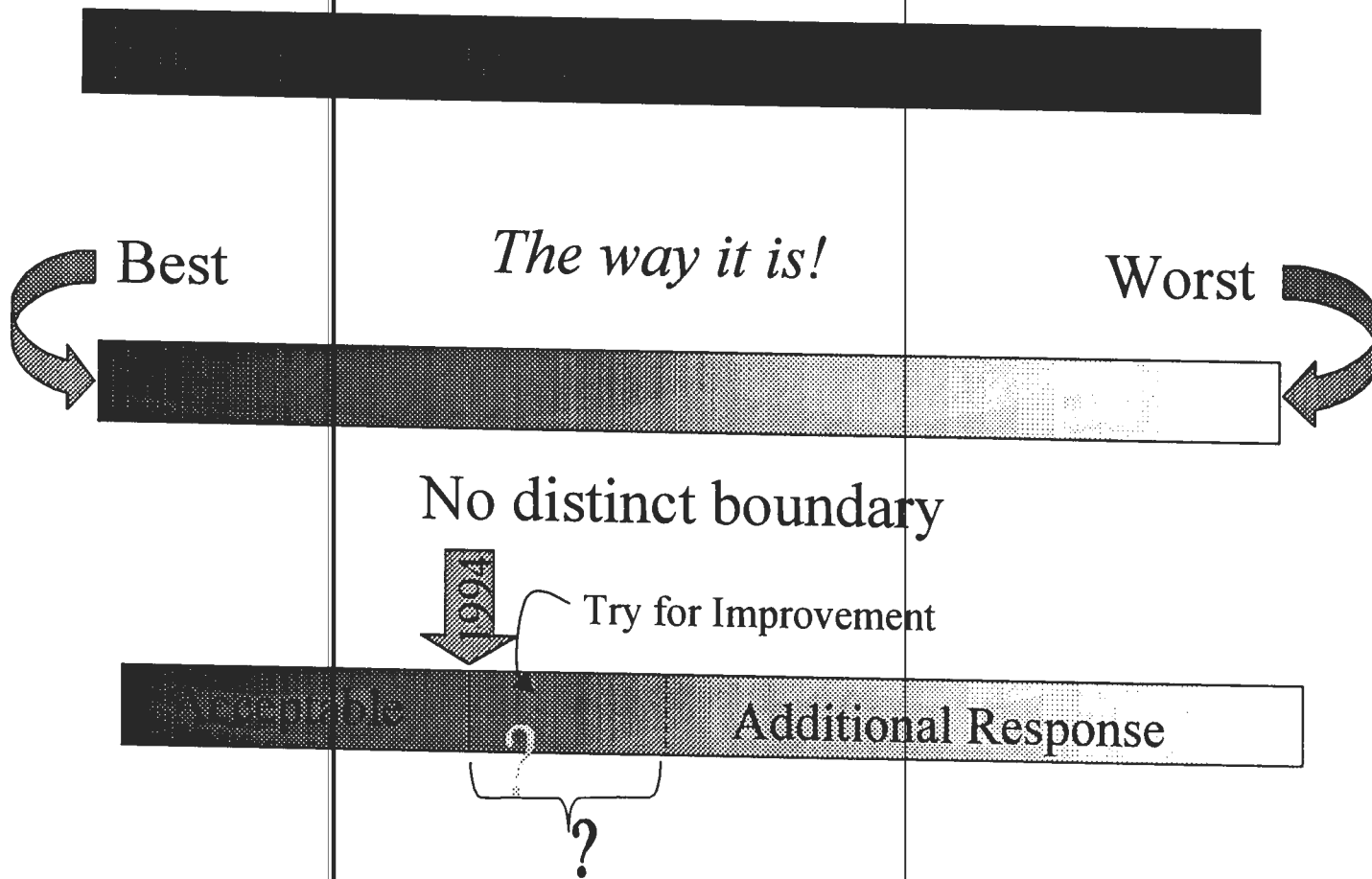
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Sustained Improvement



Needs Improvement

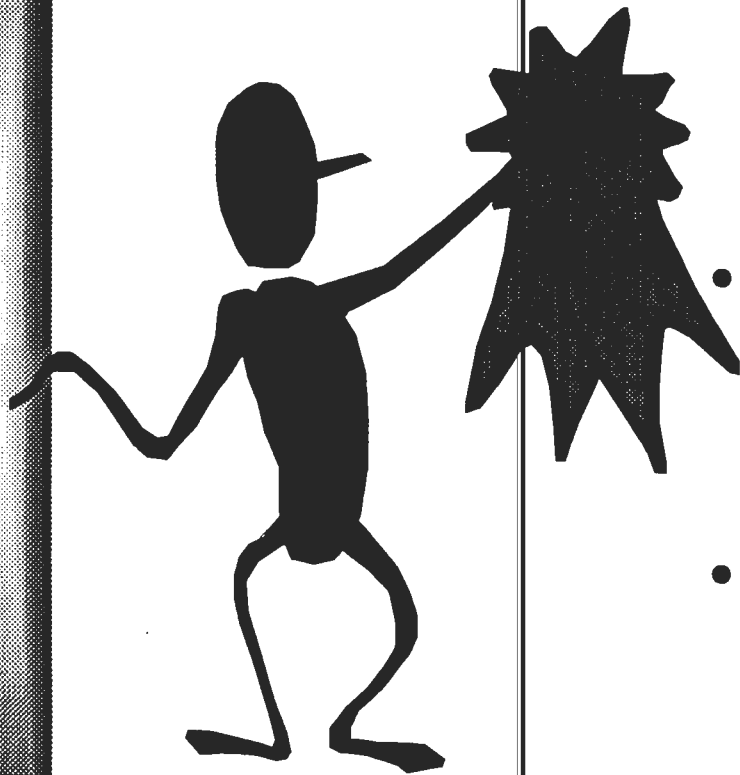


Serious Deterioration

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Impact Assessment

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CEHNC-OE-CX

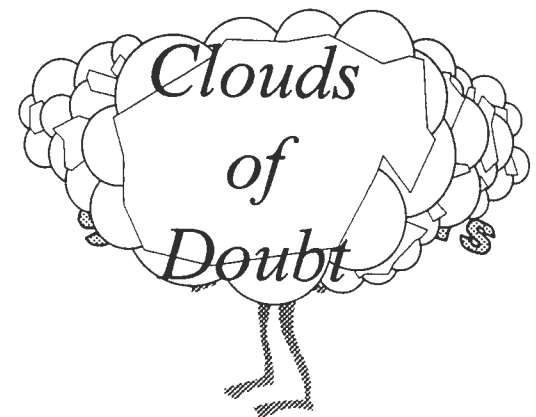


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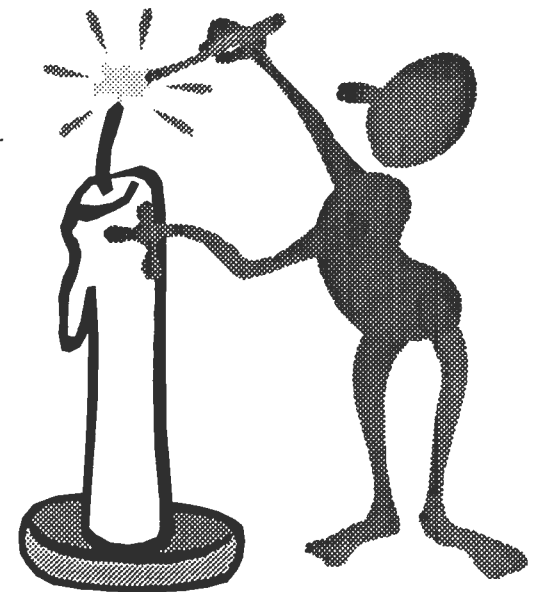
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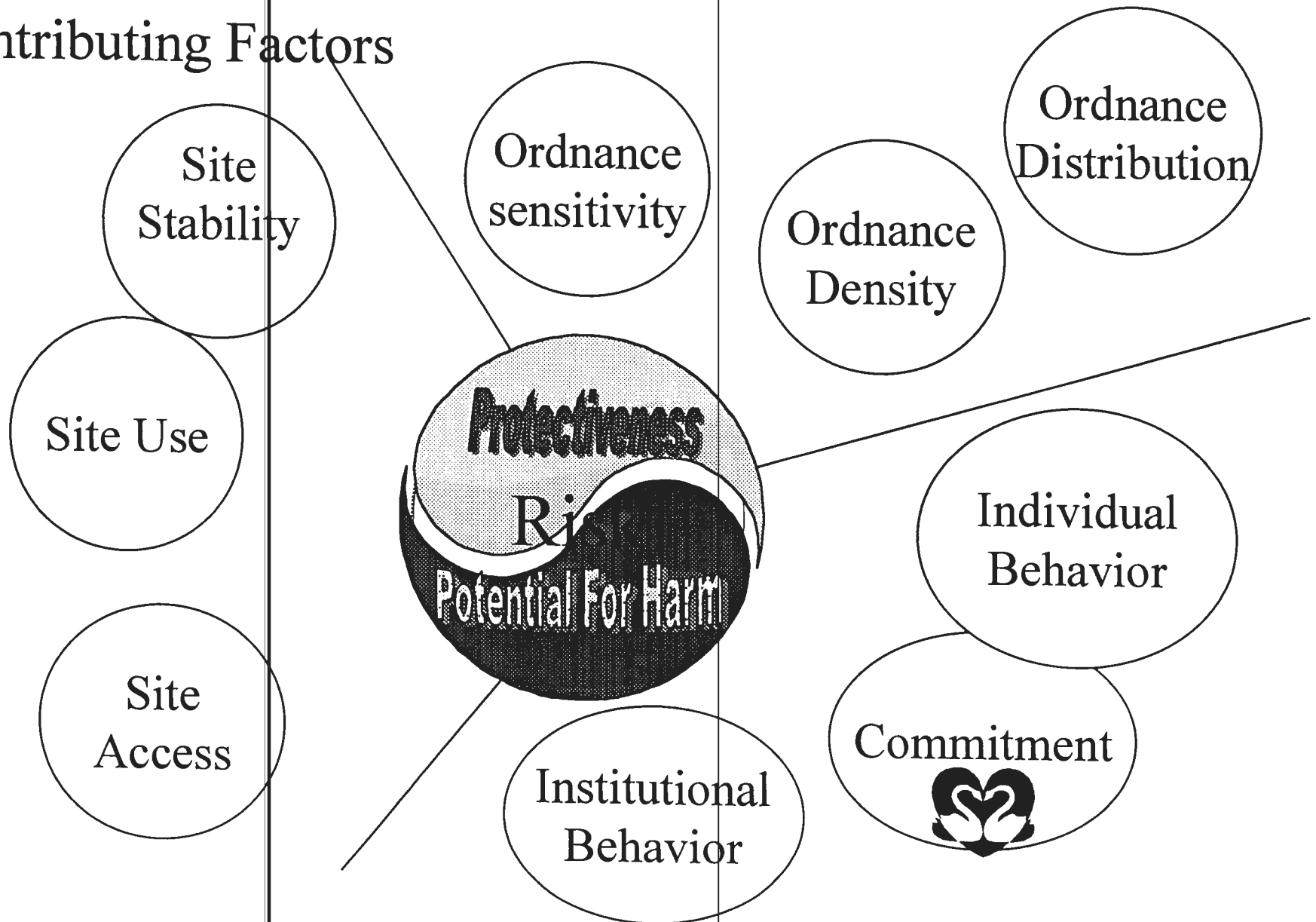
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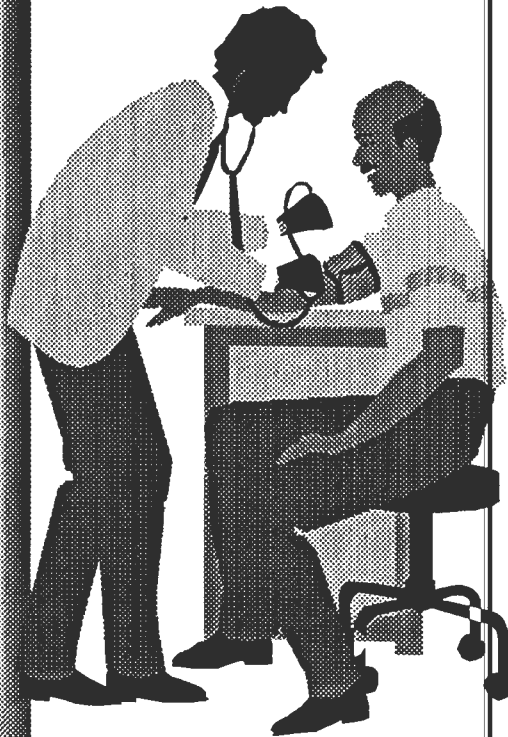


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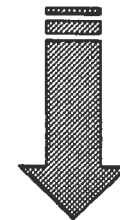


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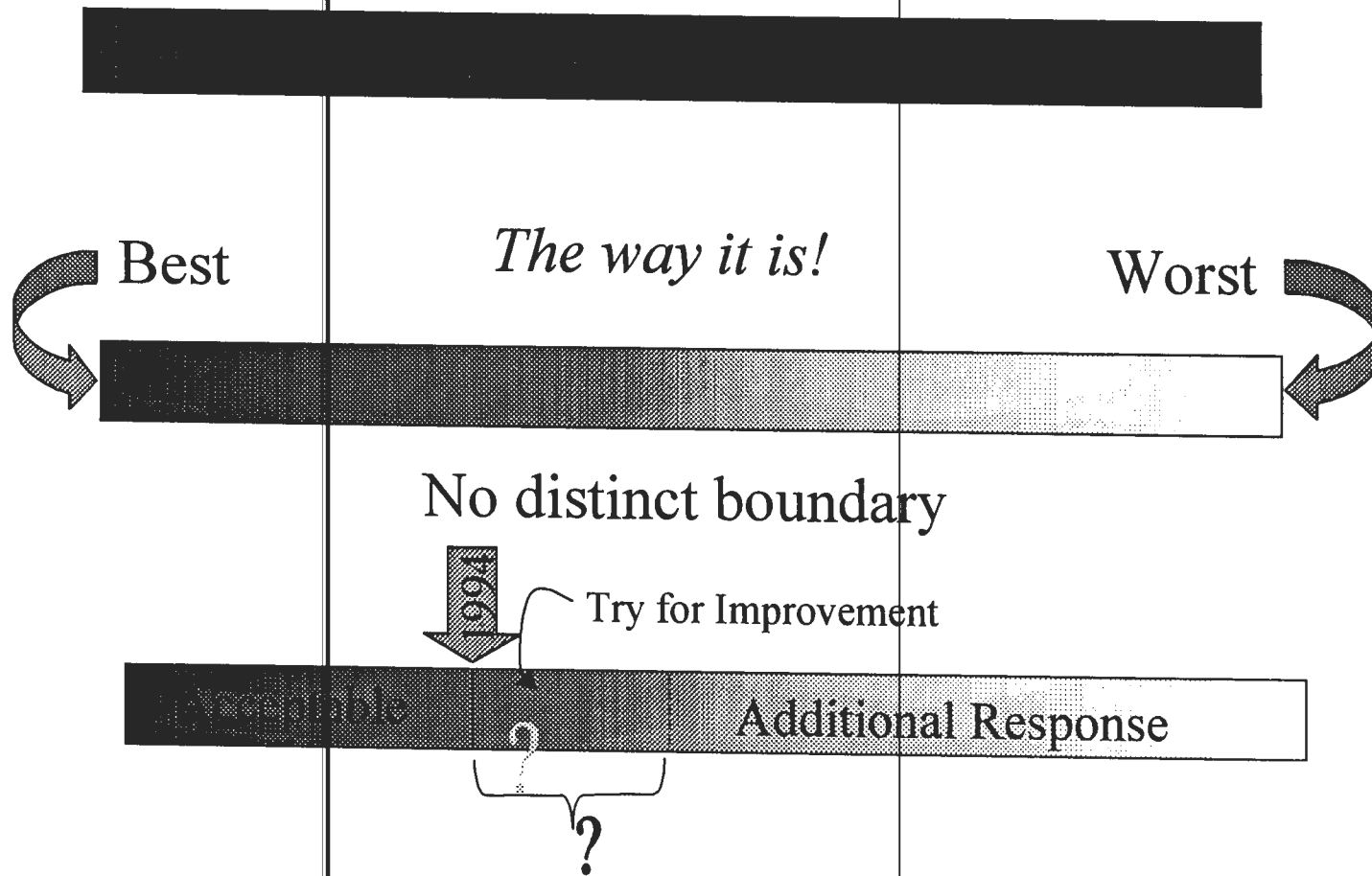
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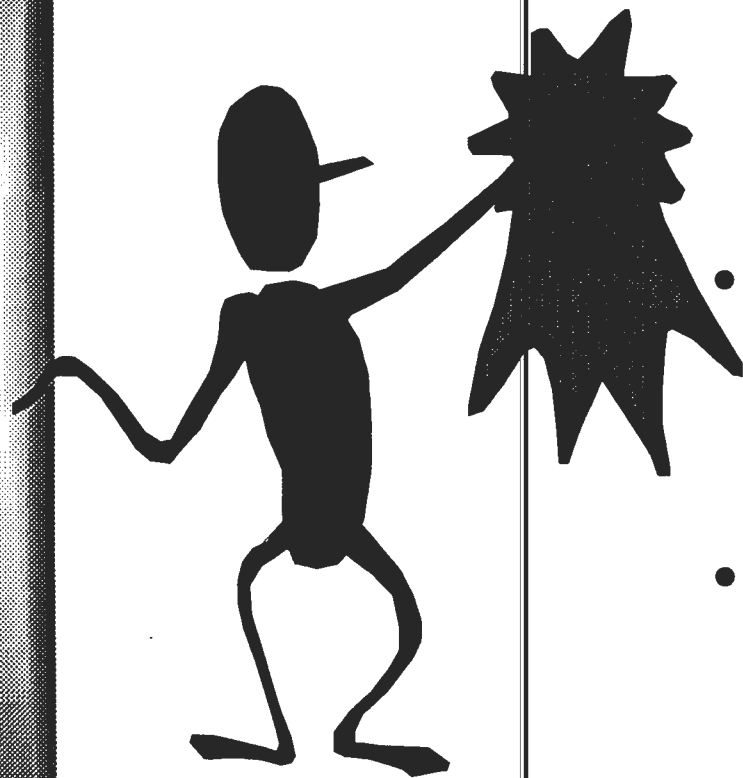
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 - Some efforts need improvement



Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX



Common Goals

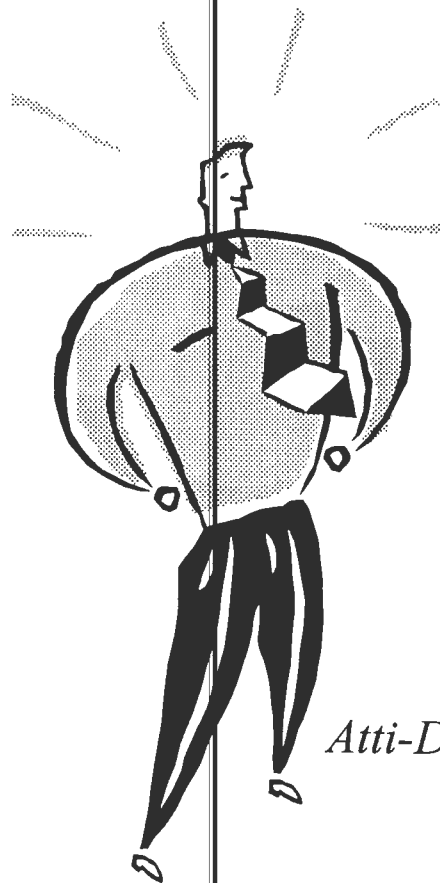
- Everyone wants to avoid an OE accident
 - Property Owners
 - Regulators
 - Community Leaders
 - Other Stakeholders
 - Responders
- Communication failures are common

Attitudes

- Ordnance response is exclusively a safety issue.
- Stakeholder input is only valuable after we have characterized the site and selected a plan.
- Stakeholders, regulators and property owners should be more considerate of our schedule
- etc.



Interest Group Attitudes*



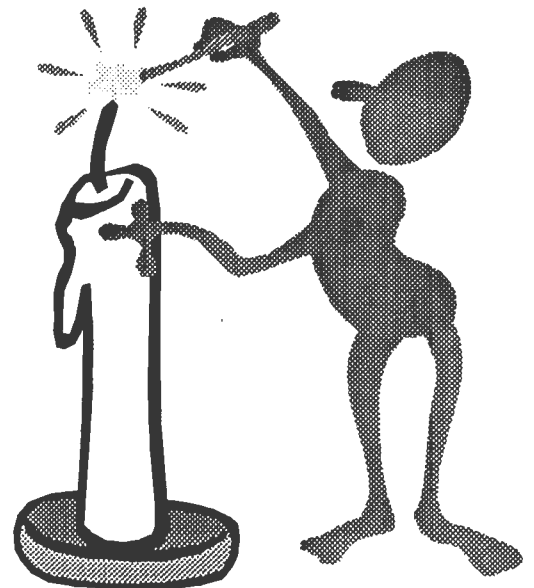
Atti-Dude

- Polluters have encumbered their communities and thereby owe a debt
- Polluters must pay to remove all detectable contamination

**Reducing Risk September 1998 Lenny Siegal*

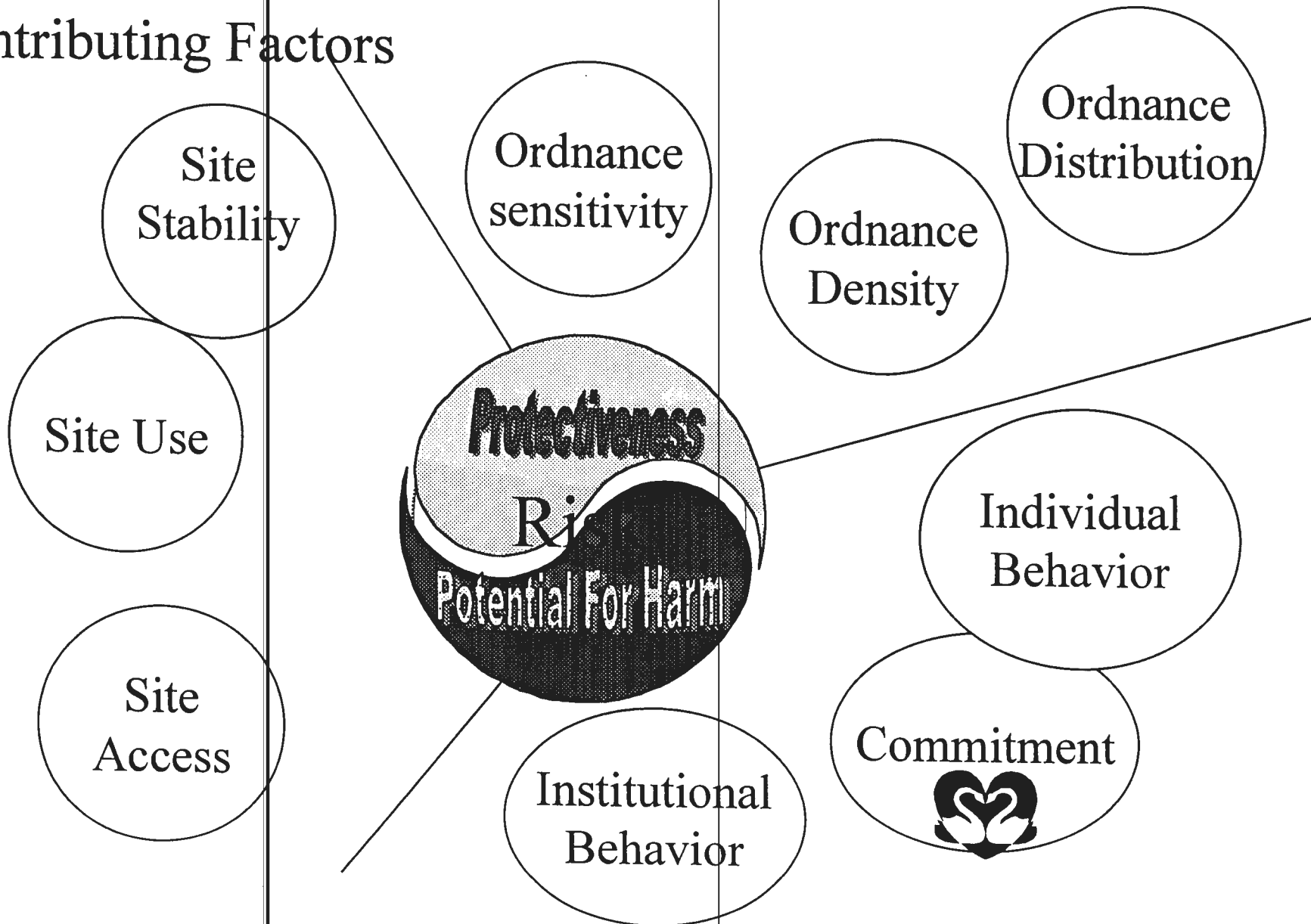
The Army Risk Management Strategy

- Learn the Mission
- Minimize the Risk
- Manage Residual Hazards
- It Is a Continuous Process
Applicable to Any Situation and
Environment.

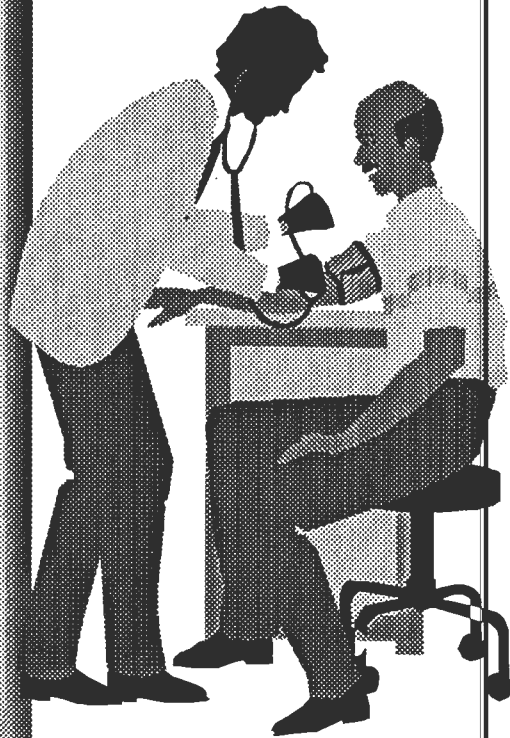


Potential for an OE Accident

Contributing Factors

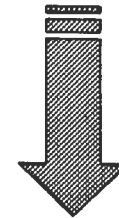


Direct measurements are not always possible



- Blood Pressure
- Temperature
- Height
- Weight
- Blood Count
- etc

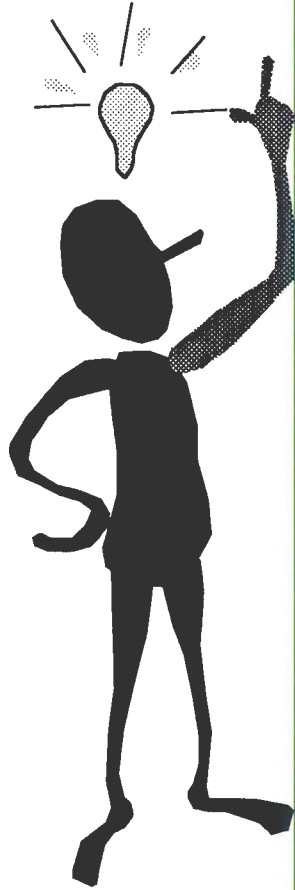
Are not direct measurements of a persons health



They are symptoms that can build a case for an assessment of a persons health

Similarly, we will measure “protectiveness” indirectly

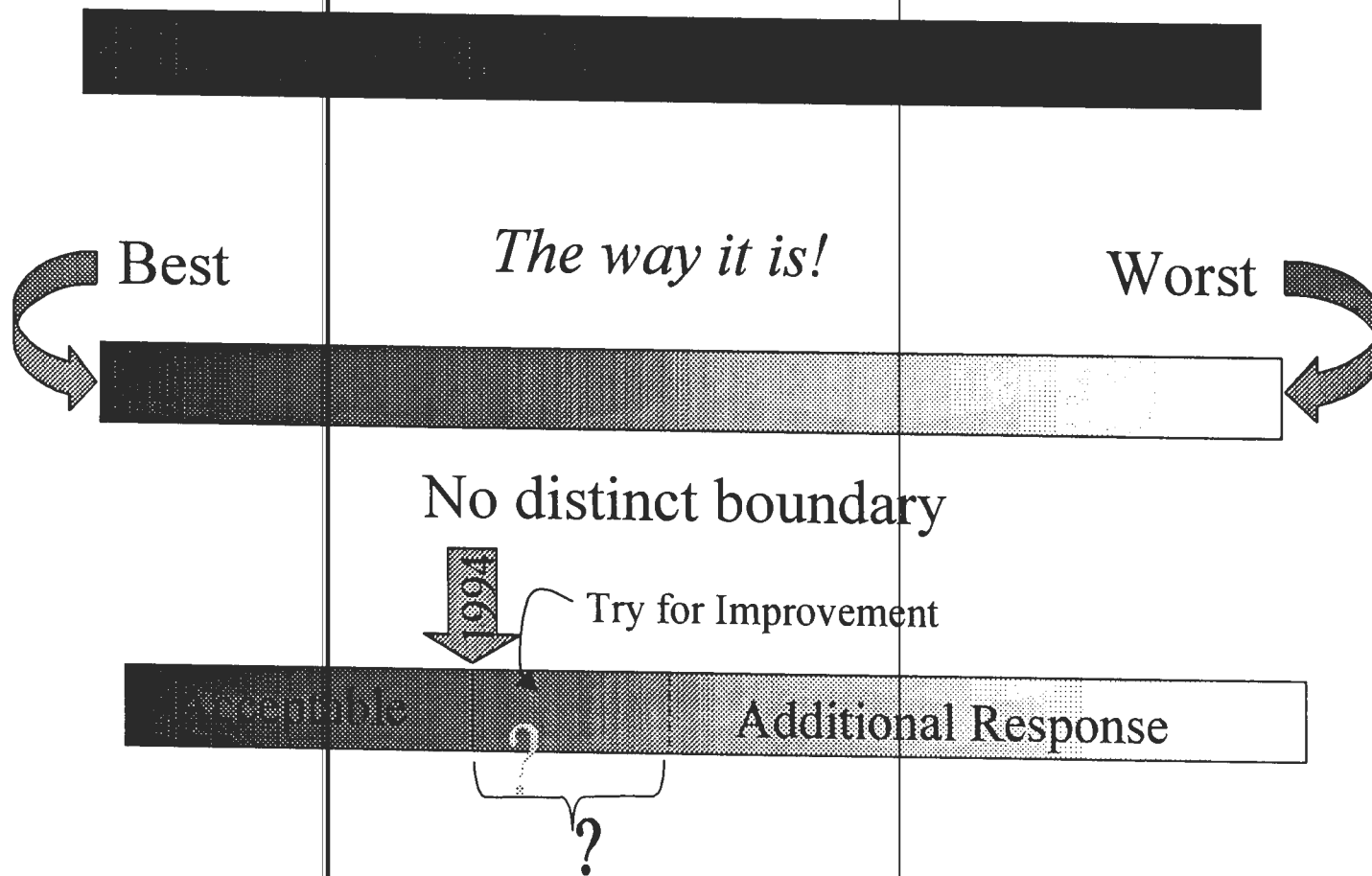
Protectiveness



- Future Without Project Condition
- Selected Alternative Project Condition
- The Difference Defines the Impact or Benefit!

Measuring Protectiveness

The way we wish it were.



Measuring Protectiveness

Ordnance			Site			People		
Sensitivity	Density	Distribution	Use	Access	Stability	Individual	Agency	Commitment
Before Response(1989)								
EC	EC	EC	EC	EC	EC	EC	EC	EC
After Response (1994)								
Recurring Review (1999)								

EC = Existing Condition



No Change



Significant Improvement



Sustained Improvement



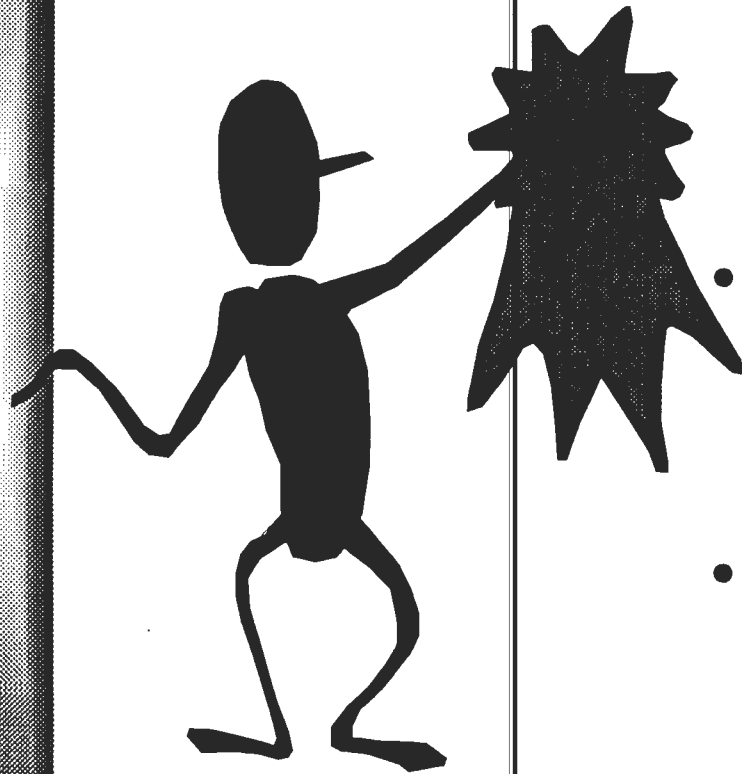
Needs Improvement



Serious Deterioration

Figures assigned by comparison to previous 5 year interval

The Project Remains Protective



- No Deterioration
 - Ordnance Density
 - Ordnance Distribution
- Site improvement
 - Vegetation limits access
 - Vegetation controls erosion
- Behavior Improves
 - Agency Commitment is excellent
 - Overall personal responsibility
 - Some efforts need improvement

MINUTES
RESTORATION ADVISORY BOARD
January 18, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Julio Vazquez, U.S. Environmental Protection
Agency

Dan Geraghty, NYS Department of Health
James Quinn, NYS Department of Environmental
Conservation

Community RAB Members Present:

Richard Durst, Community Co-Chair
Antje Baeumner, Bob McCann,
Ken Riemer, Dave Schneider, Jan Schneider,
Fred Swain, Karen Tackett, Henry Van Ness,
David Wagner

Community RAB Members Not Present:

Jeffrey Beall (excused), Brian Dombrowski (excused),
Frank Ives (excused), Patricia Jones (excused),
Russell Miller, Ray A. Young (excused),
Frankie Young-Long (excused)

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.
Keith Hoddinott, USACHPPM
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Project Office, Construction
Division
Michelle Brock, U.S. Army Corps of Engineers,
New England District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the November meeting. There were no changes and the minutes were signed and entered into the record.

4. Mr. Absolom then introduced our speaker, Mr. Michael Duchesneau, who gave a presentation on Proposed Recommendations for SEAD-13, IRFNA Disposal Site and also the pilot study being done at the Ash Landfill. A copy of the handout is forwarded with these minutes. Some highlights from Mr. Duchesneau's presentation:

- Results and recommendations have not been reviewed or agreed to by EPA or NYSDEC.

- IRFNA - Inhibited Red Fuming Nitric Acid.

- Pits were dug and filled with limestone/lime, then IRFNA was added and a neutralization action occurred.

- Common practice to mix an acid with a base to neutralize.

Q: What is hazard?

A: Concerned about subsurface disposal activity. Acids may be leached. The concern is presence of nitrates in groundwater, aluminum in the surface waters.

- Located in future conservation/recreational area.

- Adjacent to the Duck Pond - could have migrated in surface water.

- Expanded site investigation (ESI), Dec 1995.
What kind of issues. Did small scale site investigation.

- Summary of ESI Investigation

Did some geophysical surveys
Analyzed soil borings
Seven monitoring wells
Checked quantity water in with quality of
water out.

- Focus efforts in the pit area. Geophysical survey used EM-31. It is ideal for pinpointing areas of salt content. Showed areas where the pits were.

- We are looking at one monitoring well with highest nitrate concentration.

Q: How come used EM-31 instead of radar?

A: Radar is less dramatic than EM-31.

- He gave a summary of soil analytical data
Found 12 metals detected above TAGM criteria.
More concerned about presence at high levels and what was found is not too far above TAGM level.
Volatiles low - not concerned about this.

TAGM values used for background. The number of soil samples for background totaled about 50 across Depot. Of that we use 95th percentile.

Q: Do they have anything to do with hazardous value?

A: No. They aren't indicative huge chromium disposal site. It's there. Slightly above level. Concerned but not particularly over concerned.

Q: What is TAGM?

A: Technical Administrative Guidance Memorandum. Guiding criteria for work done at the Depot.

- He Summarized Groundwater Data

- Metals in groundwater are affected by turbidity of water sample collected. Muddier water more metal in it. In 1994 some of these samples were very turbid. Have developed newer/better technology for collecting them. In 1992 doing filtered and unfiltered. Had to do nonturbid sampling without filtered.

- He summarized surface water data. Only concern here was aluminum and iron. There were no volatiles, ~~semi-volatiles, pesticides, herbicides nor~~ nitroaromatics detected.

- Mini-risk assessment. Identical process full-blown baseline. Take maximum values evaluate what risks are in human exposure. Consider what land going to be used for. Unacceptable if drinking water with highest nitrate levels.

- Groundwater risk from iron and nitrate. Look at aluminum problem too. Left with issue of what to do. Army is evaluating information. Considering restricting use of groundwater at site or do monitoring program. Nitrates degrade over time. Aluminum in surface water is difficult to understand. Sample aluminum to confirm results. Believe low level. Think it's from sediment in samples.

- Groundwater flows the way land goes. The pond is in the low spot. Groundwater flows toward pond. Not seeing in down gradient wells.

Q: What will the property be used for?

A: Conservation. People who drink water are not close to that site. Seven groundwater wells, only one found in exceedence--right in pit. There is no real exposure if no one is drinking water.

Q: What about toxicology of nitrates?

A: 10 PPM#--Blue baby syndrome. Problem for pregnant mothers. Only dangerous to infant children and unborn children that we know.

- Right now we are leaning toward monitored natural attenuation.

- DOH/DEC make sure current and future receptors aren't at risk. Extent isn't far out where would impact people. Steve Absolom added that by presenting this now, the RAB can see what our options are going to be in future to treat this. Do I spend million dollars to investigate this site. Take information and make reasonable decision. It's is a financial decision as well as what is the right thing to do.

Mike Duchesneau also summarized the site conditions of the Ash Landfill. Some highlights of this presentation:

- Former trash incinerator located within conservation land use area.

- Concerned with chlorinated organics in groundwater.

- Source area eliminated in 1995 with a removal action.

- Left with extended groundwater plume at depot boundary.

- Installed a reactive barrier wall with zero valence iron. Fairly new technology. Involves chemical reaction. Passive system groundwater moves thru reactive wall where dechlorination takes place and is cleaned. Put barrier wall width plume at Depot Boundary. As water moves thru trench, we see it go in and out.

- Goals are to demonstrate concentration reductions, determine groundwater flow regime.

- Implemented after RI and FS prior to ROD. Still working on ROD based on results of this study.

- Monitoring is ongoing.

- Groundwater moves about 40 feet/year. Concentrations high coming in. When started, contaminated groundwater already there down gradient; therefore it takes time before gets flushed out.

Q: Any idea of how many flushes.

A: No. Probably 5-10 flushes. The question is how fast groundwater moves to flush it clean. It is not any easy fix answer.

- ~~Good news is in the trench were reaction going~~
on concentrations are very low.

Q: Is there any geologic feature attributed to this?

A: Yes, when did trenching, did test pits, did hit areas where found old clay tile pipes. Could be funneling along a path in middle.

- In summary, three quarterly rounds complete. Last round currently being done.

- Trench concentrations are all low--good news.

- Downgradient concentration is above target values. So flushing to TCE/DCE will require more time to reduce downgradient concentrations.

- Technology appears successful. Further downgradient monitoring is required.

5. Mr. Absolom gave a presentation on The Principles of Environmental Restoration which was a two-day workshop the BCT attended. A copy of the handout is forwarded with these minutes. Some highlights of Mr. Absolom's presentation:

- He found the training course got him thinking in other areas he hadn't been thinking. One goal was with Ecological Risk Assessment and ways we can streamline that so we can come to agreement as to what we should do with project, etc.

- Trainers used specific site examples.

- Training encourages strategic thinking, team building and problem solving.
- Can be used to streamline cost and scheduling. Could help time things better.
- Help develop effective communication and cooperation. EPA, the Army, State, would work as a team.

- ~~- Uncertainties are inherent and will always need to be managed.~~
- Will try to make principles of environmental restoration work.
- Found it was a great idea but feel we have to get out of mindset of regulator/regulatee.
- We would look at our options based on what we know about the site.

Q: Is budget complex and it is a problem with this philosophy?

A: No, IRFNA good example. The RI if funded but not yet authorized to proceed.

Q: Does funding for RI/FS come out of the same pot of money?

A: The money can be put in contract for different segments of work to be accomplished. Different tasks are set up in contract.

- Project managers must still make decisions when uncertainties exist.
- Use the Conceptual Site Model (CSM)
 - Organize and communicate installation data
 - Prioritize problems/responses
 - Identify uncertainties
 - Basis for evaluating effectiveness of potential responses
 - Communicate effectively with stakeholders.

- Hope to keep PER concept active and use for decisions.

- To manage uncertain ecological risks, we will do a RA and based on date, i.e., how effect mouse, etc. With new EPA guidance, instead of risk assessment you make risk management decisions. You look at population effect and community level effects.

~~- Need to allow flexibility - as we do a project need to be able to make field decisions and still be in framework of ROD.~~

- Make sure you know how to say project is done. Make sure all spelled out before come to closure on site. Have an agreed on exit strategy.

6. Mr. Absolom then opened up the meeting for open discussion. The following questions were raised:

Q: Regarding a news article on Depleted Uranium, did the depot store some here?

A: Shells, yes, consisting of bullets.

Q: Was any taken apart here? Apparently seeing health problems with Depleted Uranium and other contaminants.

A: It was not manufactured here. In storage process, don't know if separated projectile from casing. Tom Battaglia, former Depot Safety Officer, interjected and said no. All they used to do was a visual inspection. They would go through and check linkage and then put it back in its case. Steve also mentioned that Department of Health/NRC is looking at Bldg 612. They are keeping an eye on where DU was dealt with. We had an NRC license. As part of closure, they would like to terminate license.


7. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members will be on February 15, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

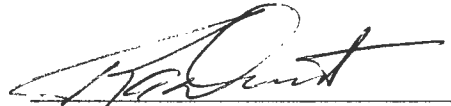
Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:



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



RICHARD A. DURST
Community Co-Chair

Presentation to the RAB
January 18, 2000

Update on Status of :
The IRFNA Site (SEAD-13)
and
The Ash Landfill

Reactive Barrier Wall Treatability Study

Michael Duchesneau, P. E.

Topics for Tonight's Presentation

- *Proposed Recommendations for SEAD-13, IRFNA Disposal Site*
 - *Groundwater Results from the Zero Valence Iron Treatability Study*
 - *Results and Recommendations have not been Reviewed or Agreed to by EPA or NYSDEC*
-

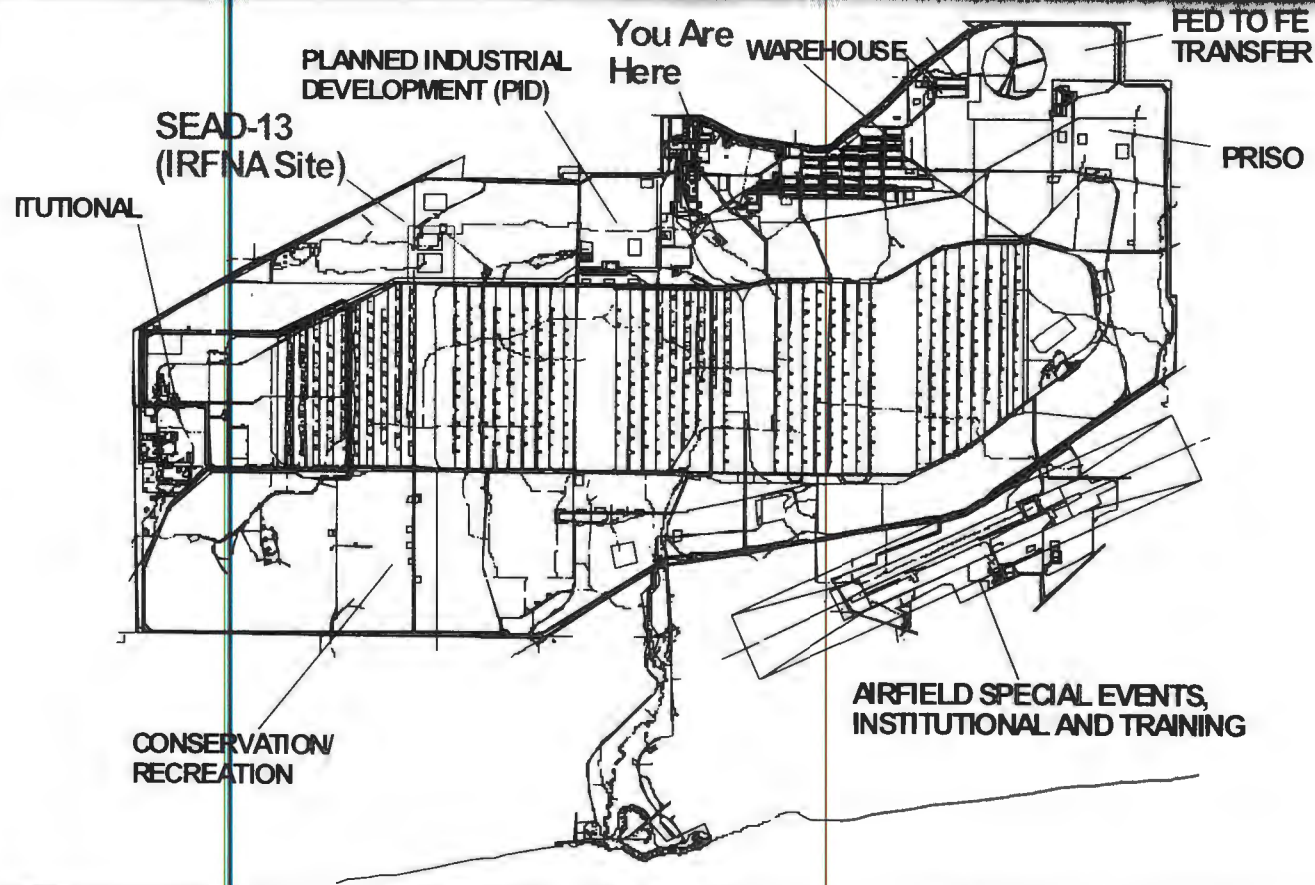
SEAD-13, IRFNA Site Background Information

- *IRFNA - Inhibited Red Fuming Nitric Acid*
 - *Oxidizer in Liquid Missile Propellant Systems*
 - *Composition*
 - *81%-85% Nitric Acid (HNO₃)*
 - *13%-15% Nitrogen Dioxide (NO₂)*
 - *0.7% Hydrofluoric Acid (HF)*
 - *2%-3% Water*
 - *Disposed (Neutralized) in Shallow Trenches
Partially Filled with Limestone or Lime*
-

SEAD-13, IRFNA Site Background Information (Cont.)

- *Identified as a Solid Waste Management Unit (SWMU); SEAD-13*
- *Future Conservation/Recreation Area*
- *Adjacent to the “Duck Pond”*
- *Expanded Site Investigation (ESI);
December, 1995*

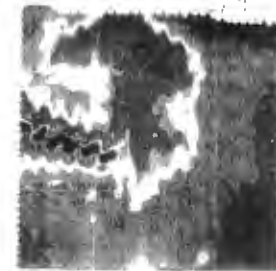
Location Map of SEAD-13, (IRFNA Site)



SEAD-13, IRFNA Site Summary of ESI Investigation

- *Geophysical Surveys*
 - *Electromagnetic (EM-31); 12,180 feet*
 - *Ground Penetrating Radar (GPR) 7,500 feet*
- *Ten (10) Soil Borings*
 - *Three (3) Samples Analyzed per Boring; 30 Total*
- *Seven (7) Monitoring Wells*
 - *Two (2) Background for each Disposal Pit*
 - *Two (2) within each Disposal Pit*
- *Three (3) Surface Water/Sediment Sample Locations*
 - *Two (2) from Duck Pond and One (1) Upstream*

Geophysical Anomalies (EM-31) at SEAD-13



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EMPA ARMY, DEPT. OF THE ARMY
WASHINGTON, D.C. 20315
PERFORMING ORGANIZATION REPORT NUMBER
DAAG07-93-1-0001

SEAD-13, IRFNA Site

Summary of Soil Analytical Data

- *Low VOCs (None Above; from Lab. Contamination)*
 - *3 Semi-VOCs above TAGM Criteria (phenol, 1,4-dichlorobenzene and 4-methylphenol) in one sample*
 - *1 Pest./PCBs detected; None above TAGM Criteria*
 - *No Herbicides detected; No Nitroaromatics detected* *Explosive*
 - *12 Metals detected above TAGM Criteria*
 - *Chromium (9 Above; Max. 35 mg/Kg; TAGM 24 mg/Kg)*
 - *Copper (14 Above; Max. 45 mg/Kg; TAGM 25 mg/Kg)*
 - *Nickel (14 Above; Max. 57 mg/Kg; TAGM 37 mg/Kg)*
 - *Thallium(12 Above; Max. 0.9mg/Kg; TAGM 0.3 mg/Kg)*
-

SEAD-13, IRFNA Site

Summary of Groundwater Data

- *No VOCs, PCBs/Pest. or Herbicides detected*
 - *No Semi-VOCs above GA Criteria*
 - *Nitrate (1/5 Above; Max. 460 mg/L; GA 10 mg/L)*
 - *6 Metals detected above GA Criteria (Turbidity)*
 - *Antimony (4/5 Above; Max. 53 ug/L; GA 3 ug/L)*
 - *Chromium (1/5 Above; Max. 69 ug/L; GA 25 ug/L)*
 - *Lead (1/5 Above; Max. 35 ug/L; GA 25 ug/L)*
 - *Iron (4/5 Above; Max. 69,000 ug/L; GA 300 ug/L)*
 - *Magnesium (5/5 Above; Max. 188 mg/L; GA 35 mg/L)*
 - *Manganese (3/5 Above; Max. 1,120 ug/L; GA 300 ug/L)*
-

SEAD-13, IRFNA Site Summary of Surface Water Data

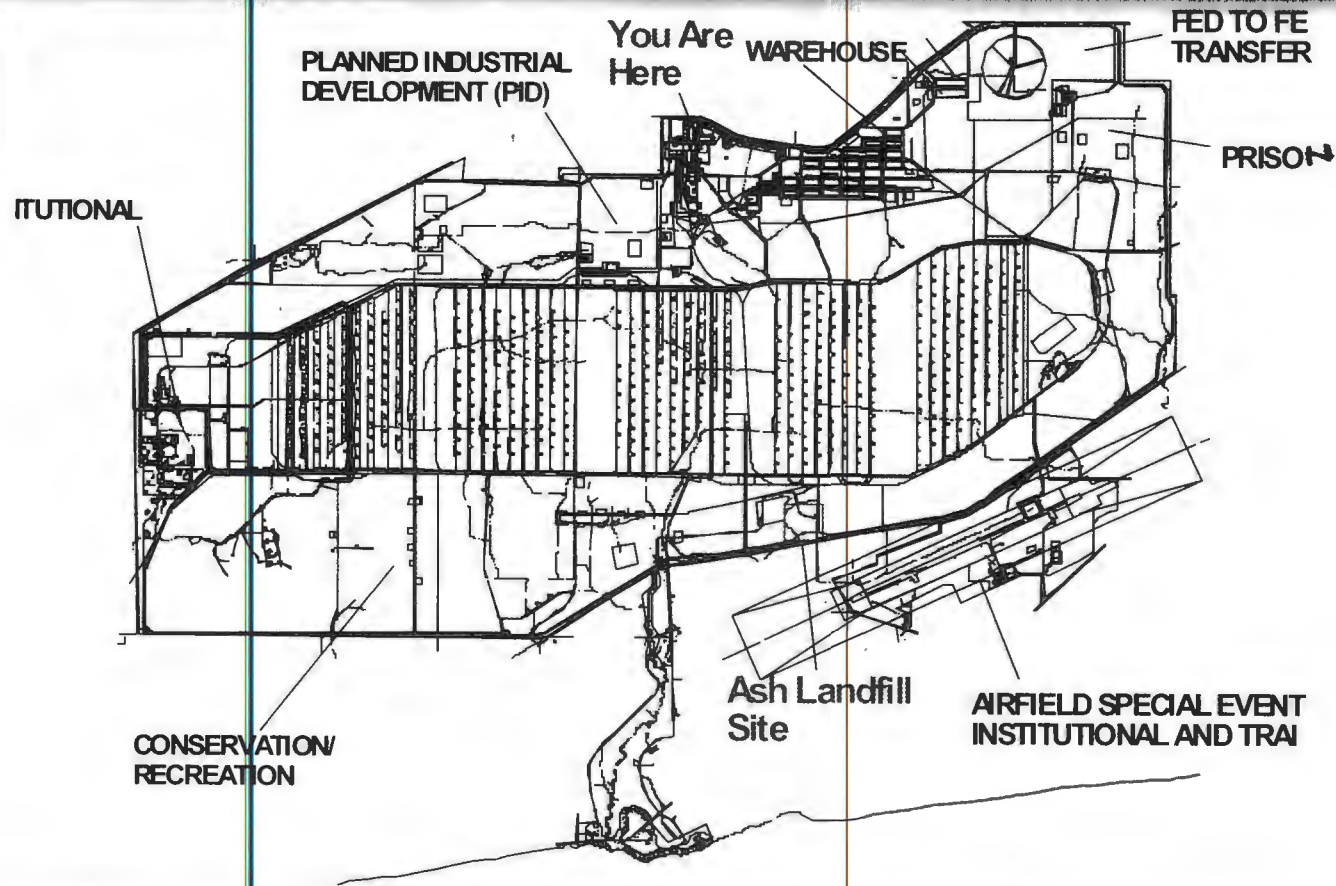
- *No VOCs detected*
 - *No Semi-VOCs detected*
 - *No Pest./PCBs detected*
 - *No Herbicides detected*
 - *No Nitroaromatics detected*
 - *2 Metals detected above Class C Criteria*
 - *Aluminum (Ionic) (3/3 Above; Max. 3,830 ug/L;
Class C Criteria 100 ug/L)*
 - *Iron (3/3 Above; Max. 5,790 ug/L;
Class C Criteria 300 ug/L)*
-

SEAD-13, IRFNA Site "Mini-Risk" Assessment

- *Human Receptors Considered*
 - *Park Worker*
 - *Recreational Visitor (Child)*
 - *Construction Worker*
- *Excess Risk to Park Worker and Recreational Visitor due to Ingestion of Groundwater*
- *Groundwater Risk from Iron and Nitrate*
- *Ecological Risk from Aluminum in SW*

*CONCERN
For
SEDIMENT*

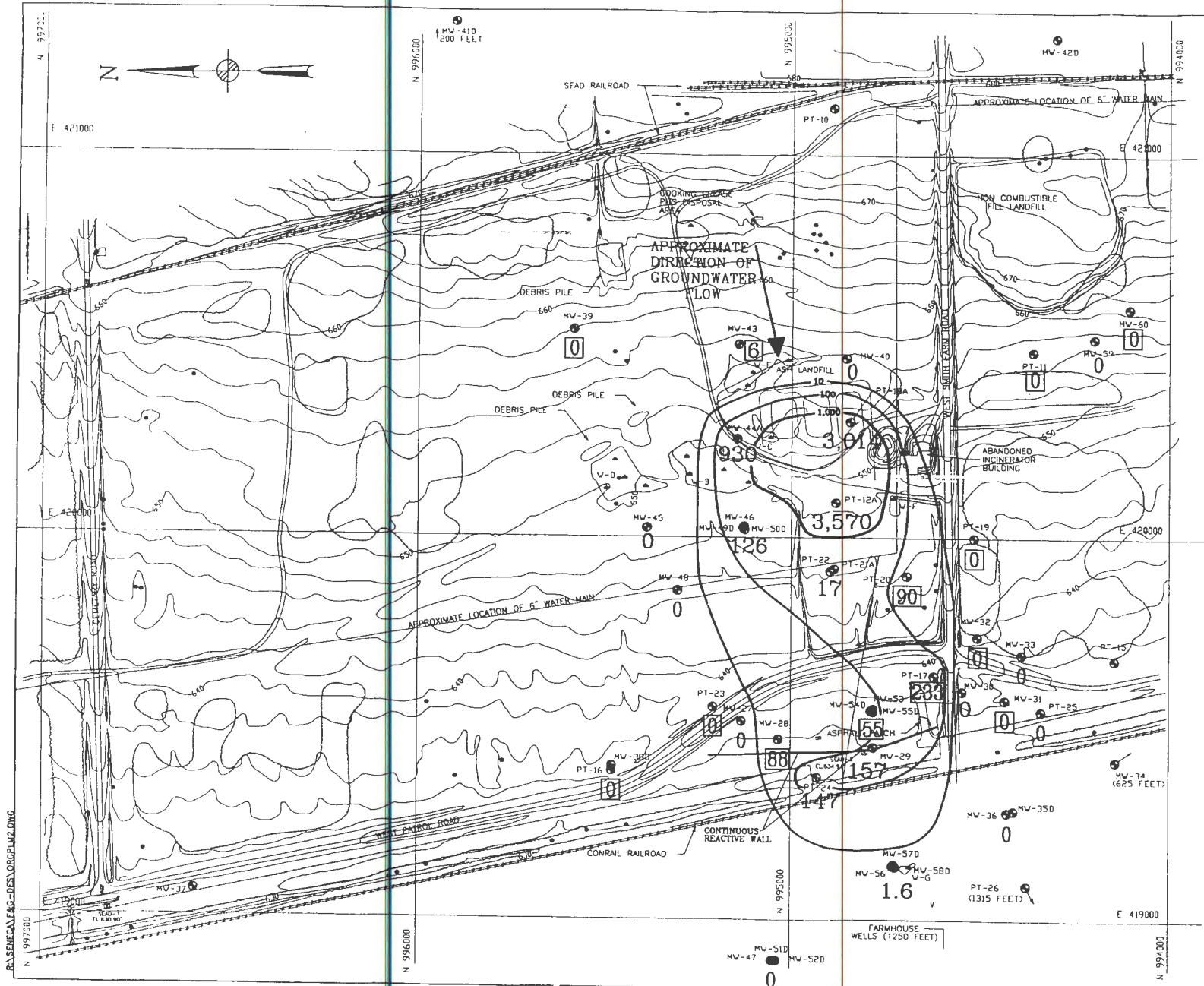
Location Map of Ash Landfill Site



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Summary of Site Conditions Ash Landfill

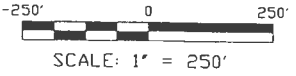
- *Former Trash Incinerator*
- *Within Conservation Land Use Area*
- *Constituents of Concern*
 - *Volatile Chlorinated Organics in Groundwater*
- *Source Area Eliminated in 1995 with an Interim Removal Action (IRM)*
- *Groundwater Plume at Depot Boundary*



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.



REV	DATE	DESCRIPTION	DESIGNED	CHECKED	DATE	BY
A	8/14/98	ISSUED FOR EPA REVIEW				
B	11/4/98	ISSUED FOR EPA REVIEW				
A	8/16/98	ISSUED FOR REVIEW				
REV	DATE	DESCRIPTION	DESIGNED	CHECKED	DATE	BY
DRAWN BY	C. BROWN	CHECKED BY	J. FAYERS			
DESIGN LEAD		REV. TECH				
CHIEF DISC ENGR		MR. OF ENGR				
PROJECT MANAGER	H. BUSHNEAR					
MR. OF PROJECTS	J. P. CAMPBELL					
IN CHARGE	W. B. PATTERSON					

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
 ASH LANDFILL GROUNDWATER TREATABILITY STUDY
 USING ZERO VALENT IRON CONTINUOUS REACTIVE WALL

DEPT: ENVIRONMENTAL ENGINEERING Dwg No: 782800-01004

FIGURE 1
 ASH LANDFILL SITE MAP WITH VOLATILE ORGANICS PLUME: POST-REMOVAL ACTION CONDITIONS

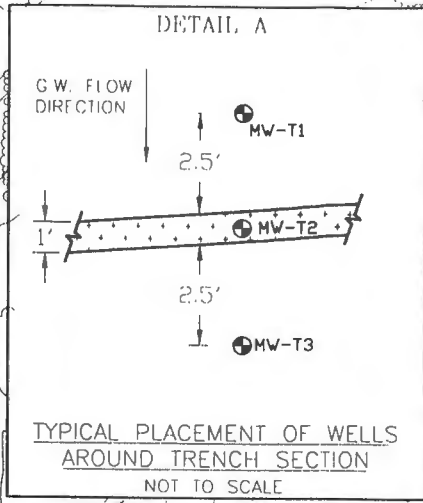
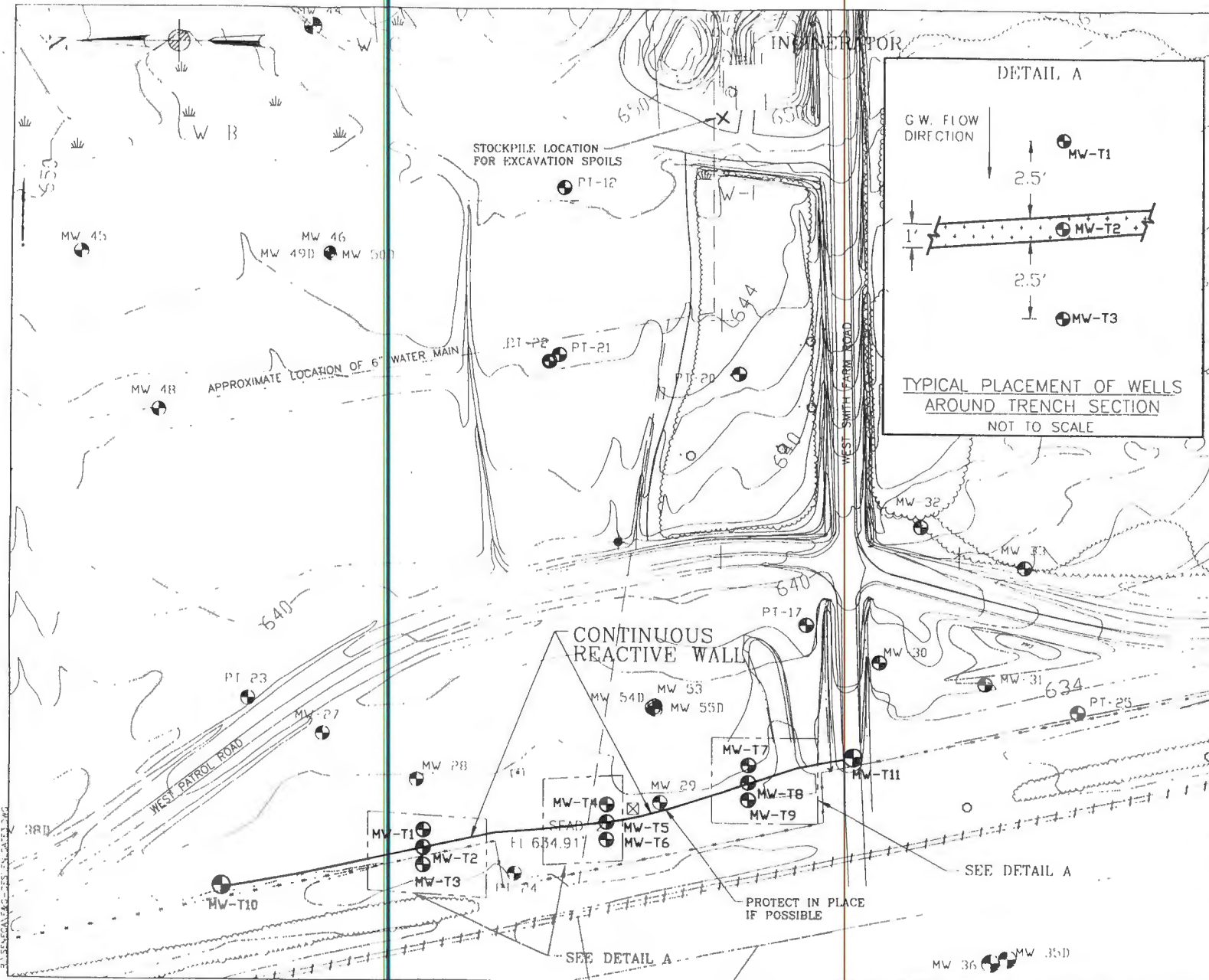
SCALE: AS NOTED DATE: NOVEMBER 1998 REV: B

R:\SENECA\FAC-DES\ORIG\FM2.DWG



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*
-



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
- RAILROAD TRACKS
- TREATMENT WALL
- 6" WATER MAIN

Scale: 1" = 100'

1	2/23/99	ISSUES FOR EPA REVIEW			
2	3/14/98	ISSUES FOR EPA REVIEW			
3	10/12/98	ISSUES FOR RC-810			
4	9/16/98	ISSUES FOR R10			
5	8/29/98	ISSUES FOR REVIEW			
REV		DATE	DESCRIPTION	DESIGNED BY	CHECKED BY
1		8/29/98	ISSUES FOR REVIEW	J. TRAVERS	H. BUCKHEIM
2		9/16/98	ISSUES FOR R10	J. TRAVERS	H. BUCKHEIM
3		10/12/98	ISSUES FOR RC-810	J. TRAVERS	H. BUCKHEIM
4		11/19/98	ISSUES FOR RC-810	J. TRAVERS	H. BUCKHEIM
5		12/15/98	ISSUES FOR RC-810	J. TRAVERS	H. BUCKHEIM

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
 ASH LANDFILL GROUNDWATER TREATABILITY STUDY
 USING ZERO VALENT IRON CONTINUOUS REACTIVE WALL
 TREATABILITY STUDY WORK PLAN

REV: 1
 ENVIRONMENTAL ENGINEERING
 DATE: FEBRUARY 1999

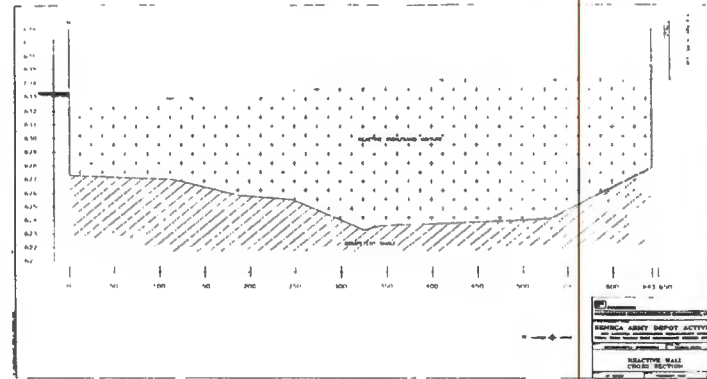
FIGURE 3
PROPOSED MONITORING WELL LOCATIONS
FOR CONTINUOUS REACTIVE WALL

SCALE: 1" = 100'
 DATE: FEBRUARY 1999

Goals for Reactive Barrier Wall Study at Ash Landfill

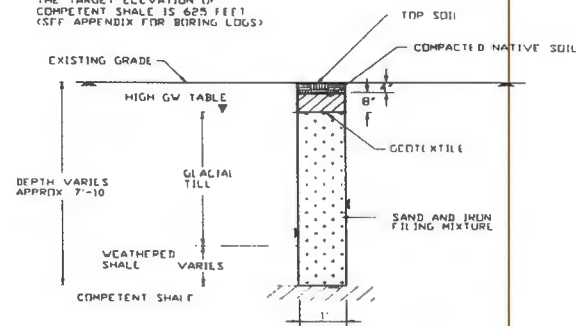
- *Demonstrate Concentration Reductions*
- *Evaluate Degradation Rate*
- *Determine Groundwater Flow Regime*
- *Obtain Engineering Design Data*
 - *Reactive Iron Volume*
 - *Hydraulic Characteristics of Barrier*

Reactive Barrier Wall Cross-Section



NOTES

1 ELEVATION FOR THE TRENCH IS TO BE MADE TO THE TOP OF COMPETENT SHALE. THE TARGET ELEVATION OF COMPETENT SHALE IS 629 FEET. (SEE APPENDIX FOR BORING LOGS)



TYPICAL SECTION

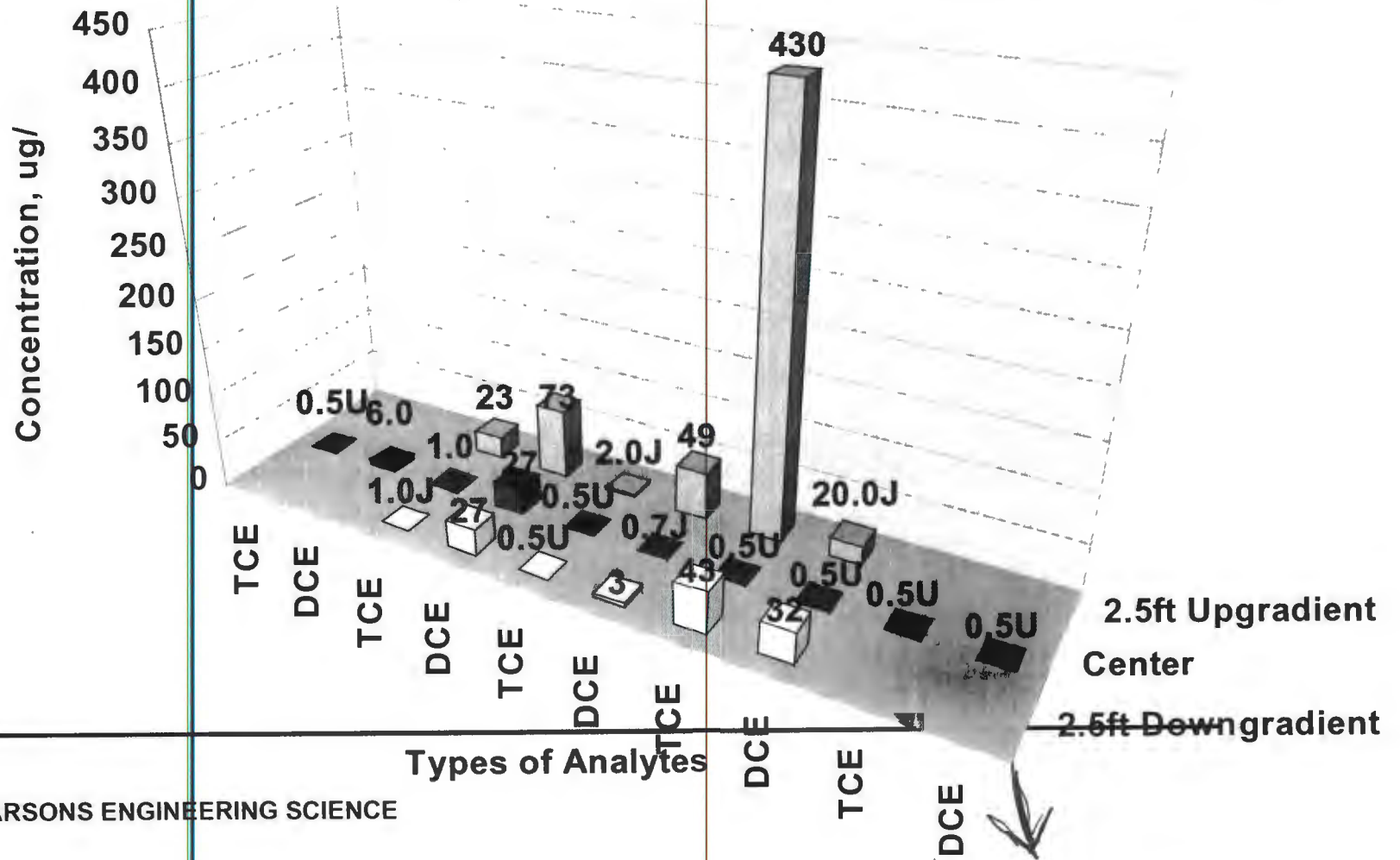
Treatability Study for In-Situ Reactive Barrier Wall

- *Implemented after RI and FS, Prior to ROD*
- *Installed December, 1998; Monitoring is On-going*
- *Installed with a Continuous Trencher in Less than One Week*
- *Reactive Wall is 650 feet long, 14 inches wide, 7 to 12 feet deep, 50/50 Mixture of Reactive Iron and Sand*

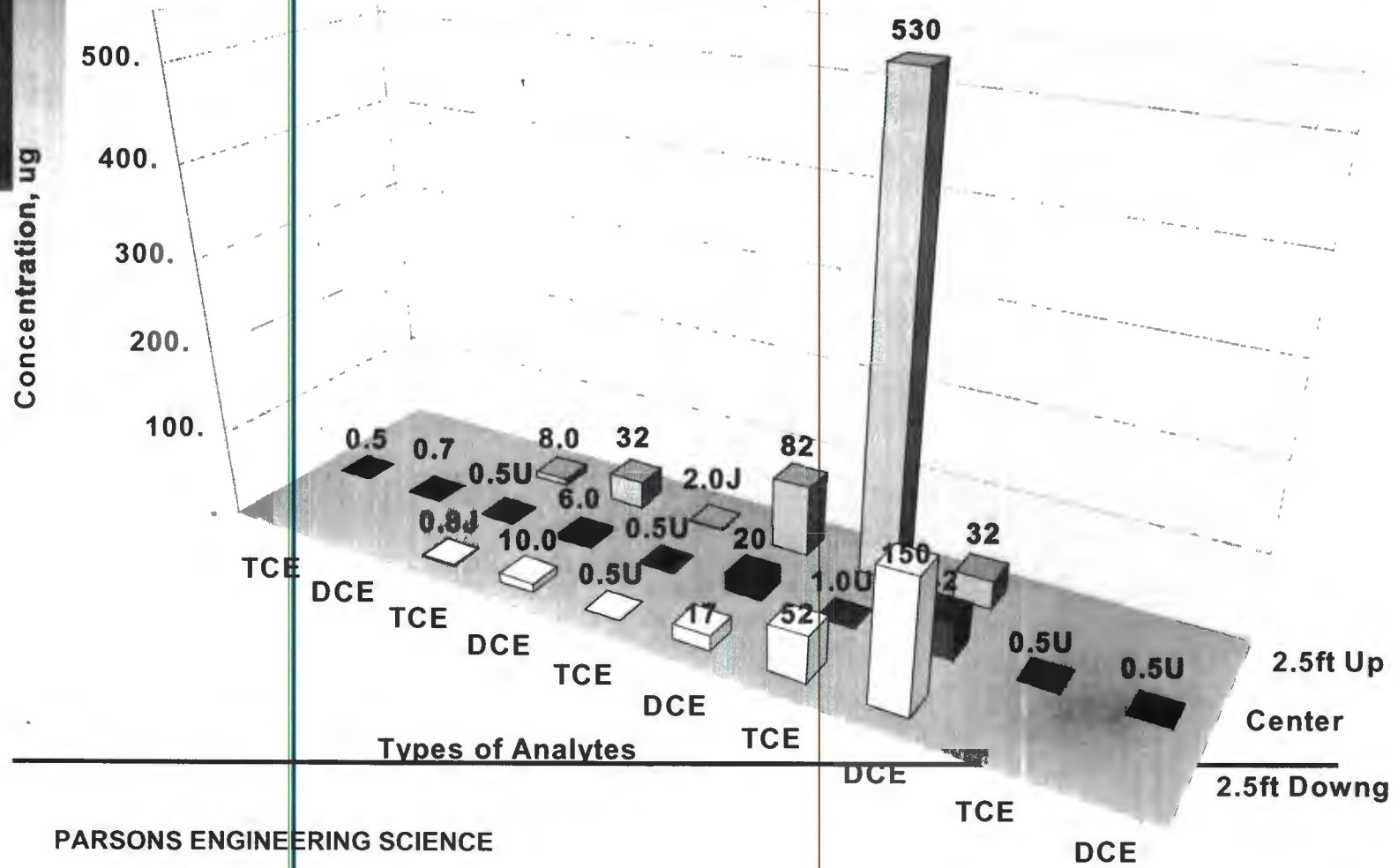
Ash Landfill, Reactive Barrier Wall Study, Scope of Work

- *Select SubContractors*
 - *Envirometals (Patent Holder for Zero Valence Iron Applications)*
 - *Dewind; Trench Installation Contractor*
 - *Peerless; Reactive Iron Supplier*
 - *Install Reactive Wall; December, 1998*
 - *Perform Groundwater Monitoring*
 - *1 Year of Quart. Samp.; Monthly Water Levels*
 - *Prepare Report*
-

Reactive Barrier Wall; 1st Round Groundwater Data, April 1999

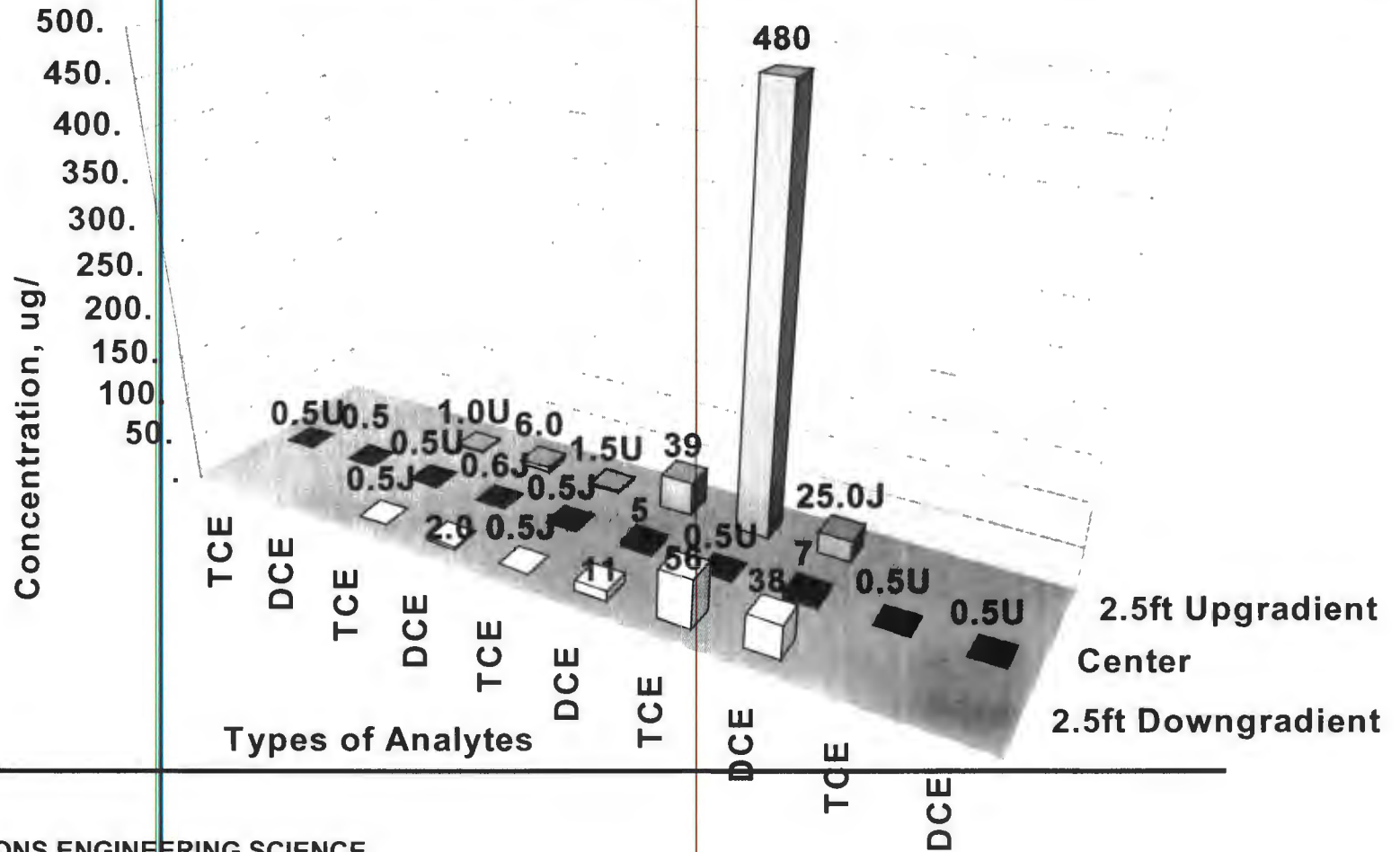


Reactive Barrier Wall; 2nd Round Groundwater Data, June 1999



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Reactive Barrier Wall; 3rd Round Groundwater Data, Sept. 1999



Reactive Barrier Wall Treatability Study Update

- *Three (3) Quarterly Rounds Complete; Last Round Currently being done*
- *Trench Concentrations are all Low*
- *Downgradient Conc. are above Target Values*
- *Flushing of TCE/DCE from Aquifer will Require more Time to Reduce Downgradient Conc.*
- *Technology Appears Successful; Further Downgradient Monitoring is Required*

Test Pit Prior to Installation



PARSONS ENGINEERING SCIENCE

Continuous Trencher Machine



PARSONS ENGINEERING SCIENCE

Continuous Trencher Machine



PARSONS ENGINEERING SCIENCE

On-Site Mixing of Reactive Iron with Sand



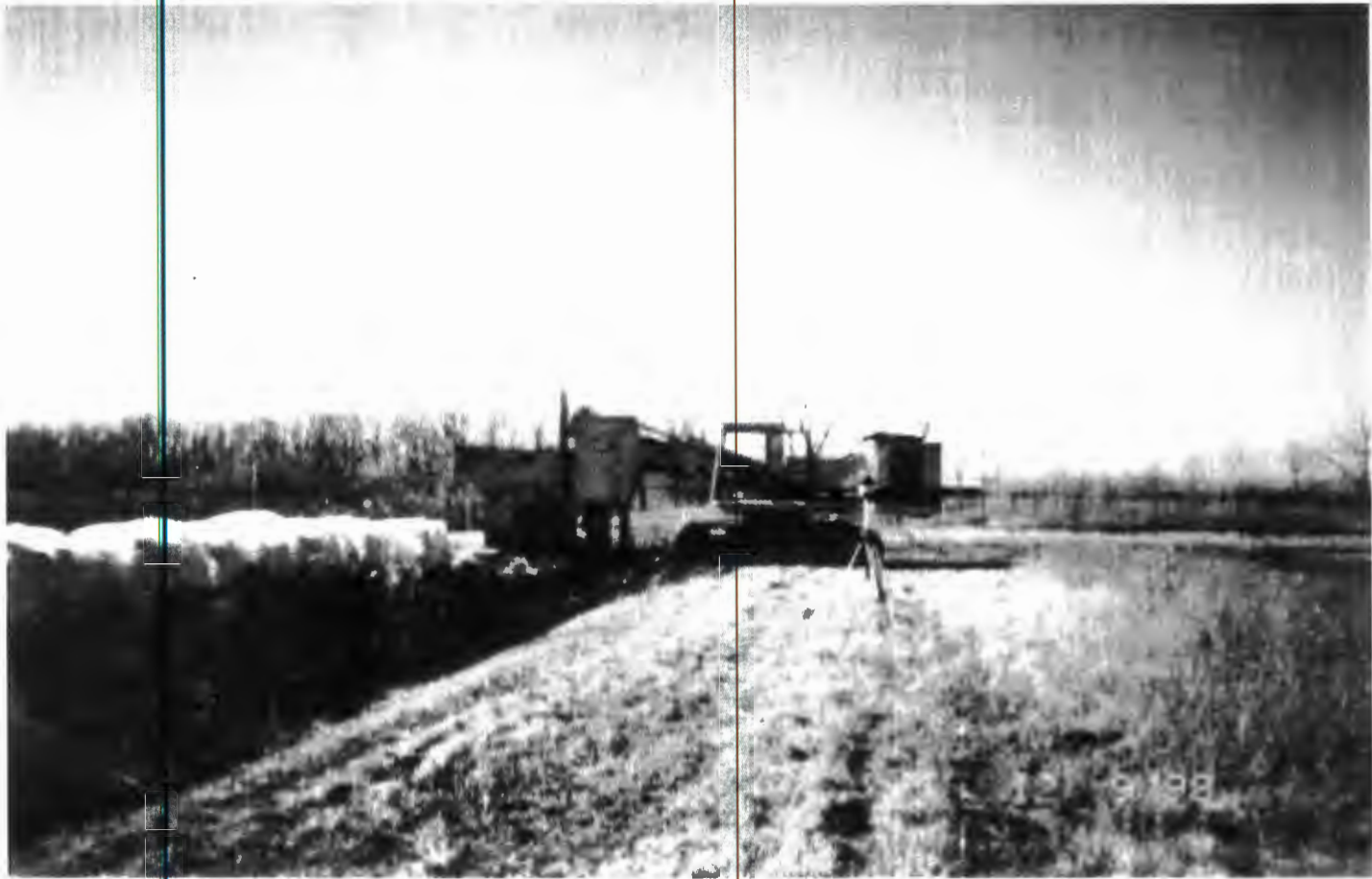
PARSONS ENGINEERING SCIENCE

Reactive Iron with Sand After Mixing



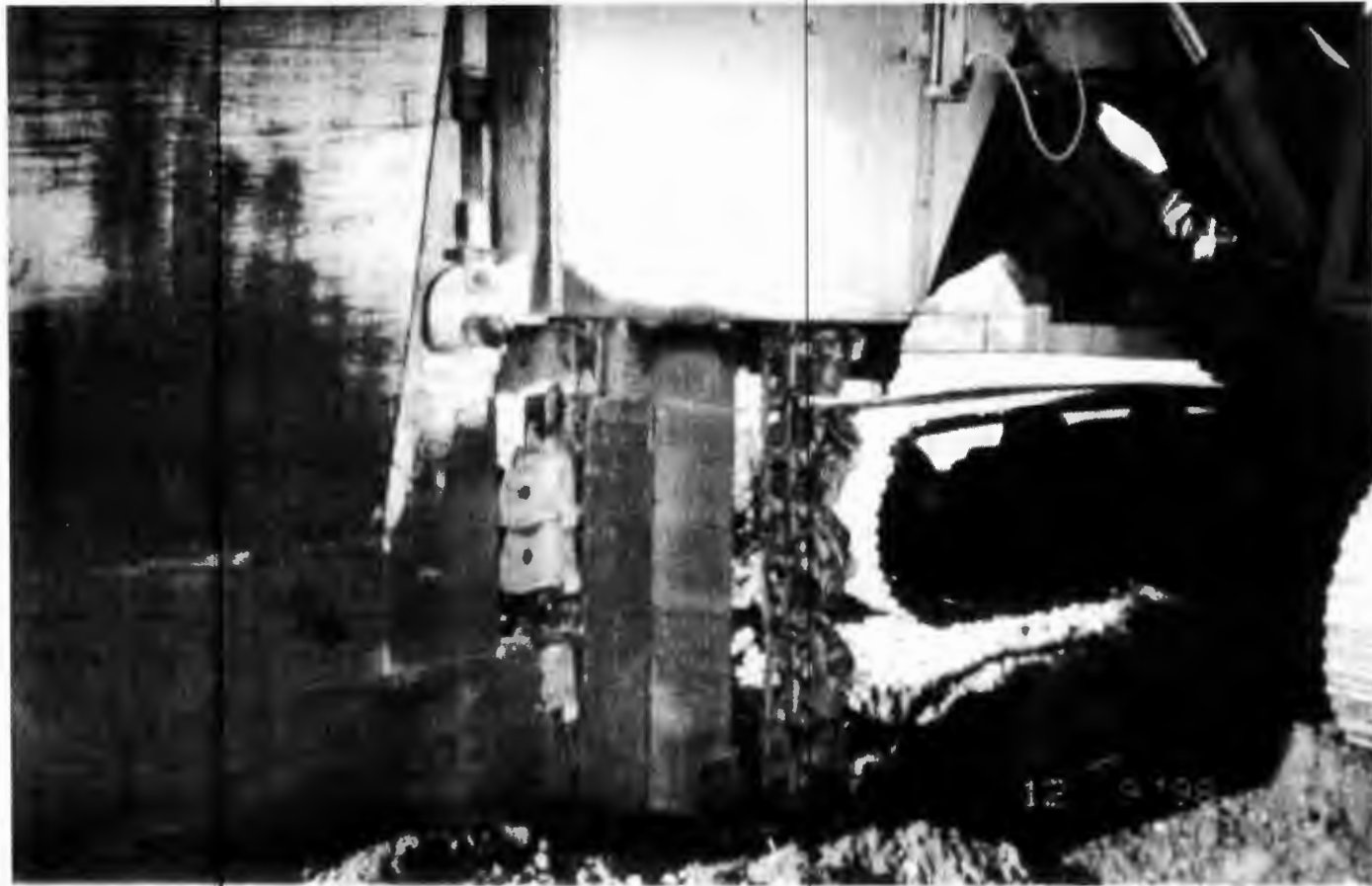
PARSONS ENGINEERING SCIENCE

Installation of Reactive Barrier Wall with Continuous Trencher



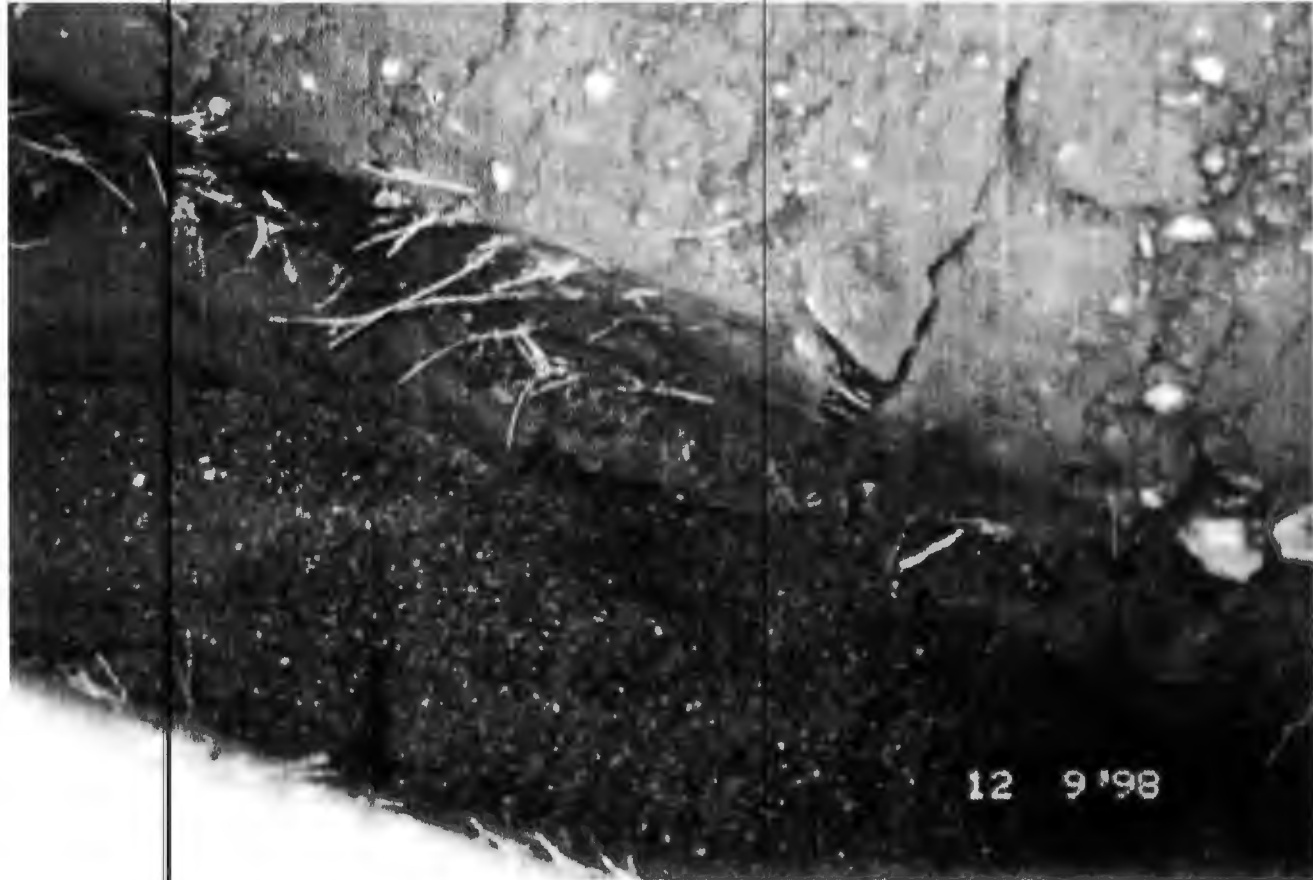
PARSONS ENGINEERING SCIENCE

Continuous Trencher Excavating Soil and Placing Reactive Iron

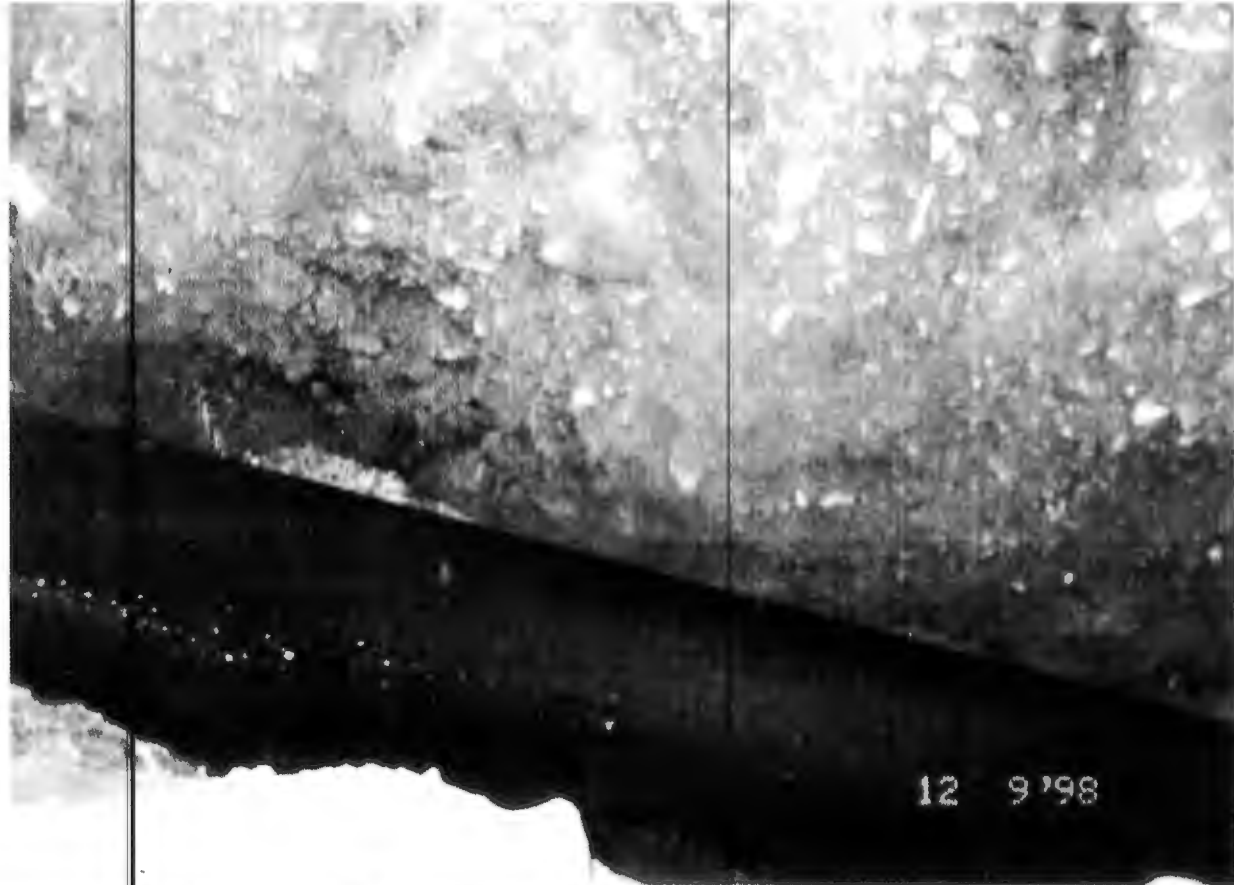


PARSONS ENGINEERING SCIENCE

Installed Trench with Reactive Iron Following Trenching Operations



*Trench with Geotextile Filter Fabric
over Reactive Iron Prior to Backfilling*



Installation of Reactive Barrier Wall with Zero Valence Iron



**PRINCIPLES OF
ENVIRONMENTAL RESTORATION
AND THEIR
APPLICATION TO STREAMLINING
INITIATIVES**

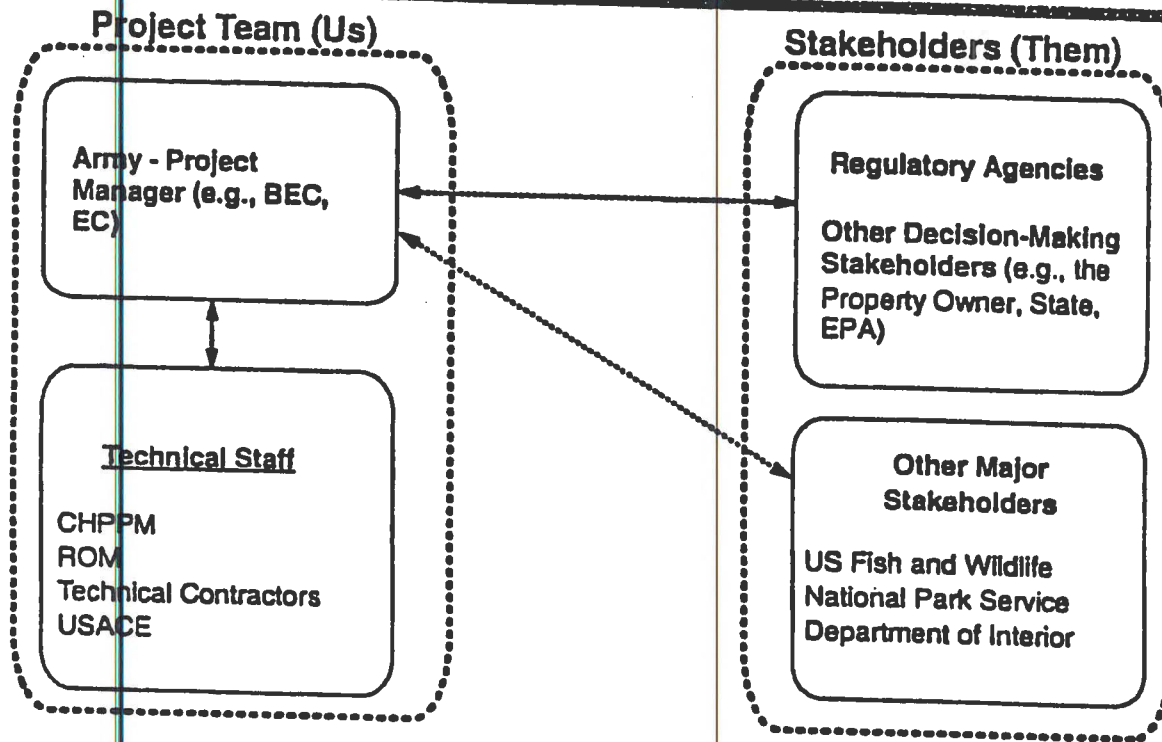
Workshop Objectives

- Introduce the four principles of environmental restoration and their utility in:
 - ✓ Encouraging strategic thinking, team building, and problem solving
 - ✓ Seizing opportunities for cost and schedule streamlining
 - ✓ Improving communication with all stakeholders
- Provide tools that facilitate application of the principles

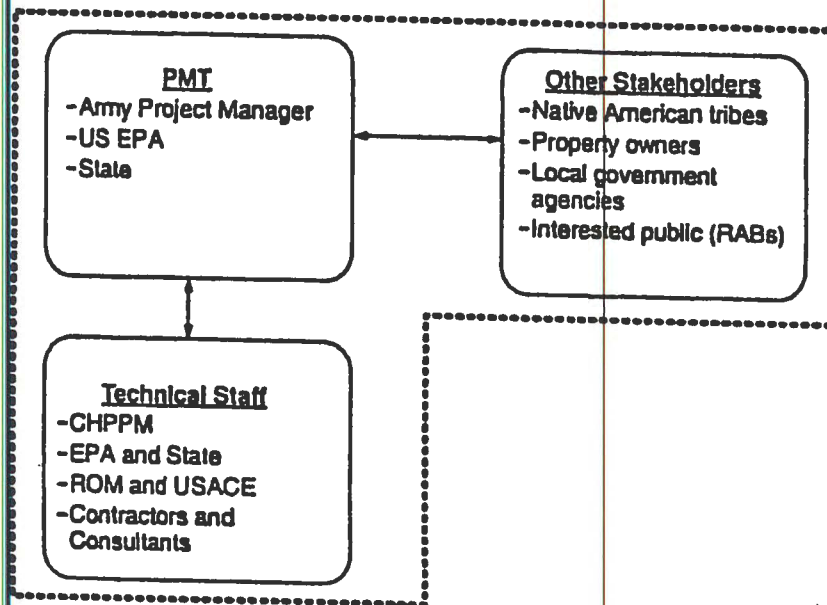
Four Principles of Environmental Restoration

- Developing effective communication and cooperation with a project management team is essential
- Clear, concise, and accurate problem identification and definition are critical
- Early identification of likely response actions is possible, prudent, and necessary
- Uncertainties are inherent and will always need to be managed

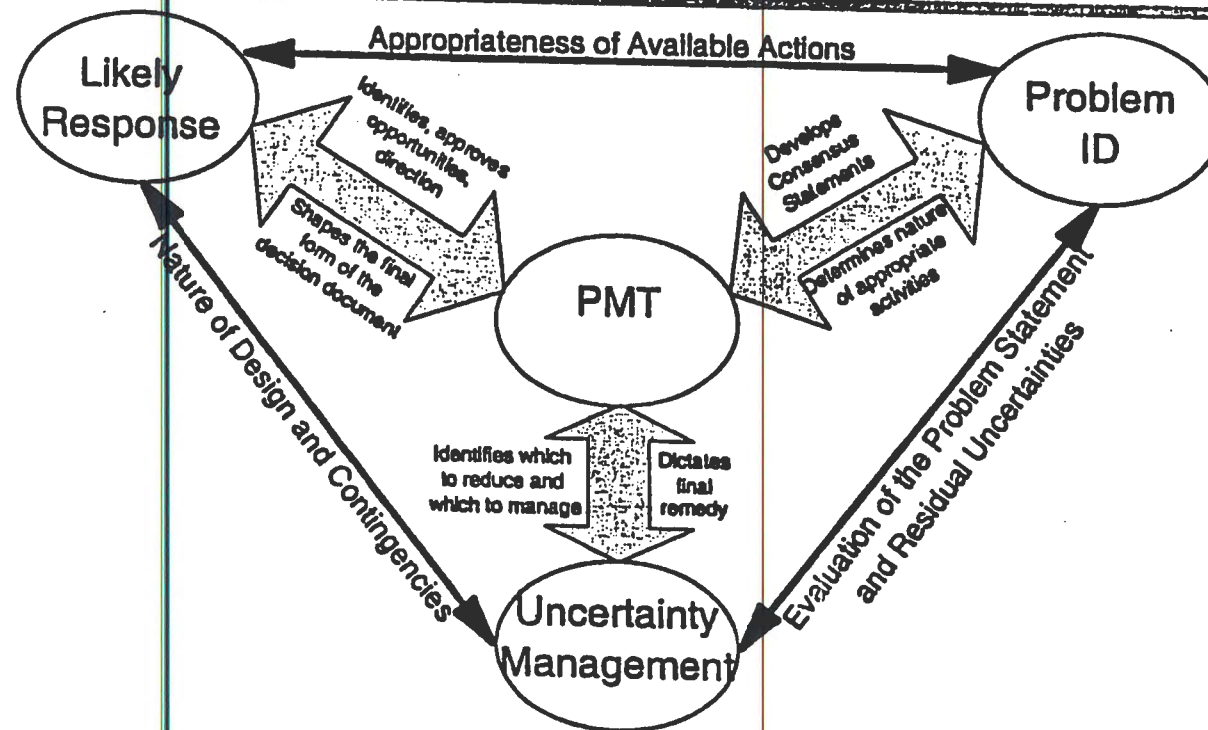
Current Paradigm (What We'd Like to Change)



Proposed Paradigm: Project Management Team Approach



Interactions Between the Four Principles



Environmental Restoration is Driven by Two Key Questions

- Do we have a problem?
- If yes, what should we do about it?

Early Identification of Likely Response Action(s) Allows:

- Early focus on appropriate remedial action objectives and an exit strategy
- Early consideration of potential response action implications
- Development of a hierarchy of probable technologies for a defined problem
- Early consideration of presumptive remedies, generic approaches, and a phased response to remediation
- Implementation of removal and/or interim actions

Why Focus on Uncertainty?

- Uncertainty management is essential for accelerated progress in site restoration because it helps make decisions when “perfect information” is not available
- Resolution of all uncertainties or unknown conditions is unlikely
- Yet, project managers must still:
 - ✓ Make decisions when uncertainties exist
 - ✓ Effectively communicate how uncertainties are addressed
 - ✓ Be able to distinguish between significant and insignificant uncertainties

Uses of the CSM (Conceptual Site Model)

- Organize and communicate installation data
- Represent interrelationships that need to be understood to identify and prioritize problems/responses
- Identify uncertainties
- Provide basis for evaluating effectiveness of potential responses
- Communicate effectively with stakeholders

Individual vs. "Population" Risk

- "Superfund remedial actions generally should not be designed to protect organisms on an individual basis" (USEPA 1999)
- Generally focus on:
 - ✓ population-level effects
 - ✓ community-level effects
- Exceptions
 - ✓ listed or candidate threatened and endangered species
 - ✓ treaty-protected species

Common Elements of Data Collection Planning

- Define the decisions
- Identify data that support making the decisions
- Define and agree on an acceptable level of confidence for most decisions

Remaining Uncertainties in Technology Selection

- Define performance objective
- Set selection basis
- Categorize residual uncertainties
- Select response/technology

Key Elements of a Decision Document

- Requirements and Prohibitions:
 - ✓ Performance Objectives
 - ✓ Response Components
 - ✓ Criteria and Standards
 - ✓ Additional Requirements
 - Allowances and Flexibility
-

Exit Strategy

- What are necessary and sufficient data to demonstrate that the desired state or conditions (e.g., long-term monitoring state) has been reached?
 - ✓ What?
 - ✓ Where?
 - ✓ How?
 - ✓ How often?
 - ✓ Under what conditions?
 - Data interpretation
-

MINUTES
RESTORATION ADVISORY BOARD
March 21, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vazquez, U.S. Environmental Protection
Agency

Steven Paszko, NYS Department of Environmental
Conservation

Community RAB Members Present:

Richard Durst, Community Co-Chair, Jeffrey Beall,
Patricia Jones, Bob McCann, Ken Riemer,
Dave Schneider, Jan Schneider, Fred Swain,
Karen Tackett, Frankie Young-Long

Community RAB Members Not Present:

Brian Dombrowski, Russell Miller,
Antje Baeumner (excused), Frank Ives (excused),
Ray A. Young (excused), David Wagner,
Henry Van Ness (excused)

Environmental Support Personnel Present:

Marsden Chen, NYS Department of Environmental
Conservation
Michael Duchesneau, Parsons Engineering Science,
Inc.
Michelle Brock, CENAE
Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal

Visitors:

David S. Miller, University of Chicago
Thomas Sydelko, University of Chicago

2. Mr. Stephen Absolom provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the February meeting. There were no changes and the minutes were signed and were entered into the record.

4. Mr. Absolom gave the first presentation on the Sewage Sludge Waste Piles, SEAD-5. A notice will be going in the paper to announce a public comment period for that removal action. A copy of the handout from the presentation is forwarded with these minutes. Some highlights from his presentation:

- This is a historic project.
- Site is approximately 200 ft. by 200 ft.
- Formerly used to stockpile sludge for soil conditioning.
- Rules have since changed.
- It was left there and now we have to have a contract to have that removed.
- Results of testing showed no impact on groundwater or subsurface soils. There was no leaching from sludge piles.
- Because of these results, it was decided a ~~removal action, Engineering Evaluation/Cost Analysis (EE/CA)~~, would be the way to go. This is a three-page document that states we will do a removal action. We will have a contractor come in and excavate.

- Still coordinating with the agencies on this.

Q: If you land spread sludge, will you have to monitor it?

A: Yes, NYS rule, Part 360, says we have to test soils and monitor impacts to soils.

Q: In dealings with EPA and DEC and your findings, do you feel that they hold you to a higher standard?

A: They do not hold us to a higher standard than anyone else. There is recourse if we disagree. We can go to dispute resolution. An unbiased individual will

look at the situation and make a decision. It would be a regional administrator in EPA. For example, if we had an area that had UXO and we couldn't make it safe, the Army may have it fenced off and not transfer. That won't happen here. At Jefferson Proving Ground a bombing range was fenced off for wildlife. Here at SEDA we will come to a resolution. Marsden Chen from the DEC also added regarding dispute resolution that through the entire program, they have had only one dispute resolution. It usually goes to the Division Directors and generally issues are resolved there. Somebody will make some concession. Ultimately the next step, if not resolved, would be to go to the Army Command Regulatory Administration and Commissioner and that doesn't look good.

Q: When DEC addresses their concerns about water, is it just the creeks themselves or Seneca Lake too?

A: We have not discussed lake effects--just creeks--because they are adjacent to site.

- Mr. Michael Duchesneau, P.E., Parsons Engineering and Science, gave the next presentation on the Ecological Risk Assessment (ERA) and also gave a summary of the March 9 meeting in Albany, NY. A copy of the handout is forwarded with these minutes. Some highlights from Mr. Duchesneau's presentation:

- There are many ecological resources at Seneca Army Depot Activity, i.e., wetlands, duck pond, whitetail deer herd, turkey, foxes, owls, hawks and osprey.

- Creeks all feed to Seneca Lake are habitat for fish and trout.

- Future land considerations include recreational and conservational use.

- Consists of approximately 6000 acres.

- An Ecological Risk Assessment is a process that evaluates the adverse ecological effects that

may occur or are occurring to ecological receptors as a result of exposure to hazardous substance. Need to understand what effect any release has on ecological community.

- The transfer of this property depends on the resolution of risk issues.

- This area is more difficult to do because animals are a moving target and you have numerous receptors to identify and assess.

- This guidance is new and evolving.

- Lack of toxicity data makes an Ecological Risk Assessment (ERA) difficult to do.

- An Ecological Risk Assessment is required by "Superfund."

- Need to quantify the threat and use to establish acceptable exposure and clean up levels.

- Will use it to compare our alternatives.

- An Ecological Risk Assessment has four basic steps

- 1) Identification of chemical of concern (COC).

- 2) Evaluate exposure assessment.

- 3) Look at toxicity assessment.

- 4) Calculate what the risk is and perform a risk characterization.

When do sampling we validate our data. From that point-don't have to look at compounds that are non-detect. We will do a comparison to background. We will compare how much risk if greater than background.

- If below TAGMs no point in considering any further.

- The chemicals that we are concerned about are petroleum and residuals, solvents, metals (lead, copper, zinc), explosives (residuals of open detonation/burning), pesticides and herbicides.

- They would have to perform an explosive assessment, an ecological exposure scenario, and a toxicity assessment.

Q: What is slope factor?

A: When EPA plots dose versus number of cancers - slope of line is slope factor. Equates to cancer risk, i.e., number of material per kilogram of body weight.

- Calculate exposure doses and compare our toxicity assessment with what is considered allowable.

- If the ecological quotient is less than one, there is no concern but if it is greater than one, then you have a concern.

- There are analytical limitations. Limitations to analytical processes only allow you to see certain things.

- Have to look at how much toxicity data is available.

- How the chemical bioaccumulates.

- Does the species live at the particular site all the time.

- Some species are more sensitive than others.

The eight steps in an EPA ecological risk assessment:

- Steps 1 & 2. Screening Level
- Step 3. Problem Formulation
- Step 4. Study Design, Workplan
- Step 5. Field Sampling

- Step 6. Site Investigation and Data Analysis
- Step 7. Risk Characterization
- Step 8. Risk Management

A NYSDEC Ecological Risk Assessment is a five-step process:

- Step 1. Site Description (identify ecological resources present)
- Step 2. Contaminant--Specific Impact Assessment (State looks at this one way; EPA looks at ecological quotients. Makes decisions on exceedances.
- Step 3. Ecological Effects of Remedial Alternatives
- Step 4. Fish and Wildlife requirements for implementation of remedial action.
- Step 5. Monitoring Program

- Challenging factor is to integrate risk assessment vs. risk management.

- Summary of Meeting in Albany--Its purpose was to help streamline process for future ERAs. Make them less complicated.

- Need to integrate eight step EPA with the five step State process.

- NYSDEC feels all resources are valued.

- Rely on numerical risk calculation.

- Realize 8-step process is not appropriate for all sites at SEDA (USEPA no longer expect toxicity studies).

- Willing to accept "screening" ecological risk assessment. Will be acceptable for making decisions.

- Army has agreed to do screening ERAs.

- Will consider doing future population and/or toxicity studies only in instance where there is a need.

- Bottom line is that it is likely that transfers may be delayed due to resolution of ecological factors.

- Hard decision, i.e., how much over "1" can we be. Still not really clear on everything. Will have to weigh factors and come to a decision.

Q: Regarding research done on the whitetail deer herd, were there any results that you saw that indicate that they have been affected by contamination?

A: We didn't do tissue studies, but we did do blood tests. We didn't find anything that showed an impact on deer herd. The Army relied also on tissue studies done at other bases--did not find any impacts on that. Mike Duchesneau also added that there are a lot of sites here at SEDA that are small. Deer have such a wide range of movement.

- Mike Duchesneau stated that any time do these things, there will always be factors of uncertainty. It is a judgement call depending on how high the numbers are and how much funding you have.

7. Mr. Absolom opened the floor for discussion.

Q: Is the fence around KidsPeace going to be taken down or will it be relocated?

A: Pat Jones, Seneca County Industrial Development Agency, responded that the fence is not being taken down. Some interior fencing is being taken down.

Q: What is happening with the Airfield?

A: Mr. Absolom responded that it is a lower priority and the housing, prison, utilities, and KidsPeace parcels have a higher priority.

Q: Is there any more discussion about various groups taking over conservation area?

A: The conservation area is the last priority and has little discussion.

Q: What is the status of the KidsPeace and Prison transfer?

A: The prison construction is about 80% complete based on the right of entry. They do plan a community open house. The FOST is not yet finalized. The FOST for KidsPeace is finalized and the transfer has occurred.


8. The meeting was adjourned at approximately 8:30 p.m. The next RAB meeting with both government and community members will be on April 18, 2000, at the Community Club at 7:00 p.m.


Respectfully submitted,


LAURA J. SPOSATO
Recording Secretary

Enclosure

APPROVED AS SUBMITTED:


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


RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
February 15, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Julio Vazquez, U.S. Environmental Protection
Agency

Dan Geraghty, NYS Department of Health
James Quinn, NYS Department of Environmental
Conservation
Steven Paszko, NYS Department of Environmental
Conservation

Community RAB Members Present:

Brian Dombrowski, Russell Miller,
Ken Riemer, Fred Swain, Karen Tackett,
Henry Van Ness, David Wagner

Community RAB Members Not Present:

Richard Durst, Community Co-Chair (excused),
Antje Baeumner (excused), Jeffrey Beall (excused),
Frank Ives (excused), Patricia Jones (excused),
Bob McCann, (excused), Ray A. Young (excused),
Dave Schneider (excused), Jan Schneider (excused),
Frankie Young-Long

Environmental Support Personnel Present:

Kevin Healy, USA Corps of Engineers, Huntsville
Rob Wilcox, USA Corps of Engineers, Huntsville
Michael Duchesneau, Parsons Engineering Science,
Inc.
Jim Louserre, Parsons Engineering Science, Inc.
Keith Hoddinott, USACHPPM
Randy Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Office for Project
Management
Thomas Battaglia, U.S. Army Corps of Engineers,
NY District, Seneca Project Office, Construction
Division

Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal
Susan Clark Porter, Fingerlakes Times
Tim Noga, Seneca White Deer, Inc.

Visitors:

None

2. LTC Brian Frank provided the opening remarks and then asked for introductions of all attending.
3. Mr. Absolom outlined the agenda and asked if there were any comments or changes to the minutes from the January meeting. There were no changes and the minutes were signed and will be entered into the record when Dr. Durst signs them.
4. Mr. Absolom then introduced our speakers, Mr. Kevin Healy, who gave a presentation on Ordnance and Explosives Characterization/Remediation at Seneca Army Depot Activity. He also introduced Mr. Rob Wilcox, from Corps of Engineers, Hunstville who gave a presentation on Impact Assessment, The Road to Cooperative Risk Management.
5. Some Highlights from Mr. Healy's presentation follow. A copy of the handout is forwarded with these minutes.

- Object was to provide an overview of UXO evaluation and cost analysis and show how we got where we are today, and also the pilot study being done at the Ash Landfill

- Project goals
 - Determine sites that have potential for Ordnance and Explosives.
 - Characterize each site.
 - Perform remediation with regard to Ordnance and Explosive Threats.

- Haz Tox (Hazardous Toxic and Radiological Waste) refers to chemicals, solvents and metals waste

- OE (Ordnance and Explosives) refers to ordnance waste.

- Characterization Process:

 - First do Archives Search Report, search past records, i.e., what kind of explosives

 - Engineering Evaluation/Cost Analysis (EE/CA). Investigation do sampling of how much ordnance. How determine cost to eliminate at the site.

- Remediation:

 - No further Action. Always have. Its is a baseline to measure others

 - Control. You may have something out there but it is too small a threat so you have maintain control.

 - Removal where you would do an actual removal.

- Archives Search Report (ASR) completed Dec 98. Visited Washington, D.C. also, not just local information. Did an extensive search. Identified 13 sites with a potential for OE. These are listed in the handout.

- Also highlighted general process phase for EE/CA. An EE/CA normally takes about a year.

- Geophysical test plot completed in January. Planted inert versions of ordnance/mock ups. Used at the Open Burning Grounds. Parsons evaluated results.

- Work Plans are being prepared and should be done shortly.

- Fieldwork due to begin in April/May 2000

Phases

Determination of OE/presence, do sampling to see what densities we have.

Try to determine risk impact.

~~- Started to do a RA on Ordnance. Numbers get too difficult to understand. We have completed impact analysis. Puts in more relative terms.~~

- Make recommendations for future actions.

- Public review/input.

- Action Memorandum states what found and what you will do.

-Hope to complete by Spring 2001.

Q: Talked about the OB Ground. What kind of assurance do you have if you only look at 1-2 ft.

A: Asked to strip 1 foot off the top. Map 1-2 feet below that. Small items if equipment only sees 1-2 feet. Larger items can be seen deeper. On smaller sites chances are not going to exist that far. Only other way to go across surface 1-2 feet. Go strip entire surface. Go 1-2 feet again. Somewhere combine levels of information. If something larger you will see it.

Q: When you say complete by stripping just process? Not actual recommendation?

A: Recommendation would begin after that.

You have this special circumstance in the Ammunition Area (SEAD 53), where have magazine igloos, used only for storage and shipment of OE into and out of the area. You usually don't find concerns.

- Not typically an OE concern since random tossing is against regulations/procedures.

- The ammunition storage area was recommended for additional characterization because of ASR suggestion after magnetometer had registered some "hits" in a ditch. The "hits" may be any metal object.

- Do a statistical sampling. Found hits. Only one problem with recommendation for statistical sweep. Can't do in an area with random dispersal pattern. Can use statistical sampling for basis of conclusion.

- You can either go for everything, do nothing or control.

- The ASR recommends a statistical sampling. However, this requires a random distribution and this is not the case with scenario at SEAD-53.

- Alternatives for a non-random distribution scenario:

Rely on control.

Partial characterization would increase the warm and fuzzy feeling but does not allow basis for conclusions.

More likely be a wildlife refuge.
Could do a 100% characterization.

- So what would be the solution. Looking for RAB input.

Way to do characterization.

1. Grids - random or placed over different plots of area brush clearance. Everything below gets taken out.

2. New method-Meandering Path Method. You would meander through woods and walk and collect data so you can plot and say where you were. Small compact area without mass clearing. Don't have to do all the clearing.

- Utilizing digital instruments. Found the correlation good. Worry about whether they could locate it too. If can find in test plot, they can find others as well.

- There have been times in other places where test plots didn't go as well.

- Expand different on range as opposed to ammo storage area.

- Ammo area fills with magazines, store different UXO. Not allowed to store fuse in same area. Required to keep them required distances apart. Range shoot item for target practice. Leaves metal behind or a dud could be left behind.

- Tom Battaglia - Reality at SEDA more remote. Can be safely picked up and moved. Have yet to find a military item fused and explosive at the same time. As long as the storage facility doesn't handle improperly, you shouldn't have a problem.

Q: Does DEC have an interest in the ammo area?

A: We have not talked to them yet. The last we heard from the state is one of several applications for that area. Right now the last we heard is the state doesn't have an interest in that area. Liability issue for them.

Q: Regarding the OB Ground, any debris removed with ordnance.

A: Not removed from the site yet. It is usually the very last thing we do on a project.

- Goes thru 3-4 states. Check by supervisor, then by senior UXO supervisor that contractor certifies on paper that is inert. We have QA people on this (Fred Allen) responsible for checking. Certification would certify it is free of any explosives or dangerous material.

Q: Where do you remove it to?

A: Scrap dealer-it is recyclable.

Q: Are there any other closure sites dealing with unexploded ordnance?

A: Kevin responded not aware of any. Not a typical ordnance concern.

Q: Non-special circumstance area - 2-3 feet. Transfer unrestricted, uncontrolled or clean?

A: Don't certify anything except for scrap as we far as removing everything to a certain depth. We say that we have cleaned up to the depth.

Q: What about Rerenton Arsenal

A: Keith Hodinott answered released land but did have restrictions on land. The year 1974 was pre-RCRA, before a lot of environmental laws were here

- Everything we do is reviewed and approved by Defense Department Explosive Safety Board (DDESB). There are three default categories of clearing levels:

- 1 ft. - wildlife area
- 4 ft. - general public
- 10 ft. - for construction

- There are default depths. Depend on what find could get unrestricted use.

- NYS deed restrict run and land under NYS law restriction runs with the land. Permanent with the deed itself.

- Steve Absolom added that if you go out ammo area do less than 100% survey, confidence level doesn't change. Put restriction can't dig, put restriction on there. Nothing changes--what are you gaining by spending more? End result would be a deed restriction anyway.

Q: What happens if something is found anytime after the transfer.

A: The Army is still responsible. They would call the sheriff. They would call EOD. If we left something, the Army is responsible. Jim Quinn added that DOD would be asked to move to site.

Q: Any ready to pull out? How do you control it?

A: Fenceline in tact and Army employee remain until rest complete. Maintained through the fence. Probably one year before EE/ECA is done. Put out public review process. A year and a half before come to conclusion on ammo area.

Q: Has there been any fieldwork done.

A: ~~October timeframe. Usually lasts 4-5 months.~~
Report is 4-5 months after that.

Q: Who has authority to see this is what we are doing?

A: Ordnance not as structured. We have used CERCLA as basis. We present it to RABS and general public for recommendations. Regulators can agree or disagree. Ultimate authority DOD Explosive Safety Board. Congress mandated. Made up of technical experts to oversee across the country.

6. Mr. Absolom introduced Mr. Rob Wilcox who gave the next presentation on Impact Assessment, The Road of Cooperative Risk Management. A copy of his handout is provided with these minutes. This is a portion of decision process after you do the site characterization. Some highlights of Mr. Wilcox's presentation:

- Everyone wants to avoid an OE accident. Communication failures are common. These failures are a result of attitude.

- Need to learn the community needs assessed with ordnance hazard, minimize the risk, manage residual hazards. It is a continuous process.

- Profile of Ordnance Accident. Dangerous stuff. Not something you want out in the public sector. Humans cause detonation. There have been 14-17 deaths since 1945. Land that has been released. That is 17 deaths in 55 years. Now have a low probability of accidents. Avoid consequences. Human behavior is the key item.

- Some contribution factors for potential for an OE accident:

Site stability - i.e, erosion causes problems.

Ordnance sensitivity - not fused, not sensitive. Not fused, not armed. Smaller bullets more sensitive.

Ordnance Density - More you have the bigger the hazard.

Ordnance Distribution- How many per unit area.

Individual Behavior - problems if don't follow rules.

Commitment

Institutional Behavior

Site access - who has access, how get in there.

Site Use - how its used, people issue

- In San Diego in 1983 two children were killed. Brought in wrongful loss lawsuit. The Government was dismissed. Three clearance efforts were done before property was released. Judge ruled the government did all it could do.

- Problems go with the law. Superfund Amended. Gives DOD responsibility that far exceeds authority to deal with it. We cannot deal with any of this if we don't get right of entry from the landowner. Need to work with the state and government landowners.

- Because OD behavior issue rules on state and governmental level.

- It is our responsibility make it as safe as we can and everyone do what they can to do it.

- Event Tree -

Presence. If not present, no OE accident

Access. No people, no possibility of accident

Behavior. If appropriate no accident

- If not present, no accident. These are all dependent on eachother.

- Now ordnance there. Can resolve by taking away? Can't get 100%. Access restriction to deal with.

- Behavior also applies to institutional behavior. No way to guarantee.

- Should have alternatives to cover strategies to eliminate chance of accident.

- Confidence in program.

7. Mr. Absolom opened the floor for open discussion.

8. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members will be on March 21, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:

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

RICHARD A. DURST
Community Co-Chair

Impact Assessment

Seneca Army Depot
The Installation -Wide EECA

The Road to Cooperative Risk Management

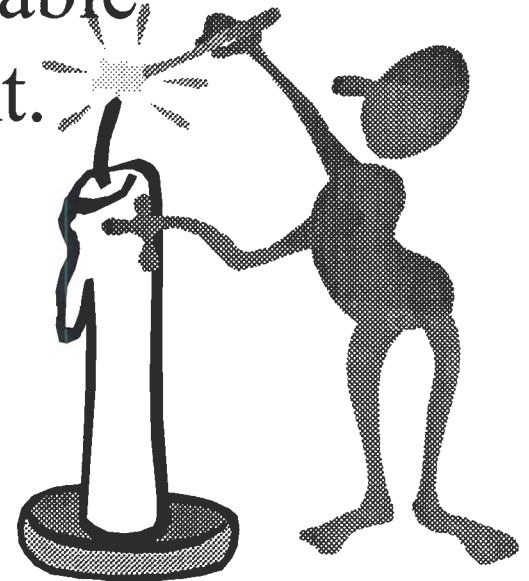
Rob Wilcox
CEHNC-OE-CX

Common Goals

- Everyone wants to avoid an OE accident
 - Property Owners
 - Regulators
 - Community Leaders
 - Other Stakeholders
 - Responders
- Communication failures are common

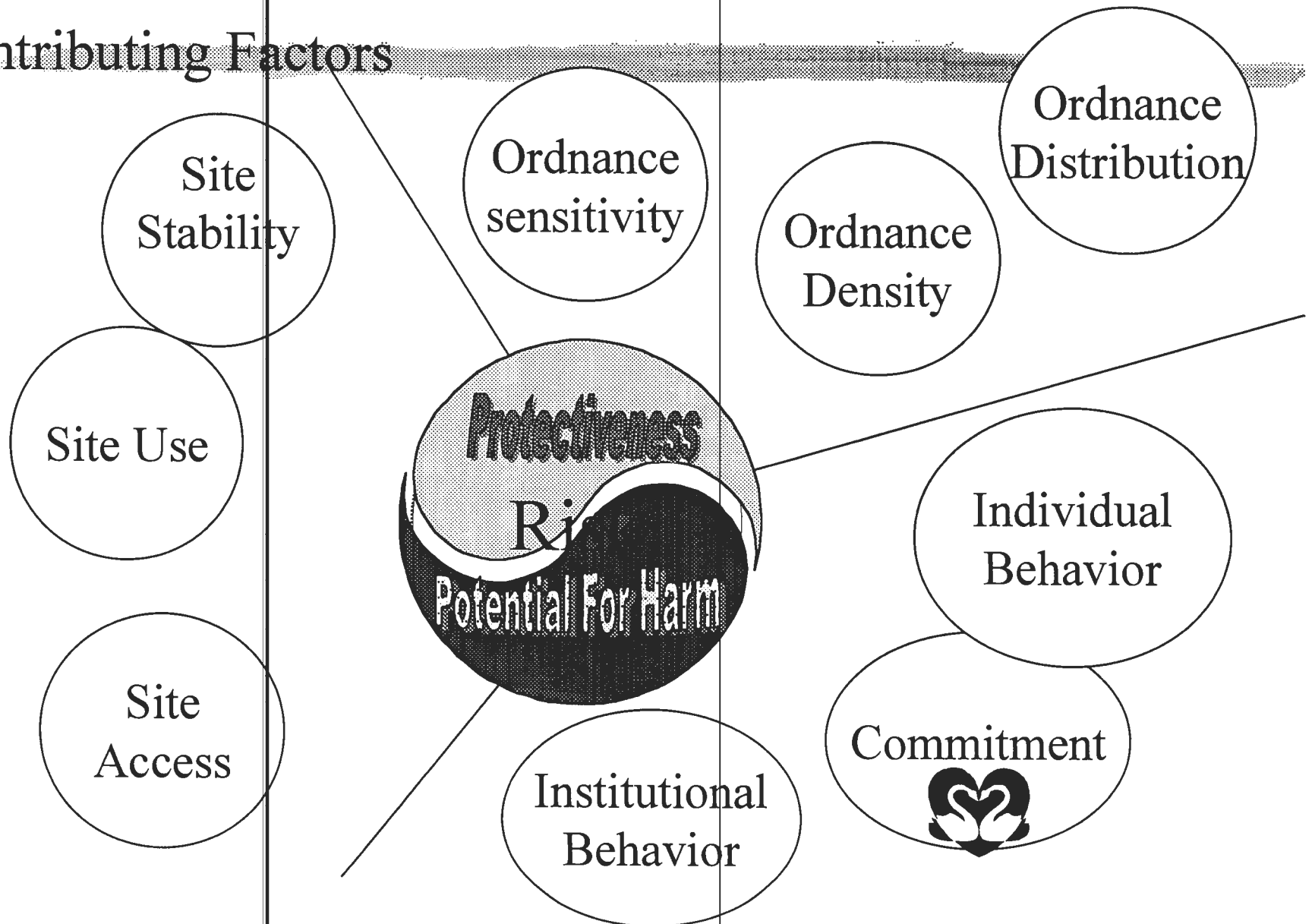
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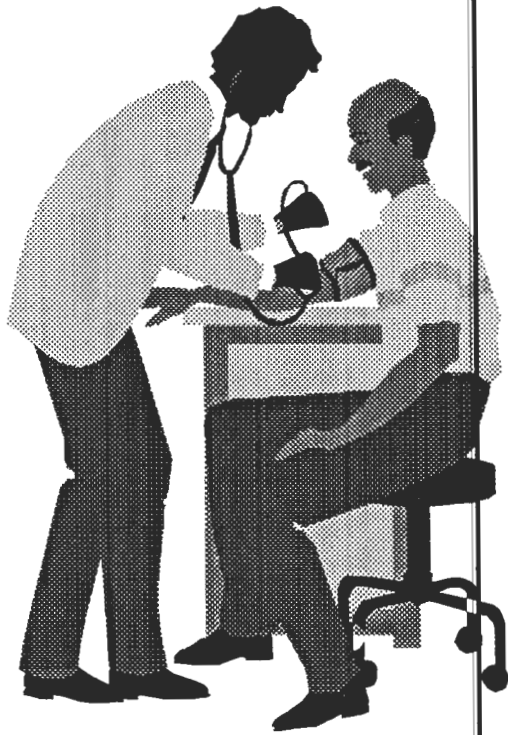


Potential for an OE Accident

Contributing Factors

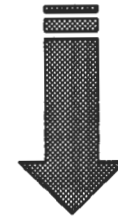


Direct measurements are not always possible



- Blood Pressure
- Temperature
- Height
- Weight
- Blood Count
- etc

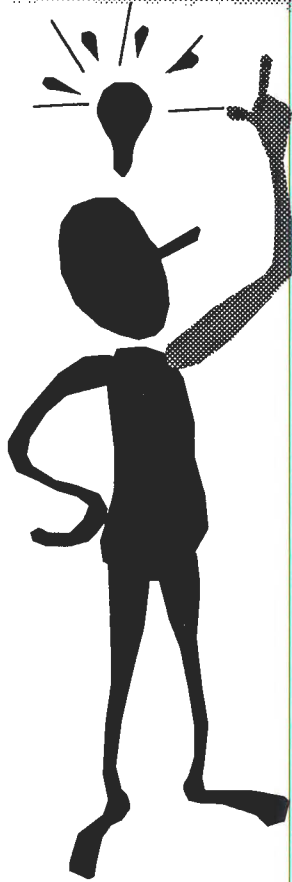
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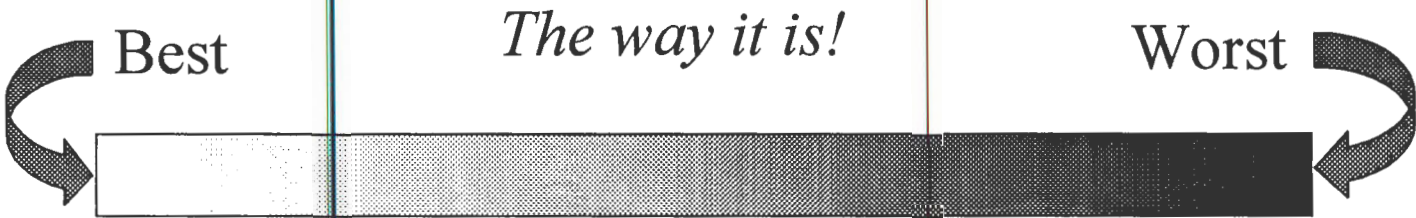
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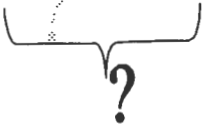
Measuring Protectiveness

The way we wish it were.



The way it is!

No distinct boundary



Measuring Protectiveness

Ordnance			Site			People		
Sensitivity	Density	Distribution	Use	Access	Stability	Individual	Agency	Commitment
Before Response(1989)								
EC	EC	EC	EC	EC	EC	EC	EC	EC
After Response (1994)								
Recurring Review (1999)								

EC = Existing Condition



No Change



Significant Improvement



Sustained Improvement



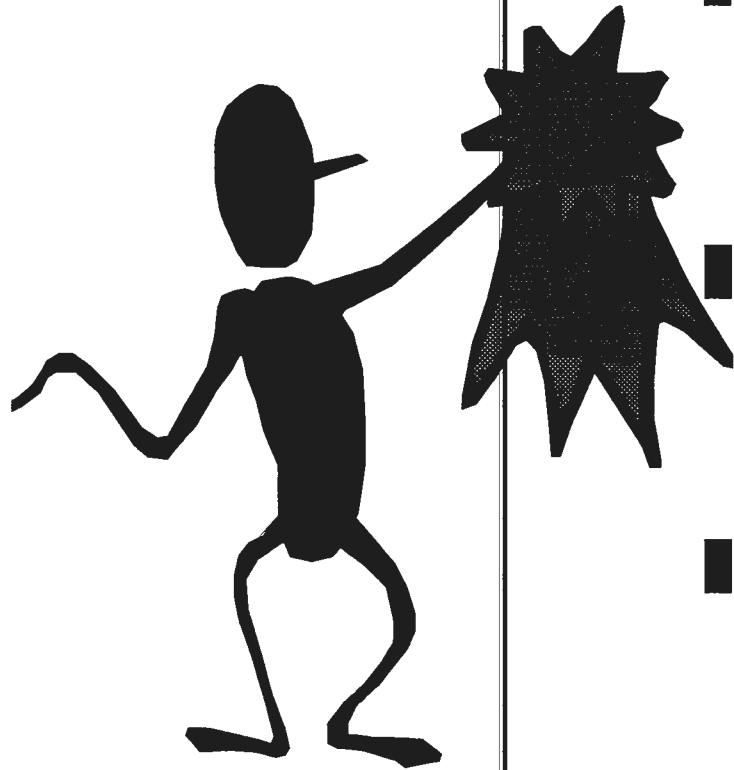
Needs Improvement



Serious Deterioration

Figures assigned by comparison to previous 5 year interval

The Project Remains Protective



- No Deterioration
 - Ordnance Density
 - Ordnance Distribution
- Site improvement
 - Vegetation limits access
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The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

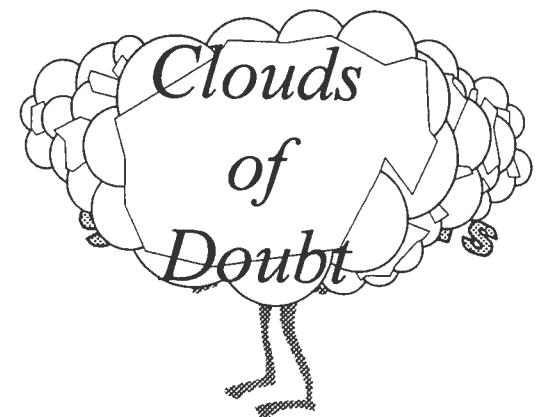
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 - Community Leaders
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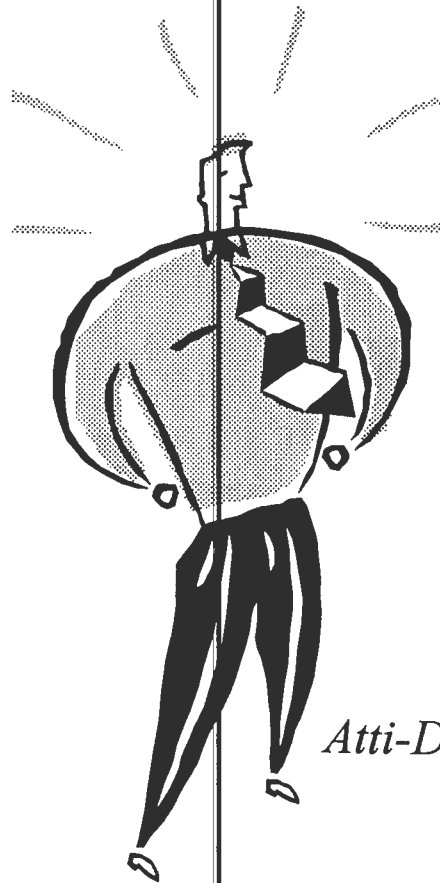
1945 -
17 Deaths

Attitudes

- Ordnance response is exclusively a safety issue.
- Stakeholder input is only valuable after we have characterized the site and selected a plan.
- Stakeholders, regulators and property owners should be more considerate of our schedule
- etc.



Interest Group Attitudes*



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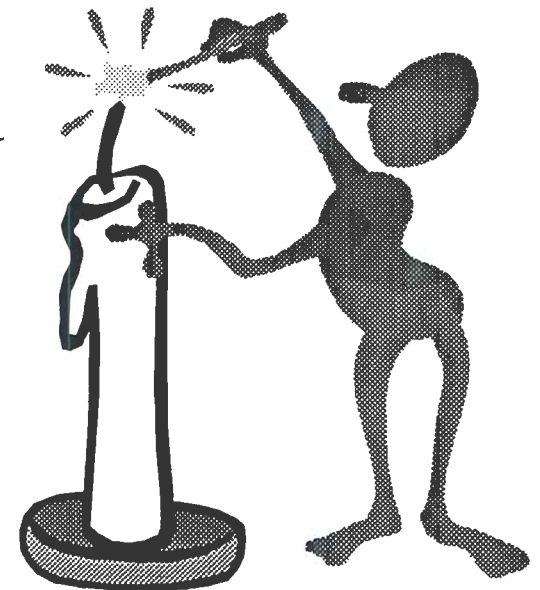
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**Reducing Risk September 1998 Lenny Siegal*

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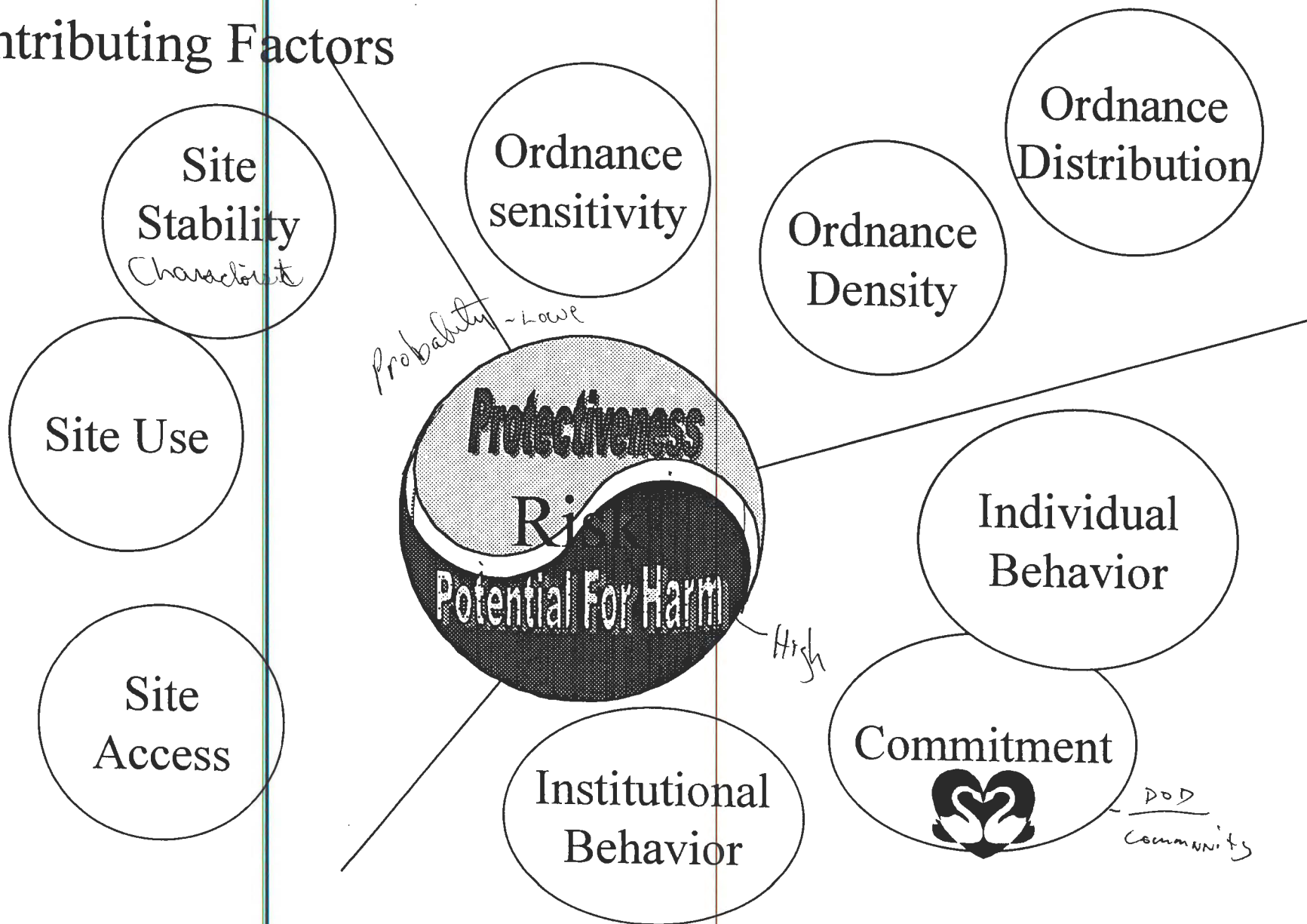
Need
EXTRA
SLIDES



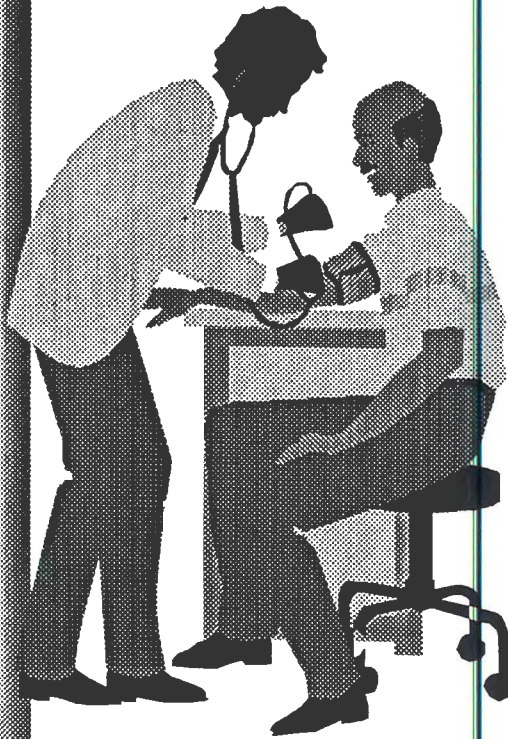
Potential for an OE Accident

ISSUES TO BE ADDED

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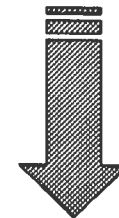


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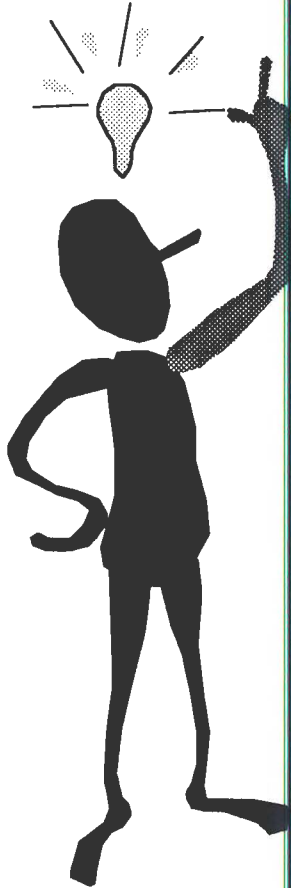
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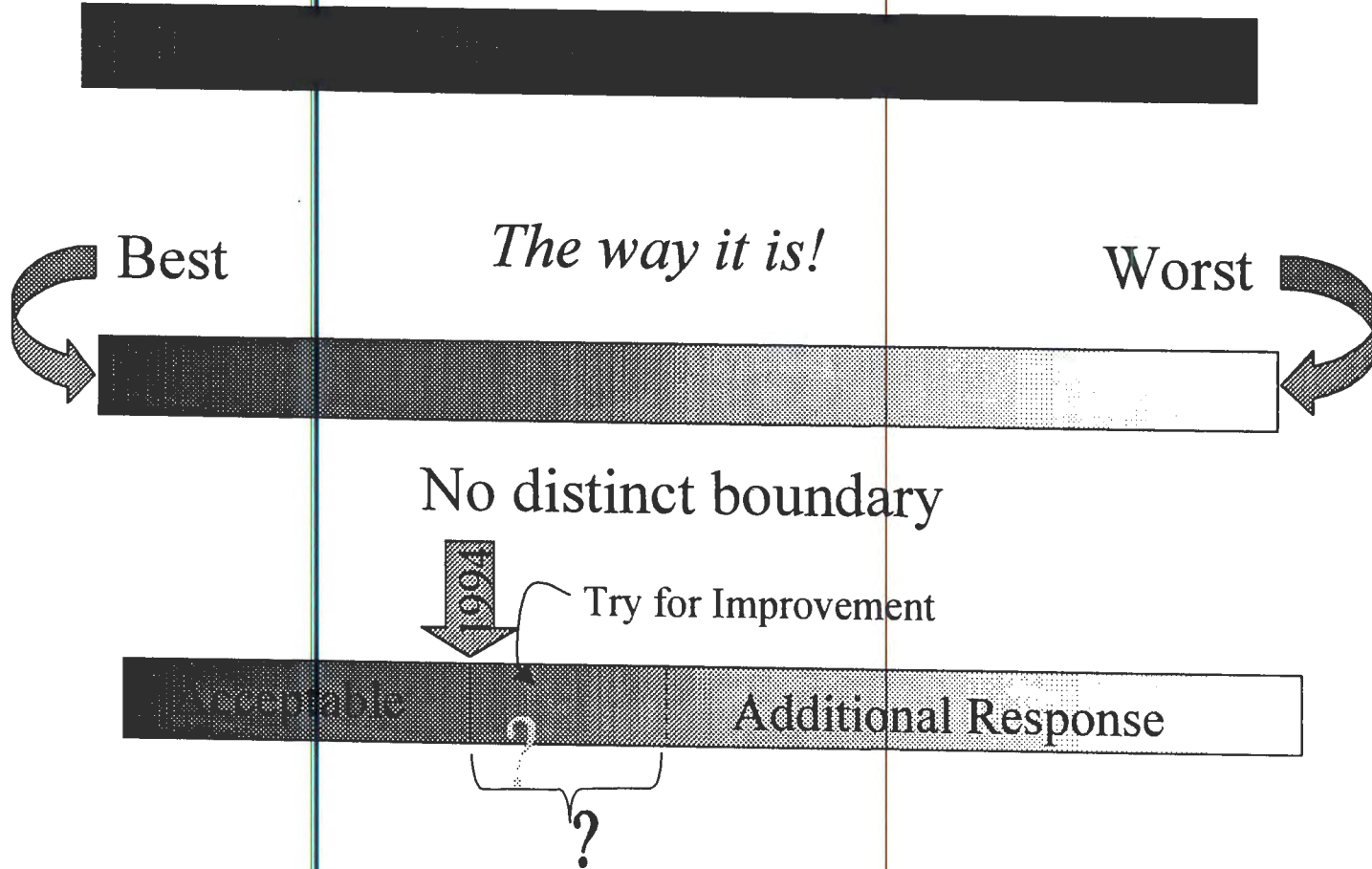
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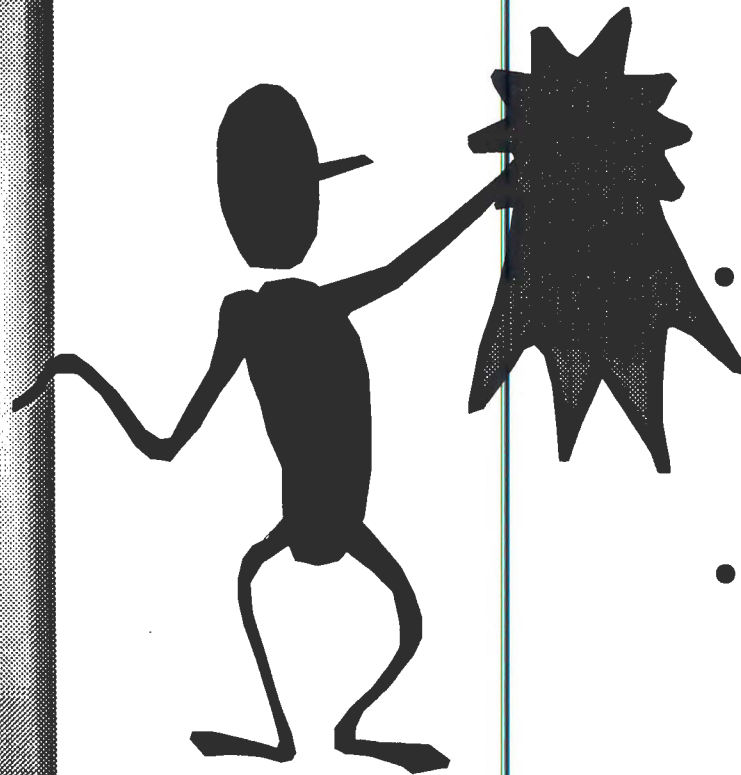
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Need
Synergy

*Ordnance and Explosives
Characterization/Remediation at Seneca
Army Depot Activity*

Restoration Advisory Board Presentation
15 February 2000

Project Goals



- To determine sites that have a potential for Ordnance and Explosives
- To characterize each site with regard to the presence/absence of Ordnance and Explosives
- To perform remediation with regard to Ordnance and Explosives threats

Definitions

HAZ-
Tox +

Ordnance and Explosives (OE) - 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.

16%

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Characterization/Remediation Process



- Characterization
 - Archives Search Report
 - Engineering Evaluation/Cost Analysis
- Remediation
 - No Further Action
 - Controls -
 - Removal -



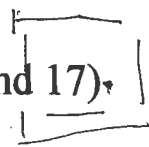
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- Archives Search Report (ASR)
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Searched records, archive files, conducted interviews
Identified 13 sites with a potential for OE

Characterization Phase: Potential OE Sites Identified in the ASR

Work Area
Prison

- Former EOD Range (SEAD-57)
- EOD Area #2
- EOD Area #3
- OD Grounds (SEAD-45)
- Burial Area near Indian Creek
- Grenade Range - m203
- Deactivation Furnaces (SEAD's-16 and 17)
- Ammunition Area (SEAD-53) — *
- Small Arms Range (SEAD-46) • 3.5 rocket RANGE →
- Former Liquid Propellant Storage Area (SEAD-43) (1)
- Former QA Function Test Range (SEAD-44A) (2)
- OB Grounds (SEAD-23) (3) →



12 sites
VS
13 LISTED

DF 2 sites

OE
↑
20MM
SOCAL
↓
SMALL
ARMS

Notes:

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 - determination of OE presence/project densities
 - determination of risks/impacts
 - recommendations for future actions
 - public review/input
 - Action Memorandum
- completion by spring 2001 (?)

June?

Aug 2000

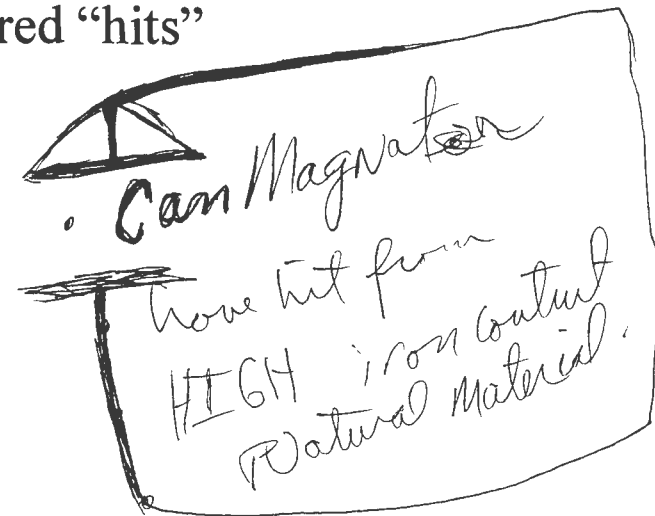
Question 1-2 1/2 foot
Lm

CONFIDENCE -

Characterization Phase:

EECA

- Special Circumstance - Ammunition Area
 - 6500 acre, fenced-in, area
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 - Characterization alternatives for a non-random distribution scenario:
 - o No characterization (rely on controls)
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 - o 100% characterization

Characterization Phase: EE/CA

- Special Circumstance - Ammunition Area (continued)

- What Solution ?? \rightarrow D
- RAB Input ??

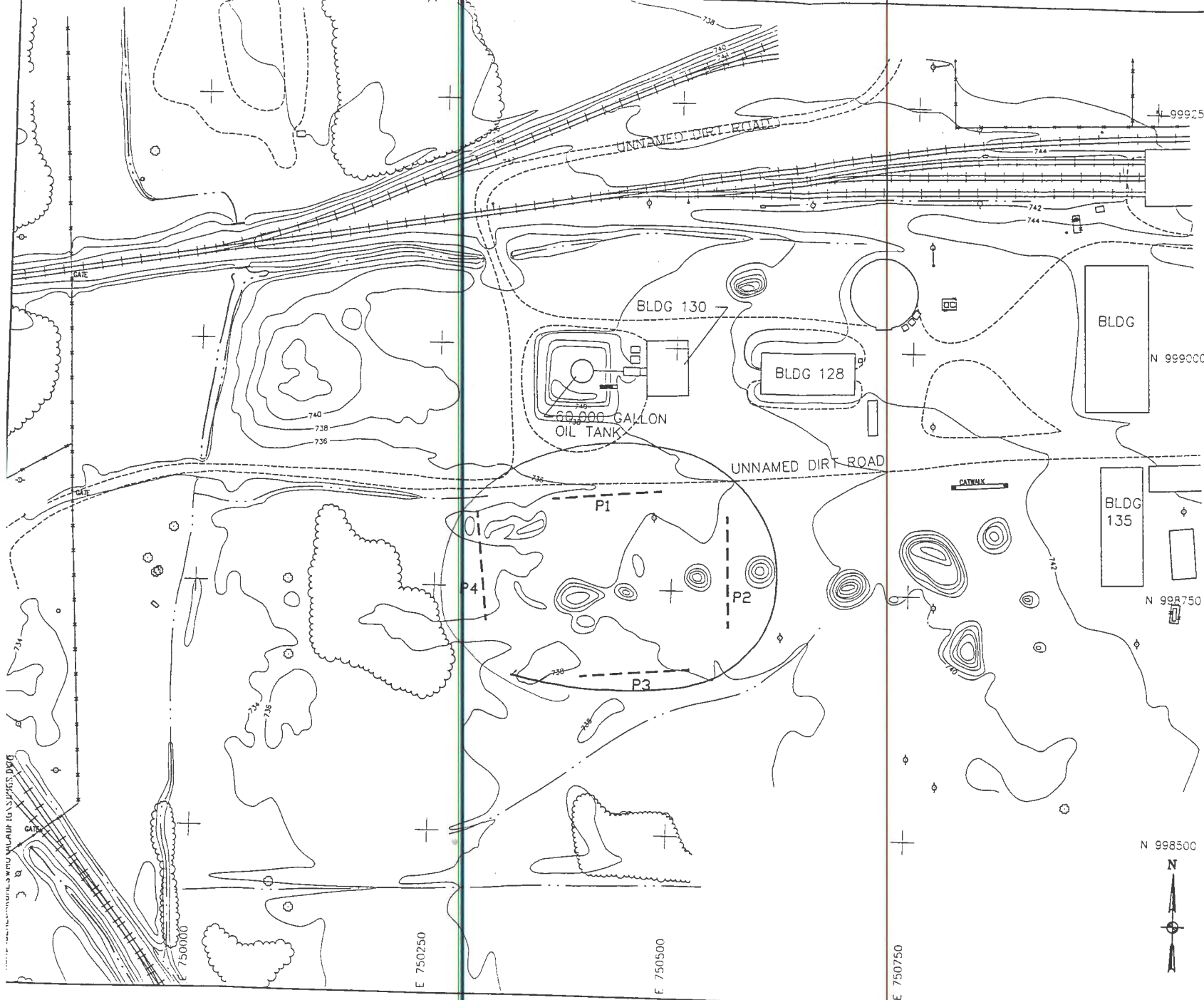
- Ammo Storage - anywhere - ~~else~~ \rightarrow Technical EVAL.

- Closure \rightarrow Kevin to get in Former-Site Transfer

- 1

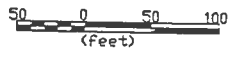
Sewage Sludge Waste Piles SEAD-5

Stephen M. Absolom
BRAC Environmental Coordinator



LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 --- GROUND SURFACE ELEVATION CONTOUR
- ⊕ ROAD SIGN
- ⊕ DECIDUOUS TREE
- ⊕ GUIDE POST
- ⊕ FIRE HYDRANT
- ⊕ MANHOLE
- ⊕ COORDINATE GRID (250' GRID)
- ⊕ POLE
- ⊕ UTILITY BOX
- ⊕ OVERHEAD UTILITY POLE
- ⊕ MAILBOX/RR SIGNAL
- SEISMIC PROFILE



PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE:
SENECA ARMY DEPOT
 EXPANDED SITE INSPECTION
 8 MODERATELY-LOW PRIORITY AOC'S

DEPT: ENVIRONMENTAL ENGINEERING DWG. NO: 720518-01002

FIGURE 2.3-1
 SEAD-5 SEWAGE SLUDGE WASTE PILES
 LOCATION OF GEOPHYSICAL SURVEYS

SCALE: 1" = 100' DATE: 4/10/95 SHEET: A



Site Characterization

- 5-6 sewage sludge piles range 5-10 ft high
- Entire site approximately 200 ft by 200 ft
- Sludge was stockpiled during the early 1980's
- Sewage sludge was removed from drying beds at two depot sewage treatment plants and transported to this site

Site Characterization (cont.)

- Contaminants of concern are copper, mercury, silver, and zinc
- Results of testing showed no impact on groundwater or subsurface soils
no leaching from storage pits
- No imminent or substantial endangerment present *to human health - not urgent*
- Removal is non-time-critical

Engineering Evaluation/Cost Analysis (EE/CA)

- decided removal action way to go,*
- Outlines a non-time-critical Removal Action to clean up the Sludge Piles
 - Draft EE/CA dated February 22, 2000 sent to regulators (2 pages)
 - Approval Memorandum (1 page) justifies need to perform an EE/CA
 - NY State DEC commented on EE/CA and want clean up levels down to TAGM values

*for historical. 3 page plan,
still talking w/ agency -
dig down 6 inches
compulsory sampling.*

sea Stated will will do a removal action.
Contractor come in & excavate

Removal Action

- Excavation and off-site disposal was chosen as the preferred remedial alternative
- It is the most cost-effective method for the small volume of material
- Confirmatory samples will be taken
- There will be a 30-day public comment period before the EE/CA is finalized

Q7 9 a spread in monitor dx
A) Yes, nys rules part 360 have to test
Soils & monitor impacts to soils
We have metals in it & that is why have
Q) As it composts monitor it.

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Impact Assessment

The Road to Cooperative Risk Management

Rob Wilcox
CEHNC-OE-CX

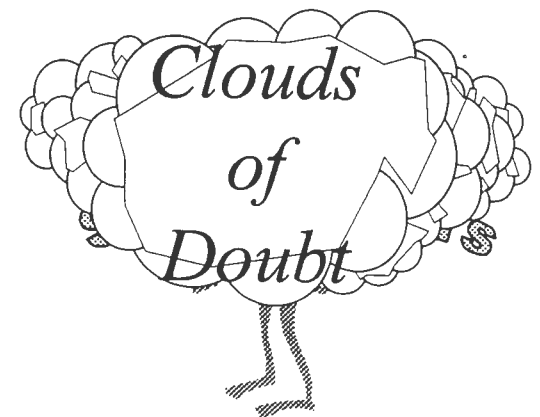


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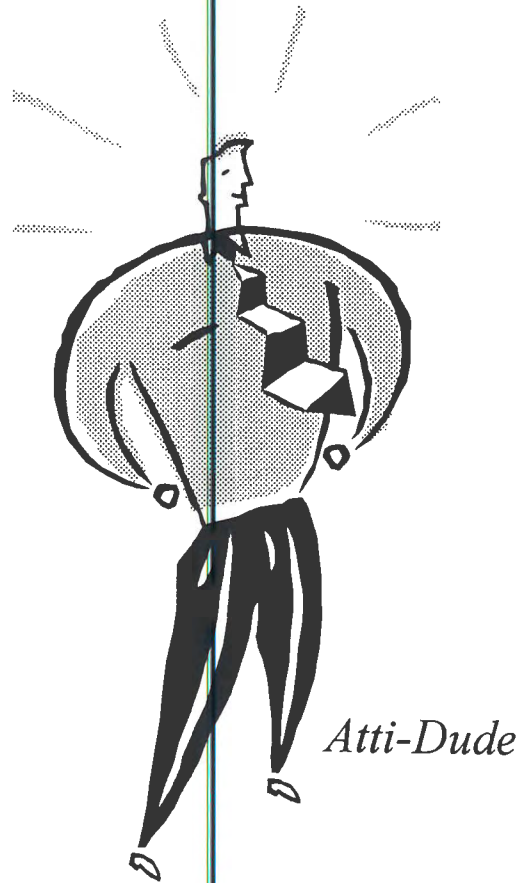
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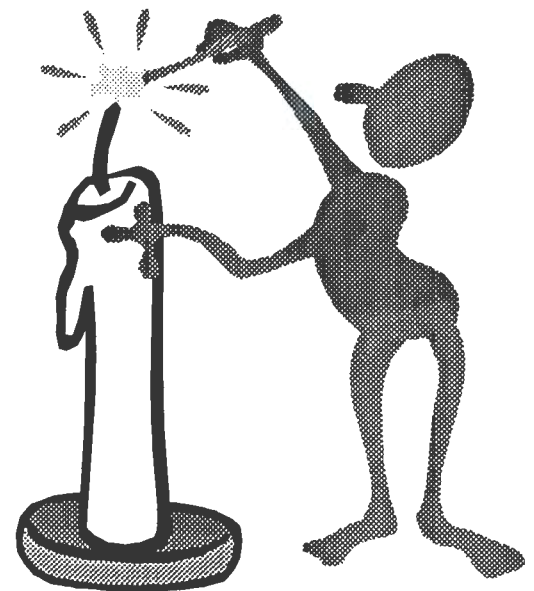


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**Reducing Risk September 1998 Lenny Siegal*

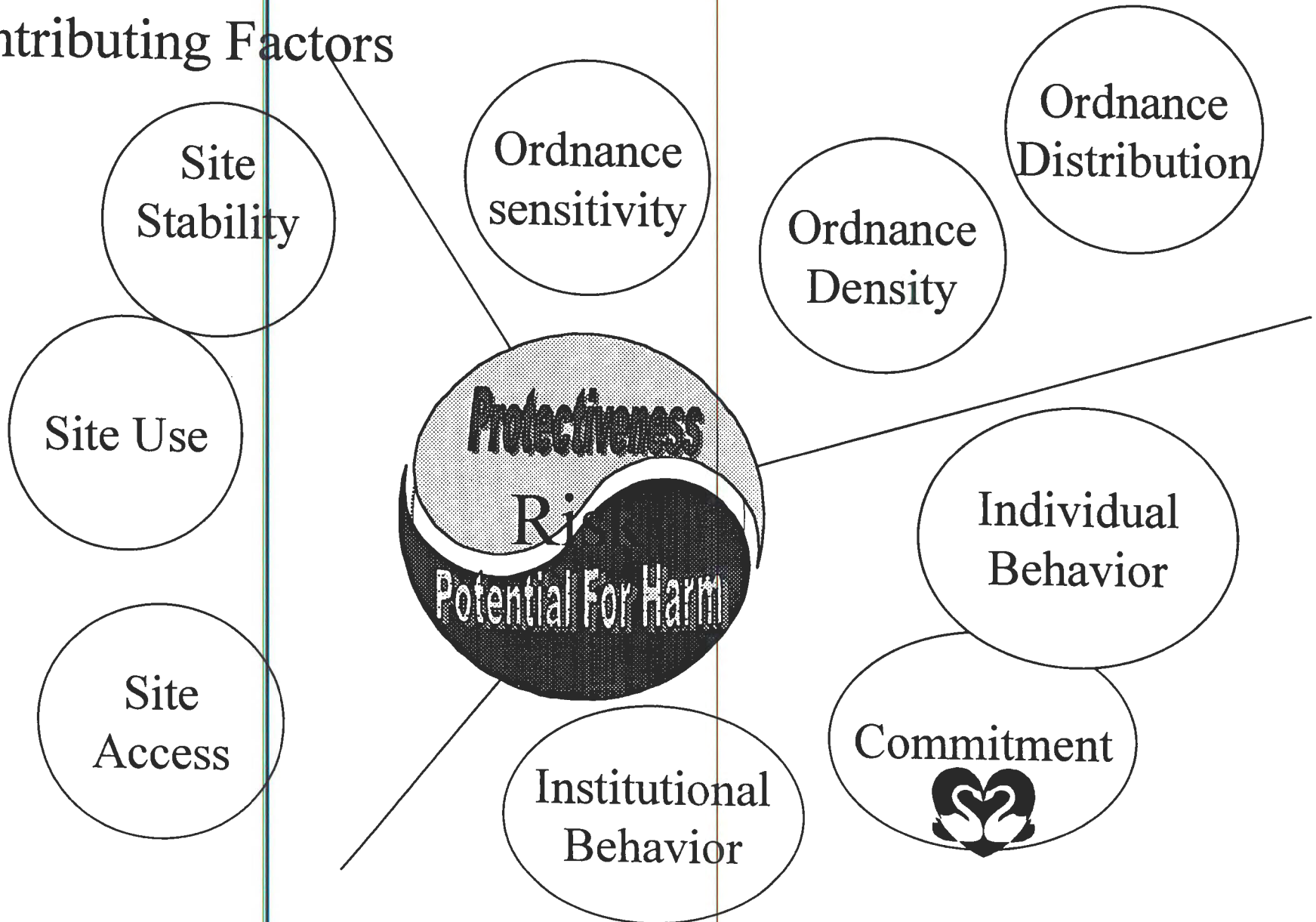
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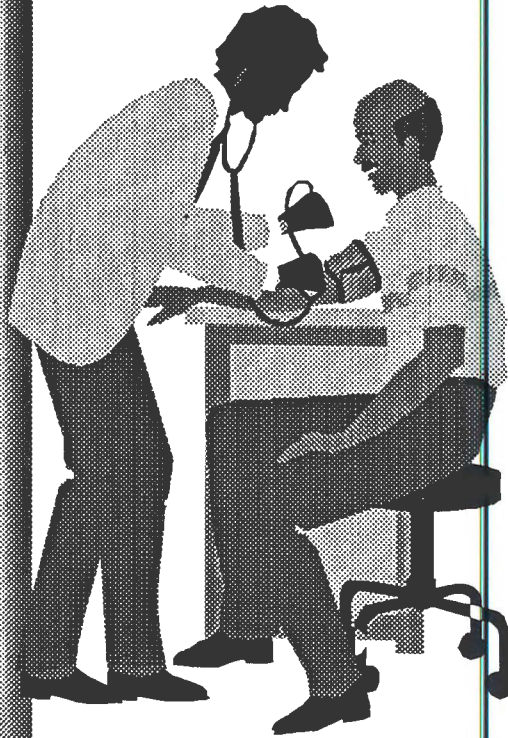


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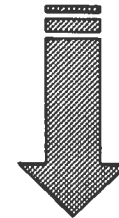


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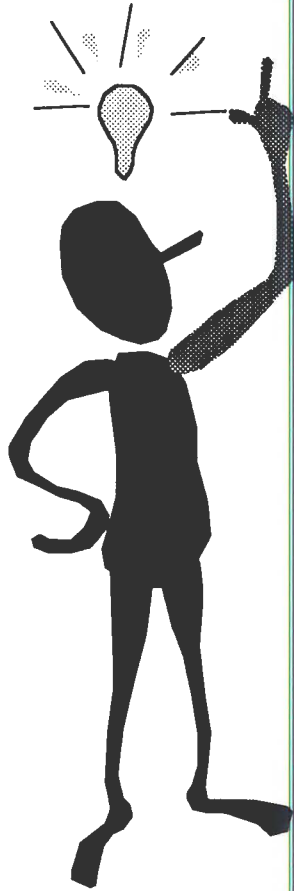
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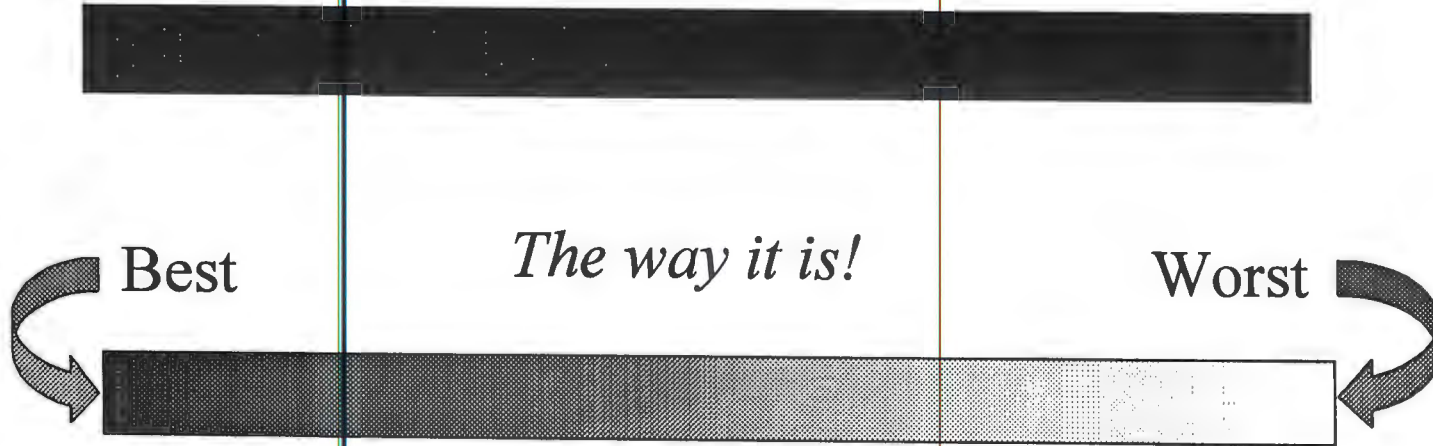
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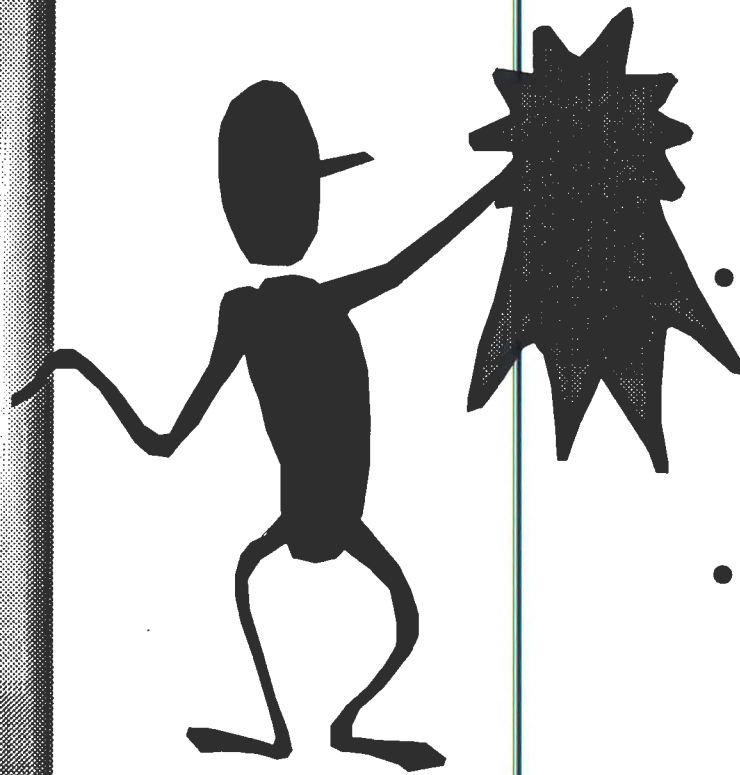
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Presentation to the RAB
March 21, 2000

Ecological Risk Assessment

Michael Duchesneau, P. E.

Topics for Tonight's Presentation

Two parts

- ① • *Overview of Ecological Risk Assessment (ERA)*
 - ② • *Summary of March 9 Albany Meeting*
 - *Presentation has not been Reviewed or Agreed to by EPA or NYSDEC*
-

Ecological Resources at Seneca

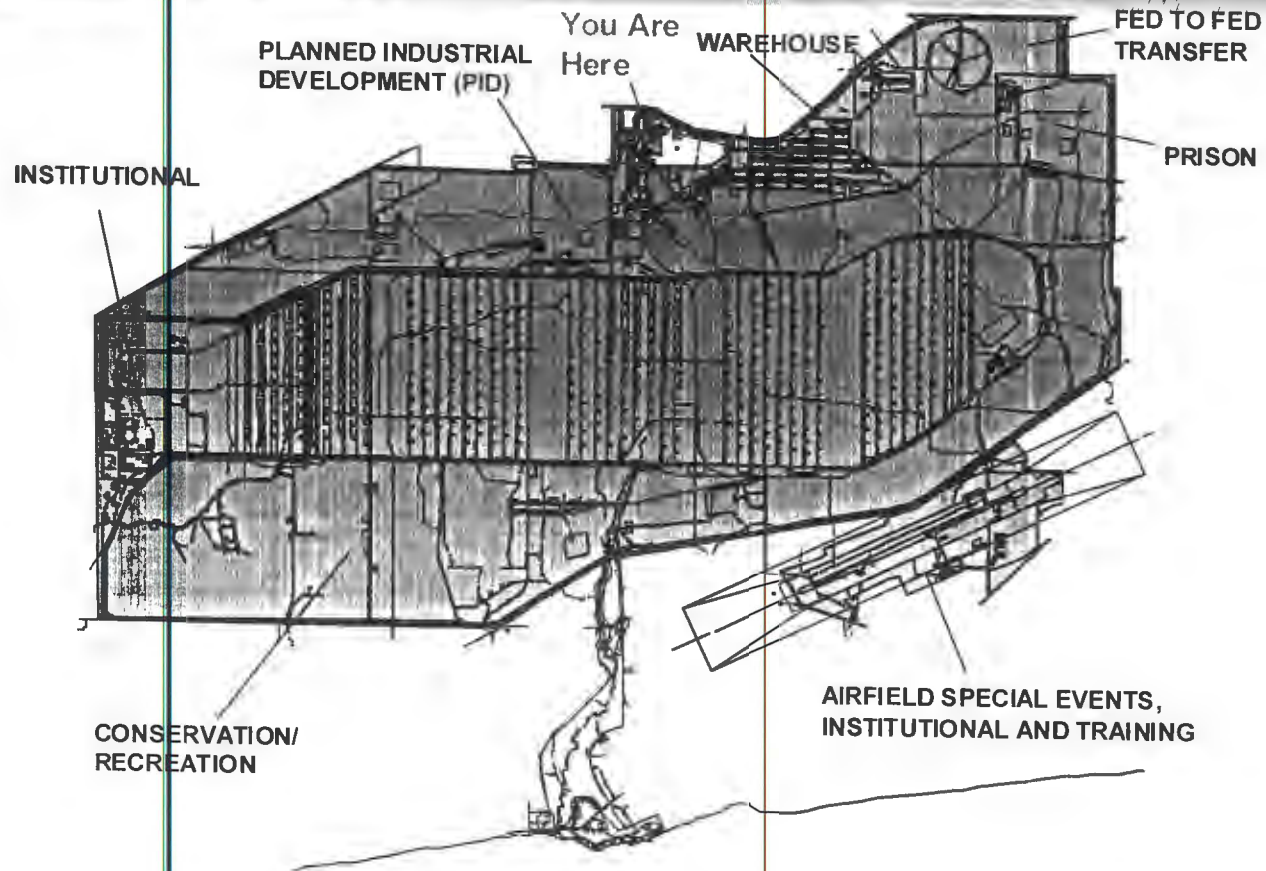
- Current Ecological Resources at Seneca
 - Wetlands, "Duck Pond" (Migratory Waterfowl)
 - Whitetail Deer Herd
 - Wild Turkeys, Foxes, Owls, Hawks, Osprey
well established ecological habitat.
 - Reeder, Kendig, Kendaia and Indian Creeks
all feed Seneca lake - habitat for fish & trout.
- Future Land Use Considerations
includes recreational & conservation use.
 - Approx. 6000 acres for
Recreational/Conservation Use

no threatened or endangered species per NJDEP

PARSONS ENGINEERING SCIENCE

Indian Bat & Bog Turtle - not here

Location Map of Land Use



PARSONS ENGINEERING SCIENCE

What is Ecological Risk Assessment ?

This is a process

A process that evaluates the adverse ecological effects that may occur or are occurring to ecological receptors as a result of exposure to hazardous substances

understand what effect any release has on ecological comm.

Significance of Ecological Risk Assessment (ERA)

- Numerous Sites within the Future Conservation/Recreational Area
- ^{*in order to*} Transfer of Property Dependent on Resolution of Risk Issues ^{*have to come to understanding of what risks are.*}
- ERA will be “Driver” for Future Risk Management Decisions ^{*that be forced to make in future*}

Ecological Risk Assessment (ERA) Complexities

ERA - used to get overlooked,

- More Difficult to do than Human Health *well documented,*
- ① • Numerous Receptors to Identify and Assess *have moving target,*
- Procedures Vary; Community/Population vs Individual Evaluation *- select good endpoint to measure - lots of differences in how eval.*
- Guidance is New and Evolving *- most recent - Oct of last year - still working.*
- Toxicity Data Lacking for Most Ecological Receptors *lack of toxicity data makes it difficult to do,*
- More Uncertain than Human Health *leads to more uncertainty & diff in assessing the*

diff to do ERA

ecological impacts are

Overview of Ecological Risk Assessment (ERA)

Addressed these 4 questions

- Why Do We Do Risk Assessment ?
- What is Ecological Risk Assessment ?
- How Do We Do Ecological Risk Assessment ?
- Risk Assessment versus Risk Management ?

Why Do Ecological Risk Assessment ?

- *els is* Required by "Superfund"
 - "assess the extent to which the release poses a threat to human health or the environment"
- Needed to Quantify the Threat (Risk) - *measure our decisions based to handle.*
- Used to Establish Acceptable Exposure or Clean-up Levels *set a limit to what is allowable.*
- Used to Evaluate Effectiveness of Proposed Remedial Actions *use it to compare our alternatives.*

How Do We Do Risk Assessment ?

Generic - 4 basic steps

- Identification of Chemicals of Concern (COC)
Evaluate
- Exposure Assessment
Look at
- Toxicity Assessment
- Risk Characterization
Calculate what risk is

Identification of Chemicals of Concern (COC)

- Can do this well -
- 1 • Sample and Analyze Soil, Groundwater, Surface Water/Sediment
 - 2 • Eliminate Non-Detects
 - 3 • Compare Data to Background
 - 4 • "Screen" Data Against Guidelines, Standards and Criteria

Once we do sampling we validate our data. From that point - don't have to look at compounds that are non-detect -

Try to limit # of chemicals -

Do a comparison to background.

PARSONS ENGINEERING SCIENCE
How much risk if less than background, say below criteria (TACMs) no point in considering any further.

What are the Chemicals of Concern (COC) ?

- **Petroleum and Residuals** *from pet mixtures*
 - Polynuclear Aromatic Hydrocarbons (PAH)s
 - **Solvents**
 - **Metals** *lead, copper, zinc*
 - **Explosives** *residuals of open cut / burning,*
 - **Pesticides and Herbicides**
-

Exposure Assessment

- How much COCs gets into the Receptor?

Follow a sequential process-

- Receptors? *- who being affected*

- Exposure Pathways?

- Ingestion *- soil, water, plant material,*

- Inhalation *thru nose*

- Dermal Contact

- Time for Exposure? *how much time is exposure, last issue is what is the*

- Concentration of COCs at Exposure Point

look at →

- Reasonable Maximum Exposure; 95th Upper Confidence Limit of the Arithmetic Mean

*mean means average -
You look at the mean.*

Type of Species we have
done to date.

Example Representative Ecological Receptors

Receptor

Red-Tailed Hawk
Eastern Cottontail
Shrew
Deer Mouse
Creek Chub

Represents

Raptors
Large Mammals
Small Mammals
Small Mammals
Fish

2nd Step
Ecological Exposure Scenarios

Representative smatheny of receptor

	<i>Live close to site,</i> Deer Mouse	Creek Chub <i>-small minnow</i>
Ingestion of soil	X	--
Skin contact with soil	O	--
Ingestion of food	X	--
Inhalation of dust and vapors	O	--
Contact with surface water	--	X

X = evaluated quantitatively

O = evaluated qualitatively

-- = not a pathway

3rd Step

Toxicity Assessment

- What is a "Safe" Level of COCs ?
 - Humans
 - Reference Dose for Non-Carcinogens
EPA has established these
 - Slope Factors for Carcinogens
 - Ecological Receptor - *not as clear cut*
 - No Observed Adverse Effects Level (NOAEL)
if not available use
 - Lowest Observed Adverse Effects Level (LOAEL)
- Ecological Receptor Endpoints?

*Other ways to calc toxicity - do w/ a population study -
do by body weights.*

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*Q) What is slope factor
A) when EPA plots e^{-1} of dose vs # of cancers -
slope of line is slope factor. equals to cancer risk -
in $\mu\text{g/kg}$ of body wt.*

Q) W NOEL LOWER are they observed superficially or
diagnostically

Last
part

A) It is widespread. e.g. mouse had poor resp to test,
called mouse found tumors, POTL didnt see any diff
fm control group vs feeding 1Mg.

Risk Characterization

Lower - barely saw change

Low prod use in lab for part of effect. May not be
comp to our site those #s are what we use. If want to go
out to site, spend
millions doing diff
studies.

RISK =

Exposure Dose

"Safe" Allowable Dose

Cal exposure doses compare our toxicity assessment
to cond used allowable.

Look at what is
avail in literature

Target for Ecological Quotient (EQ) is less than 1

EQ score allowed is less than 1,

conclude don't have prob of less than 1

> than 1 have concerns

Uncertainties with Calculation

- Do COC accurately represent Exposure Concentrations?

Did samples chemical enough

- Analytical Limitations ?

Limitations to analytical processes - only allow us to see certain things

- Toxicity Data Availability?

how much is available

- Accurate Bioaccumulation Factors ?

How chem bioaccumulate - how does that all happen

- Assumptions of Exposure?

Does the mouse live at site all the time - in range of mouse house

- Receptor and Endpoint Selection ?

All receptors -

some more sensitive

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Are we - way of mouse body wts

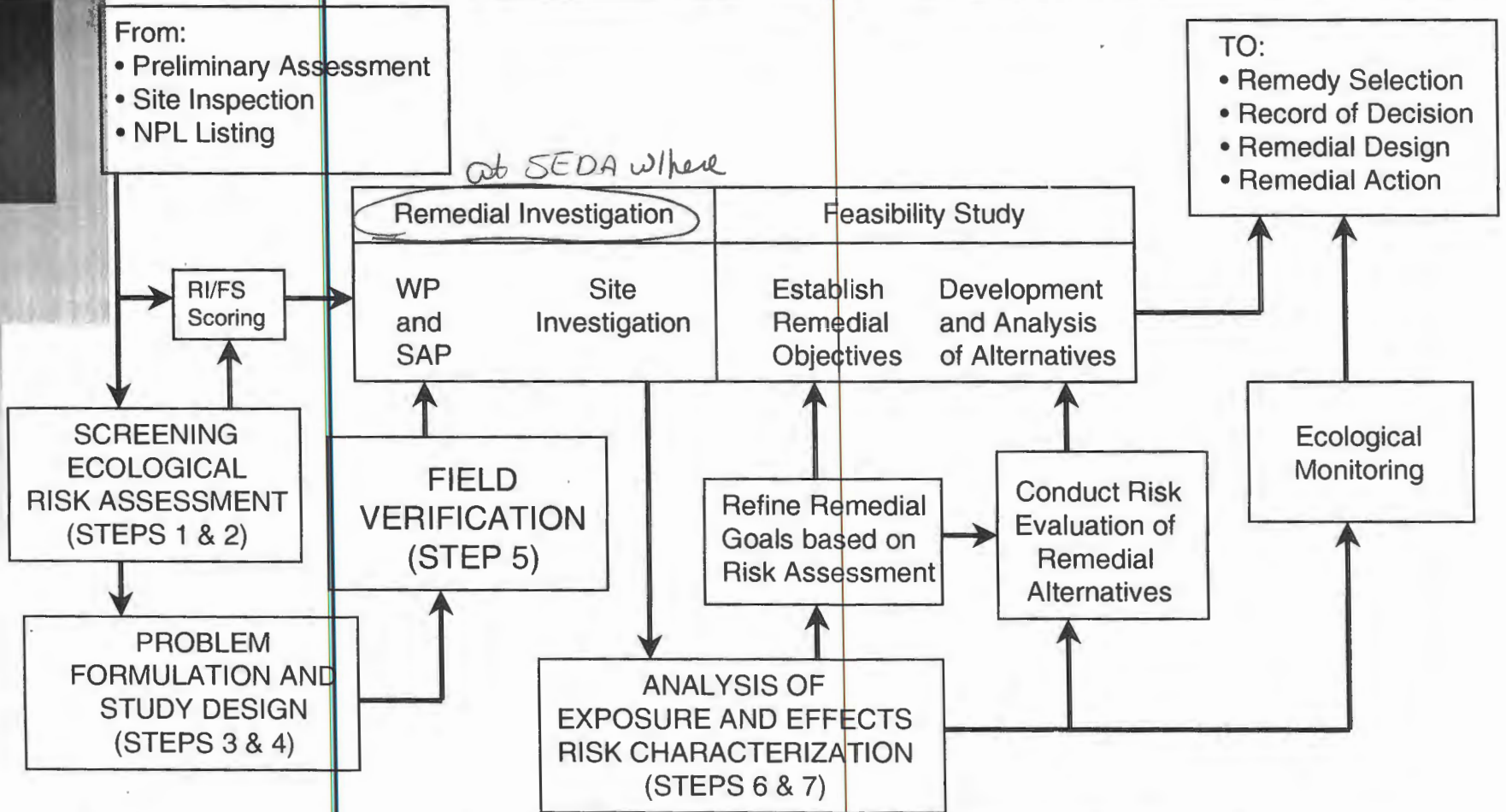
How Is an EPA Ecological Risk Assessment Done?

- Steps 1 & 2; Screening Level
 - Problem. Definition, Exposure Assessment and Risk Calc.
- Step 3 Problem Formulation
 - Toxicity Eval., Conceptual Model, Assessment Endpoints
- Step 4 Study Design; Workplan
 - Endpoints, Toxicity Study, Population Study, Tissue Sampling
- Step 5 Field Sampling
- Step 6 Site Investigation and Data Analysis
- Step 7 Risk Characterization
- Step 8 Risk Management

do this frequently

part of that is a division pt

EPA Ecological Risk Assessment



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st be in step 5 -
 feel we are in 1 + 2 -
 farko do makes sense

How Is a NYSDEC Ecological Risk Assessment Done?

They look at it as a 5 step process

- Step 1 - Site Description
 - Identify Ecological Resources Present
- **Step 2** - Contaminant-Specific Impact Assessment
 - Pathway Analysis, Criteria-Specific Analysis, Toxic Effect Analysis Study Methods
- Step 3 - Ecological Effects of Remedial Alternatives
- Step 4 - Fish and Wildlife Requirements for Implementation of Remedial Actions
- Step 5 - Monitoring Program

State looks at this different

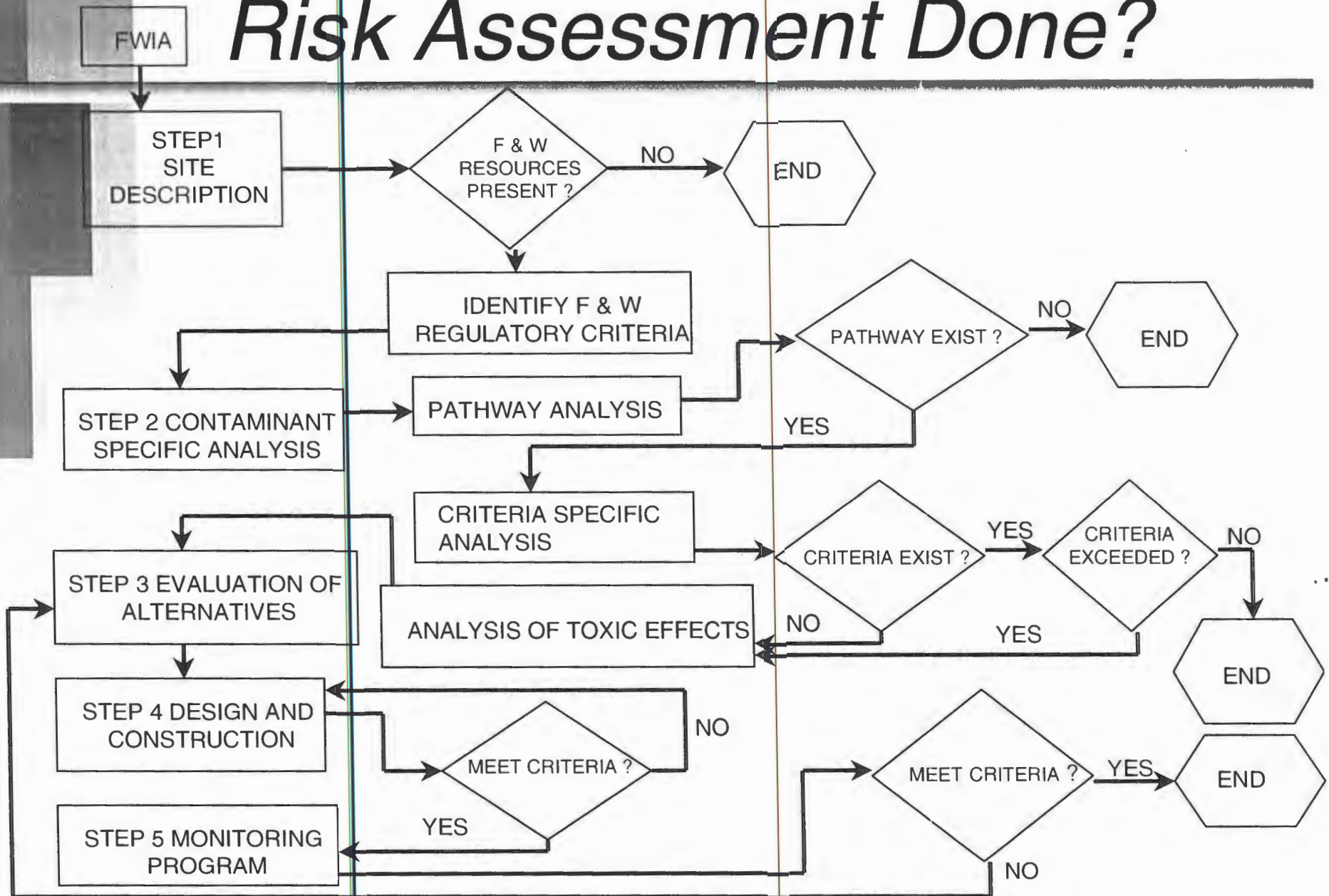
make their decisions on exceedances -

EPA looks at ecological quotients -

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Similar end diff

How Is a NYSDEC Ecological Risk Assessment Done?



decision trees get out of process when don't need to proceed.

Risk Assessment vs Risk Management

- Risk Assessment - 2.3 or 2.2,
 - Process of Quantifying Threat due to Exposure from Releases
 - Human Health and Ecological Conditions Assessed
once this is done then do risk mgmt.
- Risk Management (Decision Making)
 - Involves Selecting a Course of Action
 - Consider Social, Legal, Political, Economic Factors
 - Weights Benefits vs Liabilities
 - *some degree* → Professional Judgement May be Involved

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Challenging is to integrate those two

Basis for Meeting in Albany

March 9, 2000

- Lots to do; Not much time to do it
- Streamline Process for future ERAs

Goal → • Make ERAs less Complicated

- ^{Important to} Understand Requirements for ERAs
 - New EPA Guidance June 1997 & Oct. 1999
 - Endpoint Measurement
 - Population Effects vs Individual Evaluation
 - Valued Ecological Resources
- ^{Every receptor may not be valuable.} Integrate NYSDEC Requirements with EPA

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we have not to do not a lot of time to do it.

*Integrate
8 step EPA w 5 step state
process*

Meeting Summary

NYSDEC Requirements

- All Resources are Valued
state said
no specific guidance on assessing that,
• More Focus on Aquatic Receptors
- Protect Individuals and Populations
individuals, etc.
- Compare each Sample to Available Guidelines, Criteria Standards
 - Will Consider Alternative Criteria
 - Less Reliance on Numerical Risk
- Final Decision is Subjective - professional opinion,
more focused indiv samples, indiv criteria

Meeting Summary

EPA Requirements

- *All Resources are Valued*
- *Rely on Numerical Risk Calculation*
- *Realize 8-Step process is not appropriate for all sites at SEDA*
 - *No Longer Expect Toxicity Studies*
- *Willing to Accept "Screening" ERA*

big
slide
at
meeting

WBE of 1 0 3

Meeting Summary

Army Perspective

- **Agreed to do Screening ERAs**
comparison to standards-
- **Will Consider doing future Population and/or Toxicity Studies**
only in instance where there is a need to,
- **Likely that Transfers may be Delayed due to Resolution of Ecological Factors**

*Bottom
Line*

*Hard decisions,
we how much over "I" can we be - still not really clear
on- will have to weigh factors & come to decision*

MINUTES
RESTORATION ADVISORY BOARD
April 18, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair

Community RAB Members Present:

Patricia Jones, Bob McCann, Ken Riemer,
Dave Schneider, Jan Schneider, Fred Swain,
Henry Van Ness

Community RAB Members Not Present:

Richard Durst, Community Co-Chair (excused),
Antje Baeumner (excused),
Jeffrey Beall (excused),
Brian Dombrowski (excused), Russell Miller,
Frank Ives (excused),
Karen Tackett (excused), Ray A. Young (excused),
Frankie Young-Long (excused), David Wagner

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.

Julio Vasquez, Environmental Protection Agency
Steve Paszko, NYS Department of Environmental
Conservation

Dan Geraghty, NYS Department of Health
Randy Battaglia, U.S. Army Corps of Engineers,
New York District

Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffee, Ithaca Journal
Heather Clark, Cornell University, Ithaca, NY
Ronald Enslow, Waterloo, NY

Visitors:

None.

2. LTC Brian K. Frank, provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda and mentioned that the second presentation scheduled for the evening will be given at another time. He asked if there were any comments or changes to the minutes from the March meeting. There were no changes and the minutes were signed and will be entered into the record when Dr. Durst signs them.

4. Mr. Michael Duchesneau gave a presentation on the Proposed Remedial Action Plan (PRAP) for the Ash Landfill. A copy of the handout provided is forwarded with these minutes. Highlights from Mr. Duchesneau's presentation follow:

- Will be doing a separate public meeting on the PRAP when it is approved by EPA and looking for public comment.

- He wanted to provide the group an idea of where PRAP and ROD fit in the process. What he was presenting will be subject to a public hearing and responses to comments from the public.

- The CERCLA or Superfund Process is a risk-based process. The point we are currently at is the PRAP which is the decision making portion of the process. It is a result of identification, investigating, and evaluating alternatives.

- The Ash Landfill site is located on the western portion of the depot boundary.

- It is a unique site. It is one of the first sites identified during the identification process.

- It encompasses several SWMU's (non-combustible fill landfill, debris piles or incinerator building, Cooling pond). Several different activities went on here. It was combined into an operable unit and was investigated all at the same time.

- Groundwater plume - Groundwater had been impacted with chemicals, i.e., chlorinated solvents. As rain mixes with it, solvent dissolves and gets into groundwater. ~~It follows the slope of the groundwater~~ and you end up with a plume. In this area we excavated soil, heated it up, and removed solvents from soil. The concentrations dropped. Recent data shows it is going down more.

- The Ash Landfill is a former trash incinerator located within the conservation land use area. Areas of concern were chlorinated VOCs in groundwater and metal and polynuclear aromatic hydrocarbons in landfill.

- The VOC source area was eliminated in 1995. They implemented a reactive iron trench study and completed it in the spring of 2000.

- ~~Trash was brought to the site and buried in~~ incinerator. Stuff not buried was put in a landfill. We found PAHs, which is a product of incomplete combustion.

- They did a lot of soil sampling and groundwater monitoring and well sampling.

- Looked at the current and future population usage. With future landuse, on-site resident won't happen here.

Q: Do you feel the study was successful?

A: Yes.

- The non-carcinogenic hazard index is 1. Sum of all exposures is less than 1.0 in order to meet acceptance from EPA. Anything less than one is acceptable.

- Most cancer risk due to ingestion of contaminated groundwater.

~~- Problem is the reading for future on-site residential from volatiles. Total hazard index was 4.2 which is why they did the IRM.~~

- In summary, no endangered threatened species present.

- Concluded there were no observed impacts to the ecological community.

- All human health risk were within EPA target range, except for residential scenario.

- Potential risk to ecological receptors due to metals in shallow soil, no observed impacts.

Q: Right now, plan on no one living there?

~~**A:** Yes, have talked about it. Put in town zoning when transfer disclosure and recommendations.~~

Mr. Absolom mentioned that the best we can do is put in the deed a restriction not to use groundwater for consumption. Army maintains responsibility to make sure no one using it. Look to community to enforce. For the Army, reuse plan, zoning bid could establish zoning to restrict residents in that area. Could approve or say no. Best way to accomplish this is zoning. A planning board or planning inspector looks at that before you would build a house. With zoning in place, you have assurance if control over future use of that property.

- ROD has to be reviewed every five years. If restrict groundwater, have a groundwater monitoring program forever. We are at a point where we can only go so far.

Q: Can someone from Army contact the planning board? They are concerned.

A: We will look into that. You have to remember we are only talking about the ash landfill, not the whole conservation area.

- Our objectives are to reduce risk level for current and intended future receptors, to reduce groundwater concentrations to New York State GA Groundwater Standards, and prevent off-site migration of VOC plume.

- We are looking at 770 cubic yards of soil to be remediated.

- We did an interim removal action in June 1995 where 35,000 tons of soil were treated using low Temperature Thermal Desorption (LTTD).

- We are looking at a land use restriction for groundwater and soil.

- We are also looking at Source Contract Alternative 5 (SC-5) excavation and off-site disposal of debris/piles/vegetative soil cap for ash landfill and NCFE. They would put in a 12 in vegetative cover to prevent exposure from burrowing animals and humans. It makes sense because metals are not leaching. They want to prevent exposure and it is most cost effective.

- Also, MC-3a. In-situ reactive barrier wall, monitoring for + or - ten years to reach GA quality

- Total present worth costs for preferred alternative for ash landfill is \$1,795,000. See handout for breakdown.

- Feel the PRAP is a cost-effective solution.

- It eliminates risks to all receptors by preventing exposure with a cover.

- It will have a land use restriction.

- It will reduce groundwater concentration and prevent migration with reactive iron trenches.

- It will do monitoring of plume to assure compliance.

- We have found another benefit of reactive trench. Trench itself releases hydrogen. By trench destroying reactive chemicals (hydrogen), it creates anaerobic conditions, which stimulates anaerobic bacteria degrading chlorination.

- In summary, our plan at this point is to write up as a PRAP, submit it, get everyone to buy into it, and put it out for a 30 day public comment. We would then have a public meeting. If it is acceptable, move to a ROD which would be a binding contract with the Army, EPA and state.

Q: Will we have an update on a reactive iron wall?

A: We have the data and we will be submitting report within another week. The results would be similar to what we saw last time.

Q: Ecological receptors. They will be part of long term monitoring?

A: They will be part of the evaluation. Will monitor groundwater for quality of soil. Establish good ground cover. At this point, isolate material. Take samples around area excavate and make sure got it all. Monitoring downgradient to see if any leaching going on.

7. Mr. Absolom opened the floor for discussion.

Q: Regarding the letter to the editor in the newspaper I saw where the board was passing an item about opening the road? Is that true???

A: That is a true statement. There was a resolution that the IDA consider that at an appropriate time.

Q: Won't the road hurt the white deer population?

A: It is located where the new sewage treatment plant is.

Q: Some of us have received and some of us haven't received an ATSDR Final report?

A: Everyone on the RAB should be receiving in the mail from ATSDR a final report. The survey enclosed with it was basically your comments on how they did with the report.

Q: Regarding the deer study, did Cornell have tissue samples?

A: Only sampling is blood sample, no tissue samples.

Q: On the radio, they mentioned SEDA as a possible site for the new Seneca County jail. What is the story on that?

A: Pat Jones, SCIDA, responded that right now they are looking at several sites.

- Mr. Absolom mentioned the for the next meeting for members to start thinking about a future site to hold future RAB meetings...would take affect around ~~September timeframe as the NCO Club will be laid away~~ (closed), i.e., schools, libraries, etc. We will talk about it at the next meeting.

- Mr. Absolom also mentioned that the June meeting hopefully will be the public meeting on the Ash Landfill. Because of summer, we typically don't meet in July or August. We will discuss all this next month.

- Next month, Heather Clark, a graduate student at Cornell University will be giving a presentation regarding her thesis on evaluating RABs.

8. The meeting was adjourned at approximately 8:30 p.m. The next RAB meeting with both government and community members will be on April 18, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

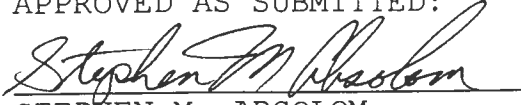


LAURA J. SPOSATO

Recording Secretary

Enclosure

APPROVED AS SUBMITTED:



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



RICHARD A. DURST
Community Co-Chair

Presentation to the RAB
March 21, 2000

Ecological Risk Assessment

Michael Duchesneau, P. E.

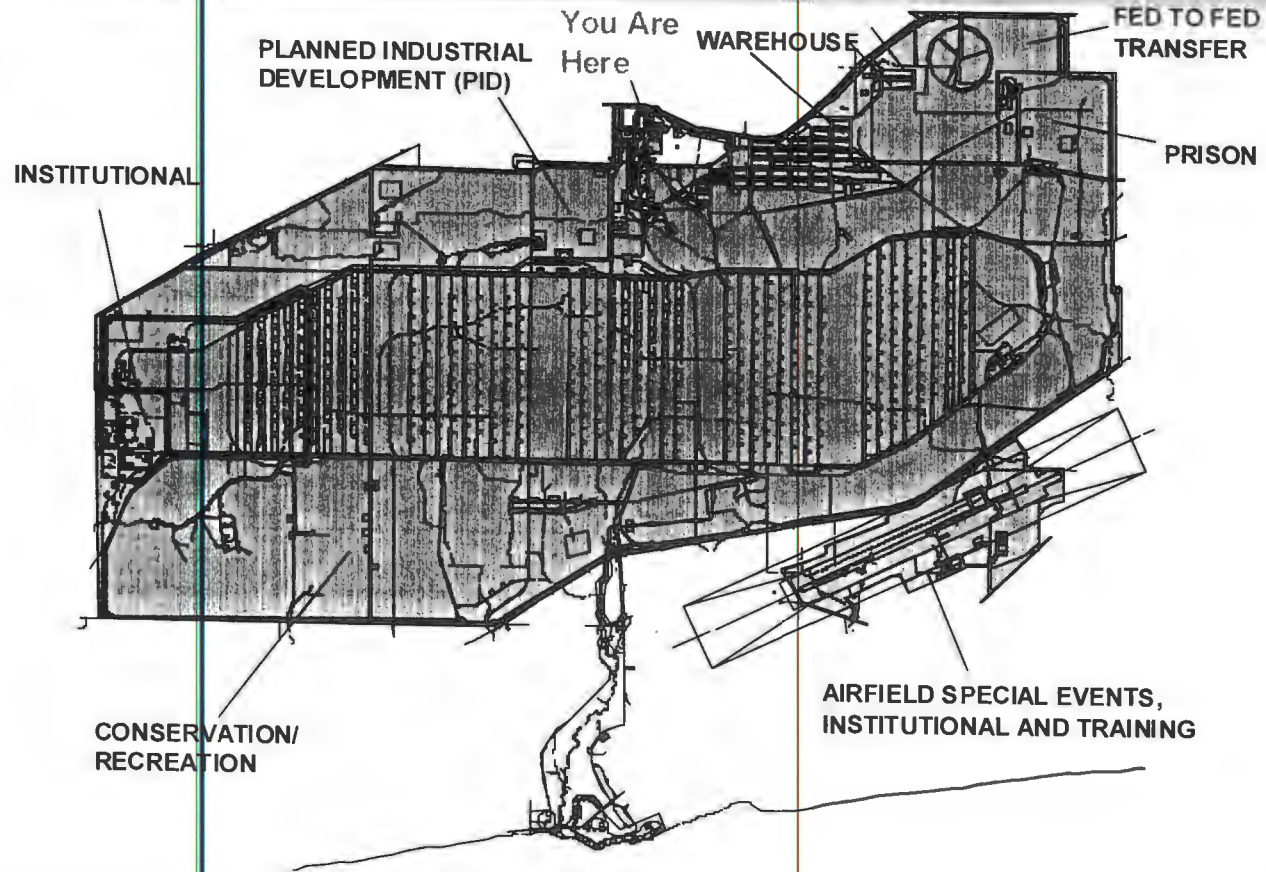
Topics for Tonight's Presentation

- *Overview of Ecological Risk Assessment (ERA)*
- *Summary of March 9 Albany Meeting*
- *Presentation has not been Reviewed or Agreed to by EPA or NYSDEC*

Ecological Resources at Seneca

- Current Ecological Resource
 - Wetlands, “Duck Pond” (Migratory Waterfowl)
 - Whitetail Deer Herd
 - Wild Turkeys, Foxes, Owls, Hawks, Osprey
 - Reeder, Kendig, Kendaia and Indian Creeks
 - Future Land Use Considerations
 - Approx. 6000 acres for Recreational/Conservation Use
-

Location Map of Land Use



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What is Ecological Risk Assessment ?

A process that evaluates the adverse ecological effects that may occur or are occurring to ecological receptors as a result of exposure to hazardous substances

Significance of Ecological Risk

Assessment (EPA)

Ecological Risk Assessment (ERA) Complexities

- More Difficult to do than Human Health
 - Numerous Receptors to Identify and Assess
 - Procedures Vary; Community/Population vs Individual Evaluation
 - Guidance is New and Evolving
 - Toxicity Data Lacking for Most Ecological Receptors
 - More Uncertain than Human Health
-

Overview of Ecological Risk Assessment (ERA)

- Why Do We Do Risk Assessment ?
- What is Ecological Risk Assessment ?
- How Do We Do Ecological Risk Assessment ?
- Risk Assessment versus Risk Management ?

Why Do Ecological Risk Assessment ?

- Required by “Superfund”
 - “assess the extent to which the release poses a threat to human health or the environment”
 - Needed to Quantify the Threat (Risk)
 - Used to Establish Acceptable Exposure or Clean-up Levels
 - Used to Evaluate Effectiveness of Proposed Remedial Actions
-

How Do We Do Risk Assessment ?

- Identification of Chemicals of Concern (COC)
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization

Identification of Chemicals of Concern (COC)

- Sample and Analyze Soil, Groundwater, Surface Water/Sediment
- Eliminate Non-Detects
- Compare Data to Background
- “Screen” Data Against Guidelines, Standards and Criteria

What are the Chemicals of Concern (COC) ?

- **Petroleum and Residuals**
 - Polynuclear Aromatic Hydrocarbons (PAH)s
 - **Solvents**
 - **Metals**
 - **Explosives**
 - **Pesticides and Herbicides**
-

Exposure Assessment

- How much COCs gets into the Receptor?
 - Receptors?
 - Exposure Pathways?
 - Ingestion
 - Inhalation
 - Dermal Contact
 - Time for Exposure?
 - Concentration of COCs at Exposure Point
 - Reasonable Maximum Exposure; 95th Upper Confidence Limit of the Arithmetic Mean

Example Representative Ecological Receptors

Receptor

Red-Tailed Hawk
Eastern Cottontail
Shrew
Deer Mouse
Creek Chub

Represents

Raptors
Large Mammals
Small Mammals
Small Mammals
Fish

Ecological Exposure Scenarios

	Deer Mouse	Creek Chub
Ingestion of soil	X	--
Skin contact with soil	O	--
Ingestion of food	X	--
Inhalation of dust and vapors	O	--
Contact with surface water	--	X

X = evaluated quantitatively

O = evaluated qualitatively

-- = not a pathway

Toxicity Assessment

- What is a “Safe” Level of COCs ?
 - Humans
 - Reference Dose for Non-Carcinogens
 - Slope Factors for Carcinogens
 - Ecological Receptor
 - No Observed Adverse Effects Level (NOAEL)
 - Lowest Observed Adverse Effects Level (LOAEL)
 - Ecological Receptor Endpoints?
-

Risk Characterization

$$RISK = \frac{Exposure\ Dose}{\text{“Safe” Allowable Dose}}$$

*Target for Ecological Quotient (EQ)
is less than 1*

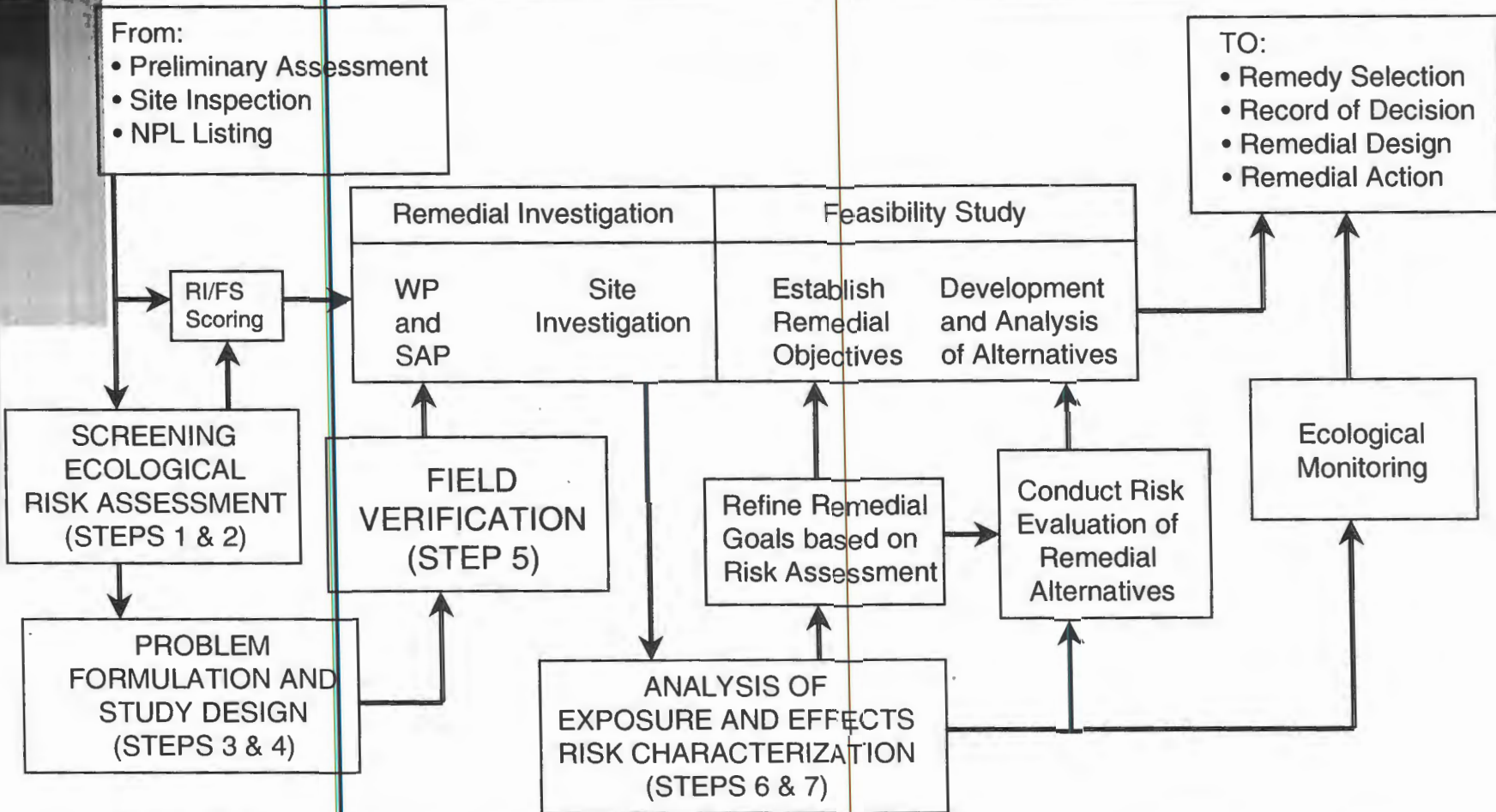
Uncertainties with Calculation

- Do COC accurately represent Exposure Concentrations?
 - Analytical Limitations ?
 - Toxicity Data Availability?
 - Accurate Bioaccumulation Factors ?
 - Assumptions of Exposure?
 - Receptor and Endpoint Selection ?
-

How Is an EPA Ecological Risk Assessment Done?

- Steps 1 & 2; Screening Level
 - Problem. Definition, Exposure Assessment and Risk Calc.
- Step 3 Problem Formulation
 - Toxicity Eval., Conceptual Model, Assessment Endpoints
- Step 4 Study Design; Workplan
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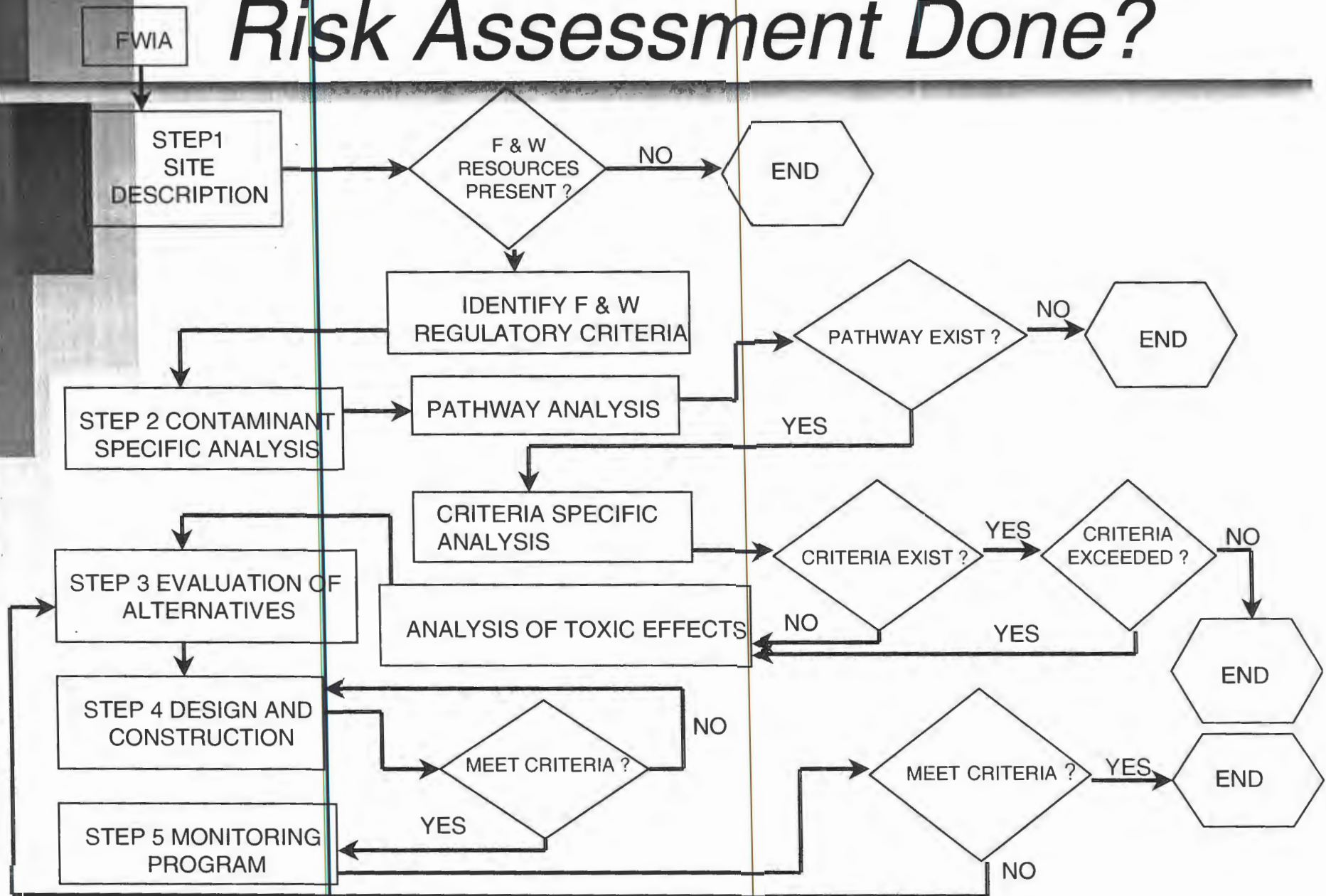
EPA Ecological Risk Assessment



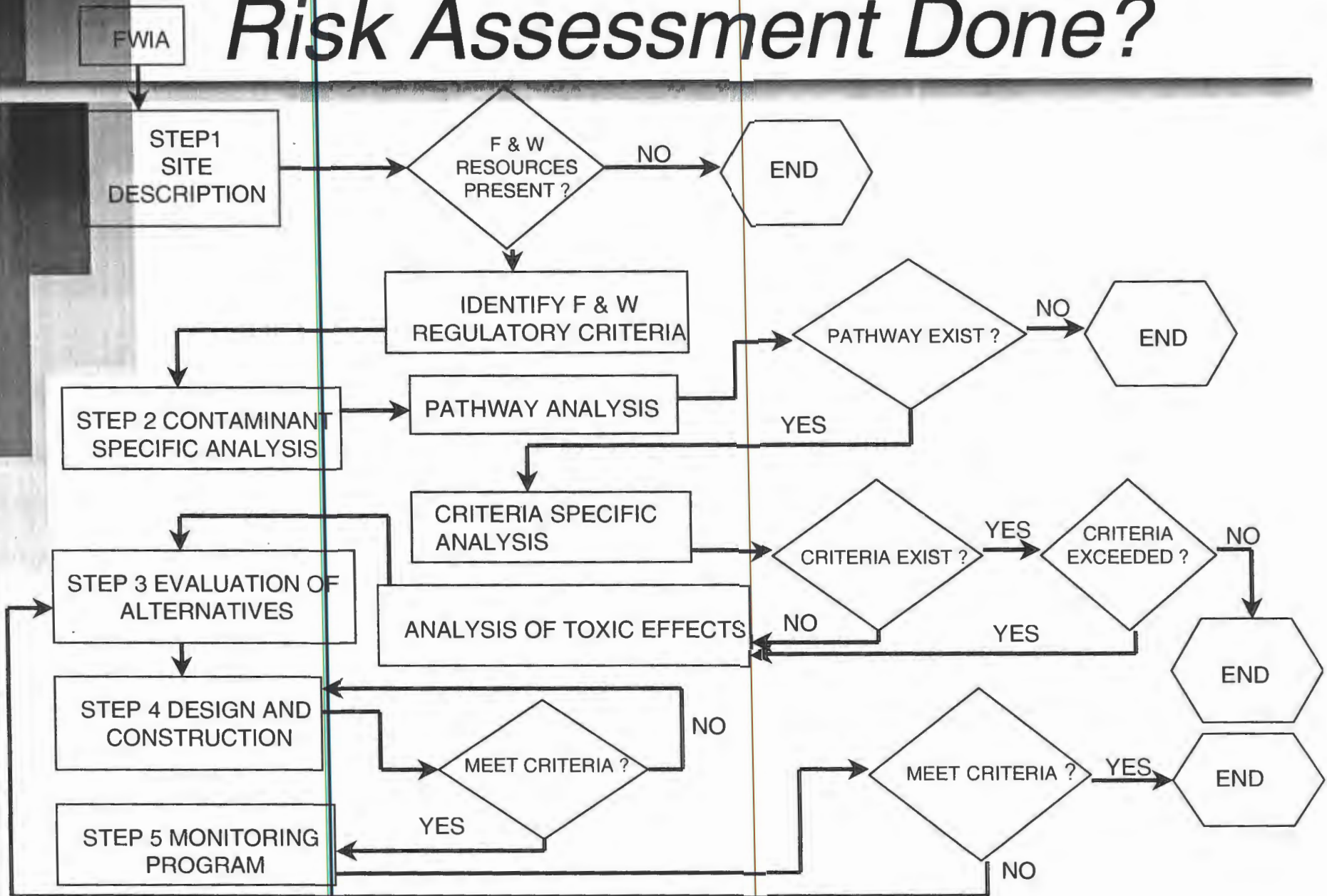
How Is a NYSDEC Ecological Risk Assessment Done?

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 - Step 4 - Fish and Wildlife Requirements for Implementation of Remedial Actions
 - Step 5 - Monitoring Program
-

How Is a NYSDEC Ecological Risk Assessment Done?



How Is a NYSDEC Ecological Risk Assessment Done?



Risk Assessment vs Risk Management

- Risk Assessment
 - Process of Quantifying Threat due to Exposure from Releases
 - Human Health and Ecological Conditions Assessed
 - Risk Management (Decision Making)
 - Involves Selecting a Course of Action
 - Consider Social, Legal, Political, Economic Factors
 - Weights Benefits vs Liabilities
 - Professional Judgement May be Involved
-

Basis for Meeting in Albany

March 9, 2000

- Lots to do; Not much time to do it
 - Streamline Process for future ERAs
 - Make ERAs less Complicated
 - Understand Requirements for ERAs
 - New EPA Guidance June 1997 & Oct. 1999
 - Endpoint Measurement
 - Population Effects vs Individual Evaluation
 - Valued Ecological Resources
 - Integrate NYSDEC Requirements with EPA
-

Meeting Summary

NYSDEC Requirements

- *All Resources are Valued*
 - *More Focus on Aquatic Receptors*
 - *Protect Individuals and Populations*
 - *Compare each Sample to Available Guidelines, Criteria Standards*
 - *Will Consider Alternative Criteria*
 - *Less Reliance on Numerical Risk*
 - *Final Decision is Subjective*
-

Meeting Summary EPA Requirements

- *All Resources are Valued*
 - *Rely on Numerical Risk Calculation*
 - *Realize 8-Step process is not appropriate for all sites at SEDA*
 - *No Longer Expect Toxicity Studies*
 - *Willing to Accept “Screening” ERA*
-

Meeting Summary Army Perspective

- *Agreed to do Screening ERAs*
- *Will Consider doing future
Population and/or Toxicity Studies*
- *Likely that Transfers may be
Delayed due to Resolution of
Ecological Factors*

MINUTES
RESTORATION ADVISORY BOARD
May 16, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vasquez, Environmental Protection Agency
Steve Paszko, NYS Department of Environmental
Conservation
Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Richard Durst, Community Co-Chair,
Antje Baeumner, Brian Dombrowski,
Patricia Jones, Ken Riemer,
Dave Schneider, Fred Swain, Karen Tackett,
Frankie Young-Long

Community RAB Members Not Present:

Jeffrey Beall (excused), Bob McCann (excused),
Russell Miller, Jan Schneider (excused),
Frank Ives (excused), Ray A. Young (excused),
Henry Van Ness, David Wagner

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Inc.
Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Heather Clark, Cornell University, Ithaca, NY

Visitors:

Tim Noga, NYS Conservation Council

2. LTC Brian K. Frank provided the opening remarks and then asked for introductions of all attending.

3. Mr. Absolom outlined the agenda for the evening and asked if there were any comments or changes to the minutes from the April meeting. There were no changes and the minutes were signed and will be entered into the record.

4. Ms. Heather Clark, a graduate student of Cornell University gave a presentation on Evaluation of Restoration Advisory Boards (RABs), her master's thesis.

Some highlights from her presentation:

- The purpose of the thesis was not to tell what is right or wrong.

- The reason why she chose this project was because she had always been interested in RABs. She worked for a small environmental consulting firm that helped with cleanup at Moffett Federal Airfield in California which was also a superfund site. Their problems were polluted groundwater from a large plume from private site to San Francisco Bay and the Airfield. She worked with Technical Review Committee (TRC) which then became the RAB. She spent a lot of time talking with RAB members and subsequently became a RAB member. She was interested in whether community members who participated without a technical background could engage in questions.

- While attending Cornell University, she saw SEDA was doing this. Had to look at a lot of literature and journals regarding public participation and how to evaluate them. She thought it would be a worthwhile project.

- She came up with a framework for evaluation in hopes it will serve as a resource to the group. A copy of the handout provided is forwarded with these minutes.

- In Jan 98 Janet Fallo made a presentation regarding a survey for RAB members to fill out. Some good things came out of that such as separate meetings with community group members on their own.

- It is up to the group to see if that was worthwhile. She is donating a copy of her thesis to the Information Repository and also one to the local library.

- Throughout the evaluation comments were made by RAB members saying they were not sure exactly where they should be giving comments, input, etc. at the meetings.

- Democracy measures allow lay people to interact with experts, professionals. RAB did meet this criteria--almost because it is an advisory body and not a decision making body.

- Communication was mostly met. Community RAB participation get what they need to give information. Most met because of the information that is given out, i.e., repository/handouts.

- ~~Make sure participants have an understanding on~~ what an issue is about. There have been those on the RAB where she feels technical questions could be enhanced by small groups.

- Guidelines by EPA and DOD focus on maintaining a diversity of viewpoints.

1. Why people participate

2. What concerns were. What perception of risk at site

- The level of trust and faith that cleanup would occur. There was a range of all of those factors.

Q: Why did past members drop out?

A: Usually for personal or health issues. At least one dropped out because it wasn't what he had expected. That information was secondhand.

- Another most important is how to assess outcome. Depends on what process is trying to do. This is a different situation where the outcome is to clean the depot but RAB not doing directly.

- Two goals --Improve communication with stakeholder and solicit input.

- Cost effectiveness hard to measure as the benefits are not tangible.

- In a lot of cases don't know what you are preventing.

- Having a RAB is enhancing communications. A lot of people commented that communications could improve.

- Participation by community members not as active as she would like to see it. Heather feels it would be useful to break into small groups and that could help with the decision making process.

- People couldn't put their finger on how their input was helping the RAB. Think about how that could be done better.

- Conflict resolution not applicable. There have been many letters and dialoging.

- Some RABS do have conflict and bring in outside facilitators, i.e., Fort Ord, CA, disbanded RAB. McCullen AFB just disbanded their RAB.

- This group is very well off. No major problems.

- Participants, individuals, education, people satisfied with this. Acronyms are still confusing but most presenters spell them out for people.

Q: Of the people you interviewed, how many are still involved?

A: Five are no longer here. Seven are here.

- Trust was an interesting one. Wide range participants attitudes. Also governing regulatory agency. Participating to be watchdogs on regulatory agencies, not Army. Important to remember that people aren't always going to agree.

- The neither confirm nor deny huge issue. Community members said doesn't matter because they have own opinions anyway. Some people did express frustration on this.

- Satisfaction is important. That is where everyone has final say. Everyone agreed it is an important process--that is land being turned over for reuse.

- She would love to hear everyone's input. It is more important to see questions were asked. Evaluation needs to be done again with this new group of people. Heather encouraged that happen sometime in the future.

Q: Citizen participation - are any of the members a carryover from the original TRC?

A: Yes, six community members.

- Heather also mentioned that interpersonal communications is enhanced with our RAB meeting breaks, etc. Those interactions help bridge those relationships.

5. Mr. Absolom then introduced the next presenter, Mr. Keith Hoddinott who gave a presentation on Health Risk Assessment for Consumption of Deer Meat conducted at both Joliet Army Ammunition Plant and Aberdeen Proving Ground. Copies of the handouts provided are forwarded with these minutes. Some highlights from Mr. Hoddinott's presentation:

- Found that past models put together to assess household intake of deer meat were not good.

- 1991 went out to installations and collected deer tissue and measure directly.

- Focus of the study at Joliet Ammunition Plant was on deer muscles and liver.

- They are a manufacturing organization. However, have the same chemicals of concern that we have which are explosives, metals, PCBs and pesticides.

- They have had spills as part of the operation of a large industrial facility.

- How they did it was when individuals applied for deer permit, they had to agree to bring carcass for sampling and fill out a questionnaire.

- Twelve additional deer were sampled from an offpost reference site, state park was used as a reference site.

- Found no bioaccumulation of explosives, PCBs or pesticides. Did find metals in muscle, liver, kidney and bone.

- Used EPA methodology.

- Found the highest carcinogenic risk resulted from deer meat collected from the reference site-off post deer. The major contributor was arsenic.

- FDA posted levels of metals in meat. None of them exceeded the FDA level.

- They did another study at the Aberdeen Proving Ground.

- Aberdeen is used for research, development and testing of chemical warfare agents and conventional munitions. They have the same chemicals of concern as well as solvents.

Q: What is 32,400 hectare

A: 2.2 acres per hectare

- Sampling included muscles, liver, and bone (teeth). Additional deer were taken from off post reference site.
- Results were there were no bioaccumulation of explosives, PCB's or pesticide. Did find metals in muscle and liver.
- Since they did find lead, used the FDA shellfish model.

- Results were a contributor of arsenic. The noncarcinogenic risk from consuming deer meat slightly exceeded the acceptable threshold for several sites including the background site.

- In summary, all lead levels in deer from both APG and offpost siteware were within he acceptable limits calculated by the FDA shellfish model.

Q: When took levels for study was it from raw flesh or prepared meat?

A: We took samples from raw flesh.

Q: Is it a matter of pathway? Deer grazing? The deer are not drinking out of groundwater wells.

A: ~~There were some concerns where there are OB~~ operations. Many animals seek salt. They were afraid of deer going to OB areas and licking dirt.

5. Mr. Absolom then opened the meeting for open discussion.

- Discussed alternate location for future RAB meetings. Sites mentioned were Romulus Town Hall, the Seneca County Office Building, Romulus School, South Seneca Sportman's Club and the Romulus Fire Department. The group voted to have the meeting at one specific location and to stay in the Romulus Area. Arrangements have been made since for the Romulus Town Hall as a future site for RAB meetings beginning in September.

6. Mr. Absolom provided the following updates:

- In June timeframe we hope to have a public meeting on the Ash Landfill PRAP. That could be done in place of a RAB or have a RAB and the public meeting on separate night. Group voted to just have the public meeting and not an additional RAB meeting. If for some reason we can't have the public meeting, we will have a RAB meeting on June 20th at the NCO Club. We will mail out letters letting everyone know.

- Last month and just recently FOST for the prison site was available for public comment. That has closed. There were no comments from public but did receive some from EPA and the State. We are targeting beginning of July for date transferring for prison as well as the utilities.

- At the request of the IDA, a Finding of Suitability to Lease (FOSL) document for 18 buildings within the administrative and warehousing area that the county wants to be in the position to lease in early June has been completed. That public notice will come out probably Thursday or Friday. There will be a 15-day public comment period and will close on 1 June. Steve asked RAB members if they would like to have a copy of the document. It was decided to send out a copy to each member of the RAB and has since been done.

Q: Is there any new information on who is going to take over the conservation area.

A: The Army is not in a position to lease that area at this time.

Q: There has been a lot of discussion that there might not be any deer to worry about.

A: Until we are in a position to lease or transfer the Army is prepared and plans to maintain the fenceline intact.

- To offset the reduced patrols the, Sheriff's Department is now patrolling on post at various times of the day and evening. They have their own keys to the gates. Hopefully this will have offset illegal activities.

- The Army will manage the deer herd as in the past.

Q: Is there something going on in June, i.e., closing ceremony.

A: The closing ceremony is July 20th at 10:00 in front of the Building 101. Invitations are being sent to all the RAB members.

- Topics for future RABs

Relocation of information repository.
At one time was located at the Romulus Town Hall. May have to do that again.

7. The meeting was adjourned at approximately 8:30 p.m. The next RAB meeting with both government and community members, if there is no public meeting, will be on June 20, 2000, at the Community Club at 7:00 p.m.

Respectfully submitted,

Enclosure

LAURA J. SPOSATO
Recording Secretary

APPROVED AS SUBMITTED:

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

RICHARD A. DURST
Community Co-Chair

Presentation to the RAB
April 18, 2000

Proposed Remedial Action Plan
(PRAP)
Ash Landfill

Michael Duchesneau, P. E.



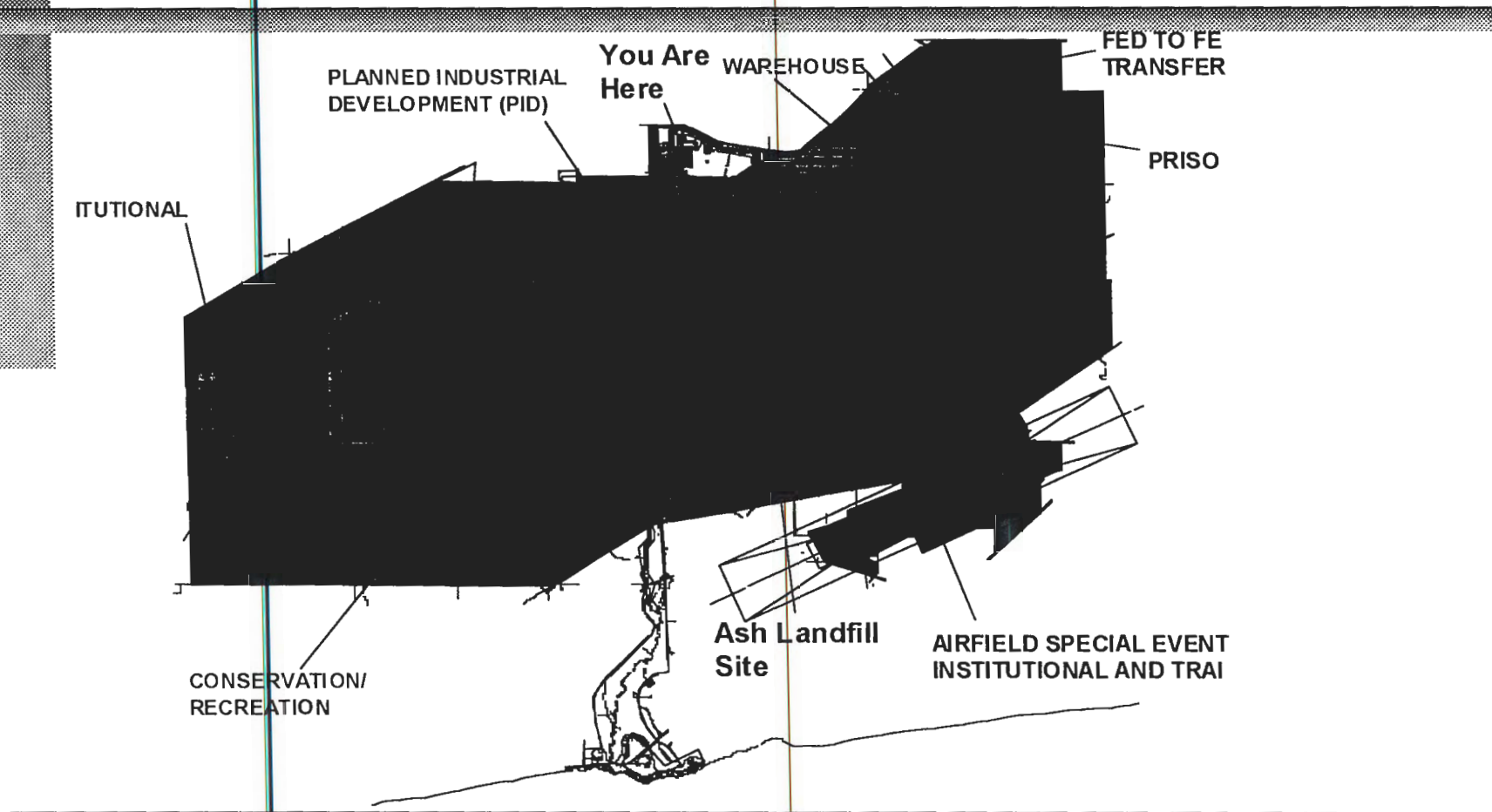
Topics for Tonight's Presentation

- *Summary of the RI/FS Process*
- *Recommendations for the PRAP*
- *Presentation has not been Reviewed or Agreed to by EPA or NYSDEC*

THE CERCLA PROCESS

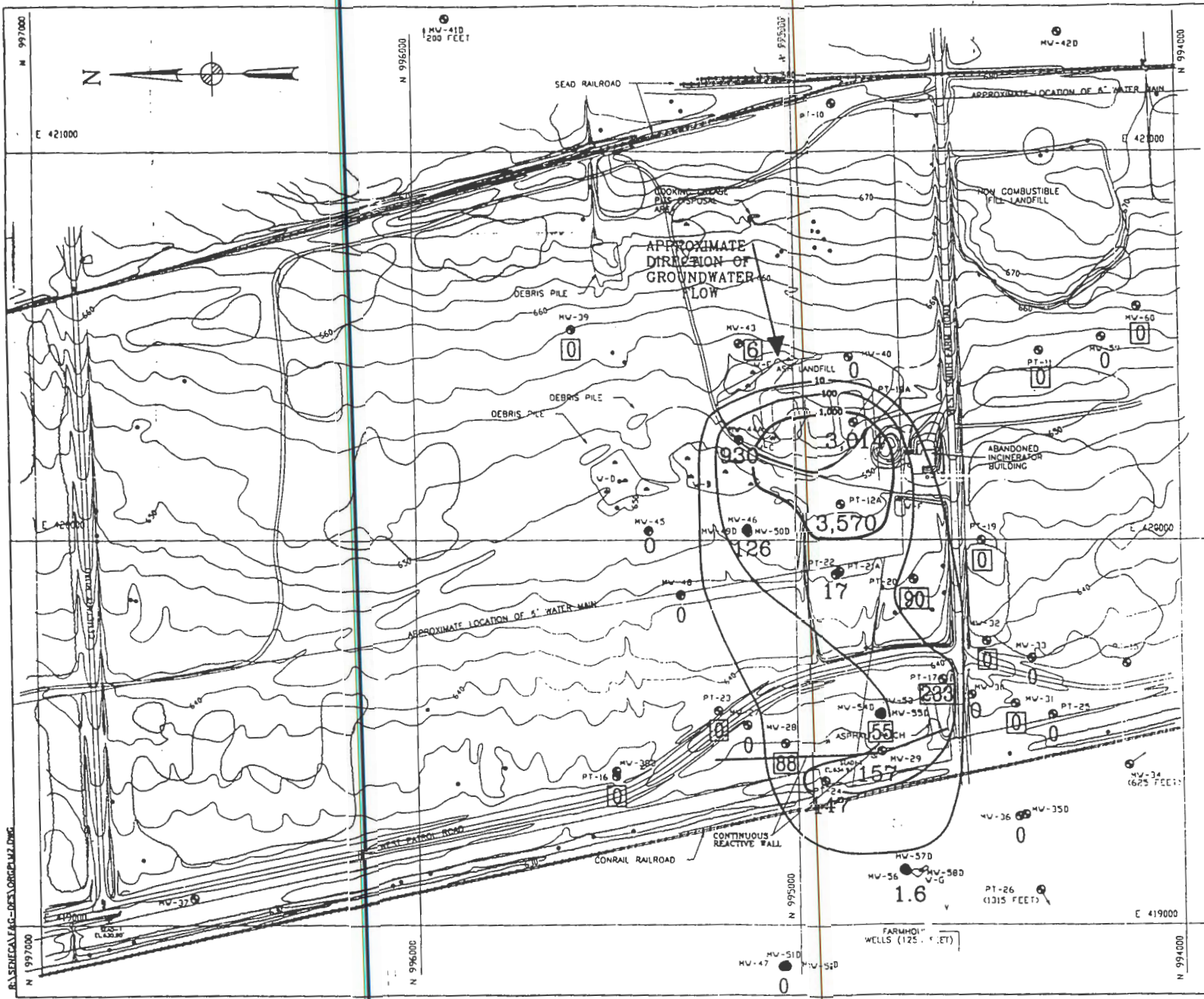
PHASE	ACTIVITIES
IDENTIFICATION	SWMU Classification
INVESTIGATION	Expanded Site Inspection (ESI) Remedial Investigation (RI)
EVALUATION of SITE and REMEDIAL ALTERNATIVES	Risk Assessment (Part of RI) and Feasibility Study (FS)
DECISION MAKING	Proposed Remedial Action Plan (PRAP) Record of Decision (ROD)
DESIGN	Construction Plans and Specifications
REMEDIAL ACTION	Construction / Operation
MONITORING	Long Term Monitoring

Location Map of Ash Landfill Site



PARSONS ENGINEERING SCIENCE





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 (µg/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 FOLLOWING QUARTER.



SCALE: 1" = 250'

REV	DATE	DESCRIPTION	BY	CHECKED
1	10/1/96	ISSUED FOR EPA REVIEW		
2	10/1/96	ISSUED FOR REVIEW		
3	10/1/96	ISSUED FOR REVIEW		
4	10/1/96	ISSUED FOR REVIEW		
5	10/1/96	ISSUED FOR REVIEW		
6	10/1/96	ISSUED FOR REVIEW		
7	10/1/96	ISSUED FOR REVIEW		
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100	10/1/96	ISSUED FOR REVIEW		

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVE ASH LANDFILL GROUNDWATER TREATABILITY STUDY USING ZERO VALENT IRON CONTINUOUS REACTIVE

RPT ENVIRONMENTAL ENGINEERING 78809-01004

FIGURE 1
ASH LANDFILL SITE MAP WITH VOLATILE ORGANICS PLUME: POST-REMOVAL ACTION COND
SCALE AS NOTED NOVEMBER 1996

Summary of Site Conditions Ash Landfill

- *Former Trash Incinerator*
 - *Within Conservation Land Use Area*
 - *Constituents of Concern*
 - *Chlorinated VOCs in Groundwater*
 - *Metals and PAHs in Landfill/ Debris Piles*
 - *VOC Source Area Eliminated in 1995 with an Interim Removal Action (IRM)*
 - *Reactive Iron Trench Demonstration Study, Complete Spring 2000*
-

Remedial Investigation Field Tasks

- *Soil Sampling:*
 - *50 Soil Borings (Phase 1: 32, Phase 2: 18)*
 - *15 Test Pits (Phase 1: 5, Phase 2: 10)*
- *49 Groundwater Monitoring Wells*
 - *15 Groundwater Monitoring wells were previously installed*
- *2 Rounds of Groundwater Sampling*
- *13 Surface Water and Sediment Samples*
- *Ecological Survey*
 - *Aquatic Sampling in Kendaia Creek*
 - *Terrestrial Study*

Potentially Exposed Populations Considered

- *Current and Future On-Site Hunter*
- *Future Construction Worker*
- *Future On-Site Resident*
- *Current Off-Site Resident*
- *Ecological Receptors (Deer Mouse and Mallard)*

EPA Human Health Target Risk Values

- *Non-Carcinogenic - Hazard Index*
 - *Sum of All Exposures Less than 1.0*
- *Carcinogenic - Cancer Risk Range*
 - *1 additional cancer in 10,000 (1×10^{-4})*
 - *1 additional cancer in 1,000,000 (1×10^{-6})*

SUMMARY OF BASELINE HUMAN HEALTH RISK ASSESSMENT

Ash Landfill

EXPOSURE SCENARIO	TOTAL HAZARD INDEX	TOTAL CANCER RISK
Current/Future On-site Hunter	0.008	9.6×10^{-6}
Future On-site Construction Worker	0.003	3.4×10^{-7}
Future On-site Residential	4.2	1.6×10^{-3}
Current Off-site Residential	0.15	1.8×10^{-5}
EPA target value	1.0	10^{-4} to 10^{-6}

Summary of Ecological Risk Assessment

- *No Endangered, Threatened Species Present*
- *No Observed Impacts to Ecological Community*
- *Elevated Lead in Shallow Soil a Potential Long-term Concern*

Summary of Risk Assessment Ash Landfill

- *All Human Health Risk within EPA Target Range, Except for Residential Scenario*
- *Risk due to Ingestion of Groundwater*
- *Acceptable Risk for Future Receptors*
- *Potential Risk to Ecological Receptors due to Metals in Shallow Soil, No Observed Impacts*

Remedial Action Objectives

Ash Landfill

- *Reduce Risk Levels for Current and Intended Future Receptors.*
- *Reduce Groundwater Concentrations to New York State GA Groundwater Quality Standards.*
- *Prevent Off-site Migration of VOC Plume.*

Volume of Soil To Be Remediated


- *Soil from Debris Piles: 770 cubic yards*
- *Interim Removal Action (Completed June, 1995): 35,000 tons of soil treated using Low Temperature Thermal Desorption (LTTD).*

Ash Landfill Migration Control Remedial Alternatives

- **MC-1:** No Action
- **MC-2:** Natural Attenuation
- **MC-3:** In-Situ Air Sparging
- **MC-3a:** In-Situ Zero-Valence Iron Wall
- **MC-5:** Recovery Trenches/Air Stripping
- **MC-6:** Recovery Trenches/UV Oxidation
- **MC-7:** Trenches/ Two-stage Biological Treatment (Screened from Further Consideration)

Cost Estimates for Source Control Remedial Alternatives

Ash Landfill



sh Landfill Migration Control Remedial Alternatives

- MC-1:** No Action*
- MC-2:** Natural Attenuation*
- MC-3:** In-Situ Air Sparging*
- MC-3a:** In-Situ Zero-Valence Iron Wall*
- MC-5:** Recovery Trenches/Air Stripping*
- MC-6:** Recovery Trenches/UV Oxidation*
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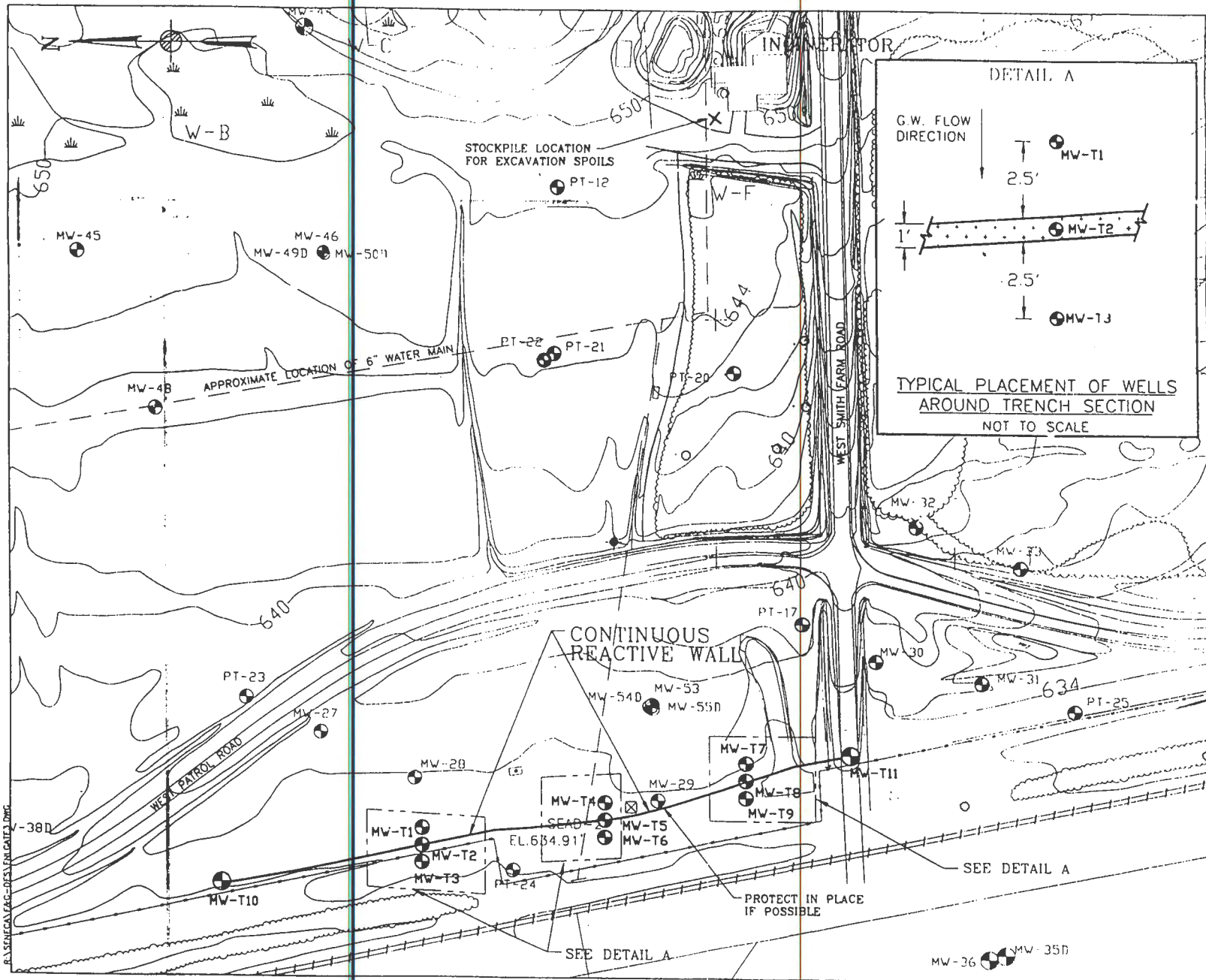
Proposed Remedial Action Plan (PRAP)

- *Land Use Restriction*
 - *SC-5: Excavation and Off-site Disposal of Debris Piles/Vegetative Soil Cap for Ash Landfill and NCFL.*
 - *MC-3a: In-Situ Reactive Barrier Walls, Three (3) Wall, Monitoring for +/-10 years to reach GA Quality*
 - *Long-Term Groundwater Monitoring*
-

Total Present Worth Costs for Preferred Alternative Ash Landfill

<i>SC-5 Total PW Cost:</i>	\$ 772,000
<i>+ MC-3a Total PW Cost:</i>	<u>\$1,023,000</u>
<i>= Total Present Worth Cost:</i>	\$1,795,000

- SC-5 Removal of Debris Piles to 1 Foot, Disposal Off-site, Vegetative Cover Ash Landfill & NCFL
 - MC-3a Installation of 2 Additional Reactive Walls, Groundwater Monitoring for 10 years
 - Land Use Restriction
-



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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
- TREATMENT WALL
- 6" WATER MAIN

SCALE: 1" = 100'

NO.	DATE	DESCRIPTION
1	1/23/95	ISSUES FOR EPA REVIEW
2	1/14/95	ISSUES FOR EPA REVIEW
3	1/14/95	ISSUES FOR M-310
4	1/14/95	ISSUES FOR 910
5	1/14/95	ISSUES FOR REVIEW

NO.	DATE	DESCRIPTION	BY	CHECKED BY	DATE
1	1/23/95	ISSUES FOR EPA REVIEW	J.P. CHAPMAN	J.P. CHAPMAN	1/23/95

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVE ASH LANDFILL GROUNDWATER TREATABILITY STUDY USING ZERO VALENT IRON CONTINUOUS REACTIVE TREATABILITY STUDY WORK PLAN

NO. ENVIRONMENTAL ENGINEERING Proj. No. TSEAD09-01004

FIGURE 3
PROPOSED MONITORING WELL LOCATIONS FOR CONTINUOUS REACTIVE WALL

SCALE: 1" = 100' DATE: FEBRUARY 1999

Benefits of Proposed Remedial Action Plan (PRAP)

- *Cost Effective*
- *Eliminate Risk to All Receptors by Preventing Exposure with Veg. Cover*
- *Land Use Restriction (No Residential)*
- *Reduce Groundwater Conc. and Prevent Migration with Reactive Iron Trenches*
- *Monitoring of VOC Plume to Assure Compliance*

Cost Estimates for Migration Control Remedial Alternatives

Ash Landfill

Alternative	Total Present Worth Cost	Capital Cost	O&M Cost
MC-1 No Action	\$0	\$0	\$0
MC-2 Natural Attenuation	\$936,000	\$144,000	\$792,000
MC-3 In-Situ Air Sparging	\$2,458,000	\$668,000	\$1,790,000
MC-3a In-Situ Reactive Iron	\$1,023,000	\$422,000	\$601,000
MC-5 Air Stripping Treatment	\$1,800,000	\$543,000	\$1,200,000
MC-6 UV-Ozone Treatment	\$1,860,000	\$556,000	\$1,300,000

Cost Estimates for Source Control Remedial Alternatives

Ash Landfill

Alternative	Total Present Worth Cost	Capital Cost	O&M Cost
SC-1 No-Action	\$0	\$0	\$0
SC-3 Consolidation to NCFL	\$1,860,000	\$1,370,000	\$490,000
SC-4 Soil Washing	\$32,000,000	\$31,500,000	\$490,000
SC-5 Off-Site Disposal / Vegatative Cover	\$772,000	\$490,000	\$282,000

MINUTES
RESTORATION ADVISORY BOARD
June 20, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

LTC Brian K. Frank, SEDA Commander
Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vasquez, Environmental Protection Agency
Steve Paszko, NYS Department of Environmental
Conservation
Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Frank Ives, Patricia Jones, Bob McCann,
Jan Schneider, Dave Schneider, Karen Tackett,
Henry Van Ness

Community RAB Members Not Present:

Richard Durst, Community Co-Chair (excused)
Antje Baeumner (excused), Jeffrey Beall (excused),
Ken Riemer, Brian Dombrowski, Russell Miller,
Fred Swain, Frankie Young-Long, David Wagner

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering Science,
Cliff Lippitt, Parsons Engineering Science
Inc.
Michelle Brock, U.S. Army Corps of Engineers,
Huntsville Div
Randall Battaglia, U.S. Army Corps of Engineers,
New York District
Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Laura Sposato, Recording Secretary

Community Support (from sign-in sheet):

Neil Chaffie, Ovid, NY
Sandy Cooley, Romulus, NY
Carl Marthaller, Romulus, NY
Susan Porter, FingerLakes Times

Visitors:

Thomas Sydelko, Argonne National Laboratory
David Miller, Argonne National Laboratory
Mike McCallan, Weston

2. LTC Brian K. Frank provided the opening remarks and then asked for introductions of all attending.
3. Mr. Absolom outlined the agenda for the evening and asked if there were any comments or changes to the minutes from the May meeting. There were no changes and the minutes were signed by Mr. Absolom and when signed by Dr. Durst will be entered into the record.
4. Mr. Michael Duchesneau, Project Manager from Parsons, gave a presentation on the Former Special Weapons Storage Area, SEAD 12. Detailed information can be found in the handout provided with these minutes.

Some highlights from Mr. Duchesneau's presentation:

- SEAD 12 is the area adjacent to Kids Peace and encompasses 660 acres and is surrounded by the high security fence.
- It is separate from the overall operations of the rest of the depot and is a special weapons capable storage facility.
- A removal action took place in 1986 of the dry waste disposal tank and waste disposal areas a and b.
- Classified as a SWMU in 1994 and was broken up into two areas, SEAD-12A (Waste disposal pit a/b), SEAD 12B (waste disposal pit C).
- An expanded site investigation (ESI) was performed in 1995 to further understand what was going on in those areas and whether or not there was any residual material in those areas.

- Results prompted them to look further at those sites.

- In Dec 1997 the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) was finalized which was developed by EPA, NRC, DOE, and DOD. It replaced all previous guidance and was adopted for closeout at Seneca. It classifies area/buildings in three areas, Class 1 (the highest), Class 2, and Class 3.

- Perform characterization survey - go out to those areas and see if you find anything.

- Look at data and then reclassify if necessary, Establish guidelines based on risk analysis, and compare to background and DCGL

- If find exceedance, then go back, reclassify and get more information or do a removal action, perform final survey, and closeout site.

- He also highlighted the guidelines used for characterization of soil data. He talked about the criteria for groundwater characterization, surface water characterization, and sediment characterization.

- Some of the constituents of potential concern were chemical and radionuclides.

- Class one survey units were areas or buildings where radioactive materials or unsealed sources were or could have been present, i.e., Bldg 803, 804, 805, 815, 816, 819 and disposal pit A.

- Class two survey units were buildings or rooms where military items with radioactive isotopes could have been stored., i.e., bldg 806, 810, 812, and SEAD 63 and all disposal pits except disposal pit a.

- Class three survey units have no history, use or expectation that radioactive isotopes are present. This encompasses all remaining buildings, rooms, and grounds.

- He also summarized remedial investigation Investigation outside the buildings began in summer of 1998 and was completed the fall of 2000. Investigation inside buildings began summer of 1999 and is ongoing.

- Investigation Report for outside buildings was completed in draft in May 2000.

- He summarized the remedial investigation field activities, geophysical investigations, radiological scanning, soil gas surveys, soil investigation, groundwater investigation, and surface water/sediment investigation.

- Also conducted human and ecological risk assessments for both chemicals and radionuclides of concern.

- Building investigation is ongoing.

5. Mr. Absolom then opened the meeting for open discussion.

- Mr. Ray Young, RAB member resigned. Many thanks for taking part in the RAB.

- KidsPeace Campus at the North End of the Depot is holding open house for the public on Thursday. Starts at 11 a.m. until dark. It will conclude with fireworks.

- Last meeting we talked about a FOSL for the Planned Industrial Development (PID). We are still working on that with the intention of leasing property so that reuse can come in and occupy buildings and maintain them so that they stay in good state for future use. Any time Army leases property not necessarily saying all that area is cleaned up. It is suitable to lease. We are not walking away from our responsibility. If we can get a resuer, it is a benefit to everyone.

Q: Is it final?

A: It is still in draft phase.

We have extended the comment period to 29 June so we will still take comments on it.

- Next month at this time we time go through the closure ceremony to encase the colors. We will go into caretaker status on 1 October.

- Mr. Absolom mentioned that in the past we have not met in July nor August. He asked if the members would like to see that happen this year. It was agreed upon. We will reconvene on 19 September at the Romulus Town Hall in Willard at 7:00 p.m. Directions will be forwarded.

Q: What if something comes up between now and September as far as Mikes Duchesneau testing, status.

A: The only things that could come up is a public meeting for the Ash Landfill. As soon as it gets done we will schedule a public meeting.

Q: Has EODT resumed.

A: Right now working thru a claim related to this. We could resume with them or with another contractor. Weston is treating soils right now.

Q: Is there going to be a new commander?

A: ~~Our Commander will be COL Sowa who resides at~~ Rock Island. He will be the commander overseeing Seneca. Steve Absolom will be the Comander's Representative at the Depot.

6. LTC Frank gave his closing remarks. He will be mailing Commanders' Coins to the RAB members to thank them for the good job they have done. He expressed his thanks to the RAB for all their help and for coming to the meetings. He commended them for their service at the RAB and for serving the community.

7. The meeting was adjourned at approximately 9:15 p.m. The next RAB meeting with both government and community members, will be on September 19, at 7:00 p.m. at the Romulus Town Hall in Willard.

Respectfully submitted,



LAURA J. SPOSATO

Recording Secretary

Enclosure

APPROVED AS SUBMITTED:



STEPHEN M. ABSOLOM

U.S. Army Co-Chair



RICHARD A. DURST

Community Co-Chair

Presentation to the RAB
June 20, 2000

Former Special Weapons Storage Area
(SEAD-12)

Summary of Remedial Investigation
Activities and Results

Michael Duchesneau, P. E.

Topics for Tonight's Presentation

- *Approach to the Investigation*
 - *Summary of the Remedial Investigation*
 - *Interpretation of Results*

 - *Presentation has not been Reviewed or Agreed to by EPA or NYSDEC*
-

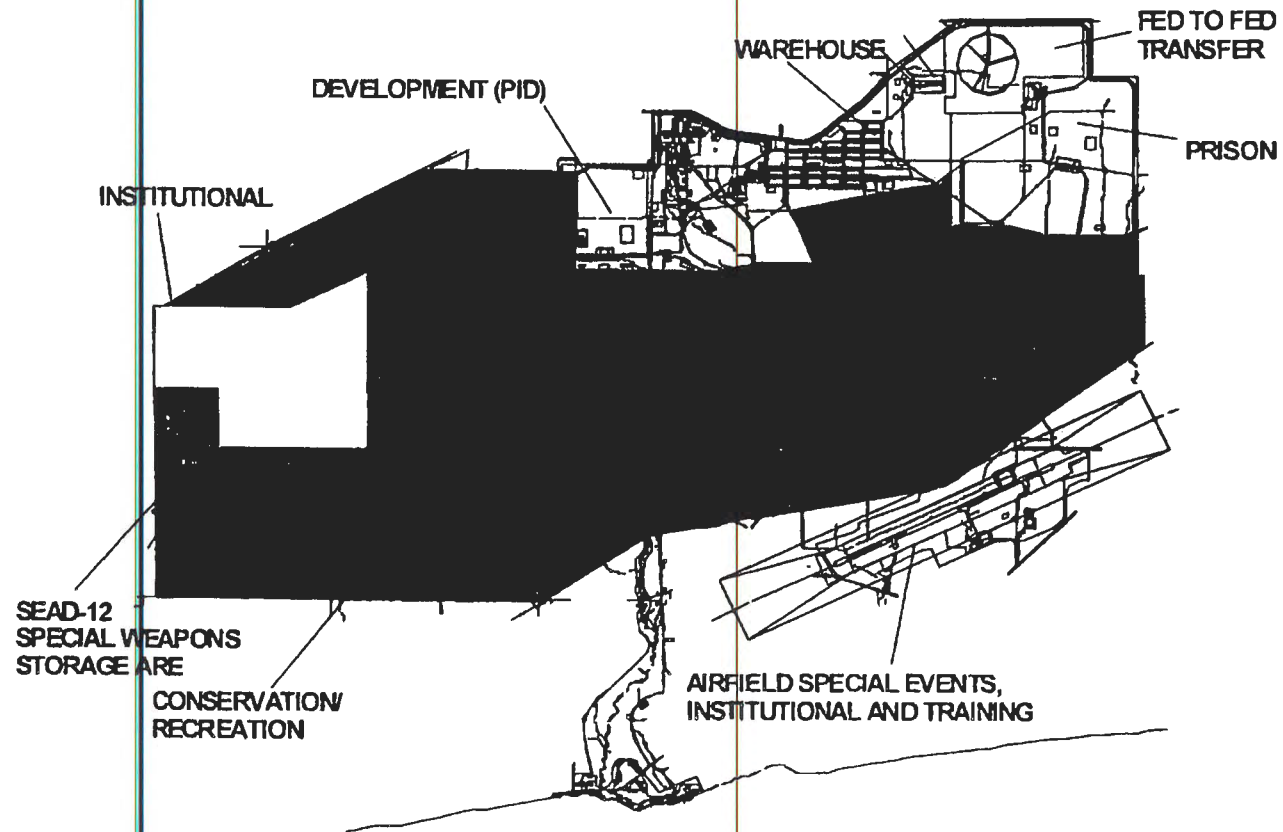
Presentation to the RAB
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(SEAD-12)

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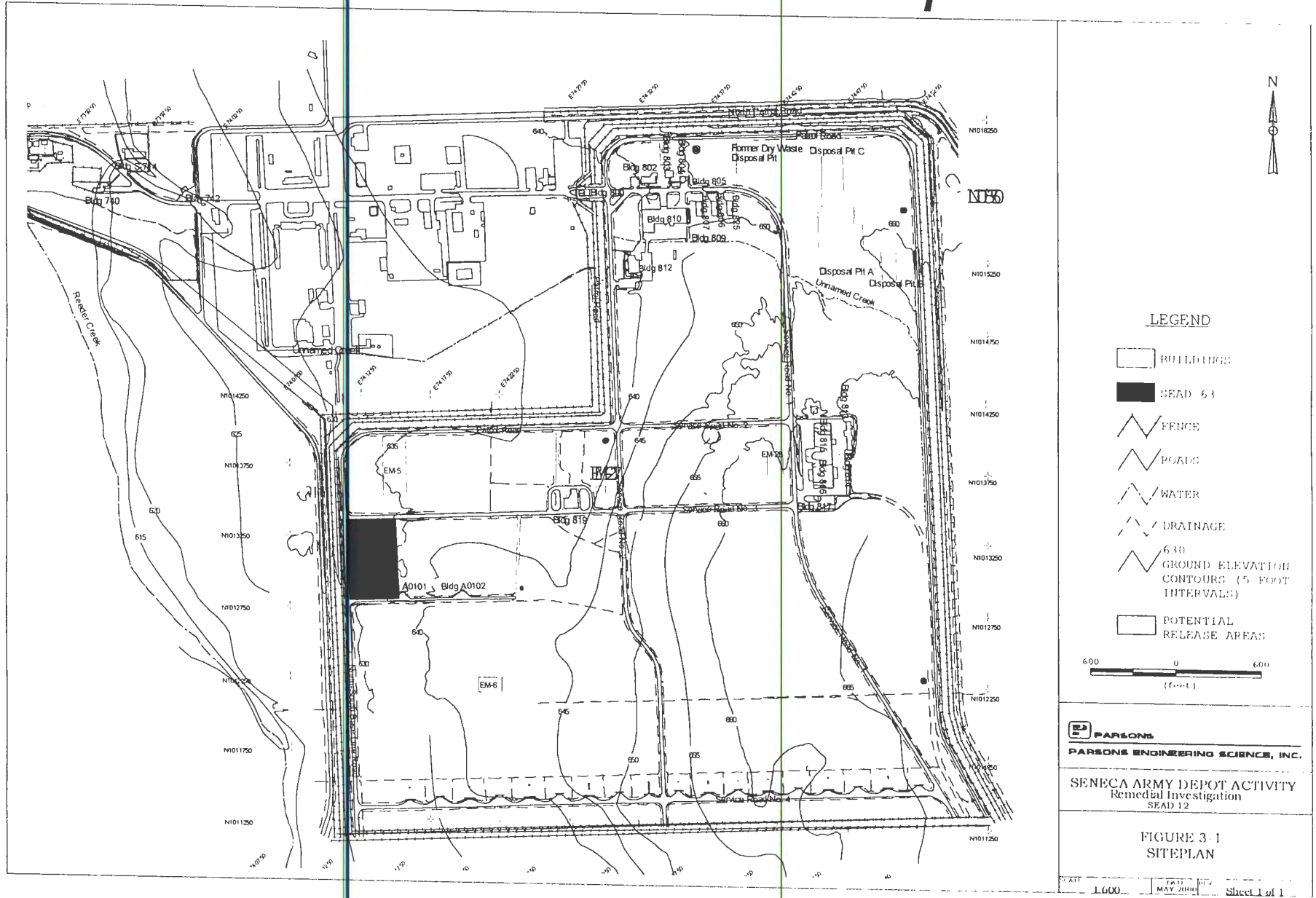
Michael Duchesneau, P. E.

Location Map of SEAD-12 Site



PARSONS ENGINEERING SCIENCE

SEAD-12 Site Map



Background of Special Weapons Storage Area at Seneca

- *Constructed in 1957*
 - *Last of 13 Identical Areas Across US*
 - *AEC Operated until 1963*
 - *Army Operated since 1963*
 - *High Security “Base within a Base”*
 - *Weapons Storage Capable*
 - *Army Cannot “Confirm or Deny”*
-

Previous Site Investigations, Actions and Reports

- *Alpha Team Survey;*
 - *Removal Action; 1986*
 - *Dry Waste Disposal Tank*
 - *Waste Disposal Areas A and B*
 - *Classified as a SWMU; 1994*
 - *SEAD-12A (Waste Disposal Pit A/B)*
 - *SEAD-12B (Waste Disposal Pit C)*
 - *Expanded Site Investigation (ESI); 1995*
-

Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)

- *Guidance Finalized in Dec. 1997*
- *Jointly Developed by EPA, NRC, DOE, DOD*
- *Replaced all Previous Guidance*
- *Adopted for Close-Out at Seneca*

Summary of MARSSIM Approach

- *Classify Areas/Buildings*
 - *Class 1*
 - *Class 2*
 - *Class 3*
 - *Unaffected*
 - *Establish Background*
 - *Perform Characterization Survey*
-

Summary of MARSSIM Approach (Continued)

- *Reclassify, if Necessary*
 - *Establish Derived Concentration Guideline Levels (DCGLs)*
 - *Statistical Comparison to Background and DCGLs*
 - *Perform Removal*
 - *Perform Final Survey*
-

Approach to Remedial Investigation

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Conceptual Site Model and Approach

- *Follow MARSSIM*
 - *Operational Details Classified*
 - *Assumed Potential at All Buildings*
 - *Precious Materials*
 - *No Known Releases*
 - *Combined Characterization with Final Survey to Expedite Closeout*
-

Guidelines Used for Characterization of Soil Data

- *Radionuclides*
 - *NYSDEC TAGM-4006 - 10 mrem/yr (EPA - 15 mrem/yr; NRC - 25 mrem/yr not used)*
 - *Derived Concentration Guideline Levels (DCGLs) developed using RESRAD model assuming allowable dose equivalent of 10 mrem/yr above background*

Guidelines for Soil Characterization (con't)

- *Radionuclides (con't)*
 - *DCGLs are Exposure Pathway and Receptor Dependent.*
 - *DCGLs Developed for a Conservative Residential Scenario as Well as a Worker Scenario.*
 - *Site Soil Data Compared to Background and DCGLs per MARSSIM*

Guidelines for Soil Characterization (con't)

- *Radionuclides (con't)*
 - *MARSSIM supports statistical comparison of site data to background and a “DCGL-adjusted background” data set (or level allowable above background)*
 - *Data from Each Potential Area of Concern Compared to Background Soil Data Set and DCGL-adjusted background dataset*

Pathways Considered in Establishing DCGLs

- *Residential*

- *Direct Radiation*
- *Inhalation of Dust*
- *Incidental Ingestion of Soil*
- *Ingestion of Groundwater*
- *Ingestion of Produce Grown in Soil*
- *Ingestion of Milk and Meat from Cows Grazing on Plants*
- *Radon*

- *Worker*

- *Direct Radiation*
- *Inhalation of Dust*

Guidelines Used for Characterization of Soil Data

- *Chemical*
 - *NYSDEC Technical and Administrative Guidance Memorandum (TAGM-4046)*
 - *Background*

Criteria for Groundwater Characterization

- *NYS - Class GA Standards*
- *Federal Maximum Contaminant Levels (MCLs)*
- *Background*
- *Statistical Comparison to Background*

Criteria for Surface Water Characterization

- *NYSDEC - Class C Standards*
- *Federal MCLs for Radionuclides*
- *Background*

Criteria for Sediment Characterization

- *Chemical - NYSDEC Technical Guidance for Screening Contaminated Sediment*
- *Radionuclides - Background*

Constituents of Potential Concern

- *Chemical*
 - *VOCs*
 - *SVOCs*
 - *Metals*
 - *Pesticides/PCBs*
- *Radionuclides*
 - *Radium-223, -226*
 - *Uranium-234, -235, -238*
 - *Plutonium-239/240*
 - *Thorium-230, -232*
 - *Others: Cs-137, Co-57, Co-60, Bi-214, Pb-210, Pb-211, Pb-214, Pm-147*
 - *Tritium-H³*

Class One Survey Units

- *Areas or Buildings where Radioactive Materials or Unsealed Sources were or could have been present*
- *Potential for Residual Radiation at Levels above Criteria*
- *Class One Survey Units:*
 - *Buildings 803, 804, 805, 815, 816, 819*
 - *Disposal Pit A*

Class Two Survey Units

- *Buildings or Rooms where Military Items with Radioactive Isotopes could have been Stored*
- *Areas where Disposal Pits are Suspected*
- *Small Potential to contain Residual Radiation*
- *Class Two Survey Units:*
 - *Buildings 806 (the calibration room only) , 810 (the loading and unloading room only), 812 (the weapons storage room and garage bay only), and SEAD-63*
 - *All Disposal Pits, except Disposal Pit A, identified by geophysical methods*

Class Three Survey Units

- *No History, Use or Expectation that Radioactive Isotopes are Present*
- *Little potential for Residual Radiation, Lack Sufficient Data to Recommend Unrestricted Use*
- *Class Three Survey Units:*
 - *All remaining buildings and rooms*
 - *All remaining grounds*

Summary of Remedial Investigation

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Remedial Investigation Milestones

- *Investigation (Outside Buildings)*
 - *Began Summer 1998*
 - *Completed Fall 2000*
- *Investigation (Inside Buildings)*
 - *Began Summer 1999; On-Going*
- *Investigation Report (Outside Buildings)*
 - *Draft May 2000*

Summary of RI Field Activities

Geophysics

- *Geophysical Investigations*
 - *Seismic Refraction (8 transects)*
 - *Electromagnetic Surveys (EM-31)*
 - *Approximately 160 miles of survey conducted*
 - *Ground Penetrating Radar*
 - *Covered 43 EM anomalies (approximately 10 miles of GPR transects)*

Summary of RI Field Activities

Radiological Scanning

- *Radiation Grounds Scanning Investigation*
 - *100% of Class 1 areas*
 - *50% of Class 2 areas*
 - *10% of Class 3 areas.*
 - *Conducted Borehole Geophysics in Area of Disposal Pits A and B*

Summary of RI Field Activities

Soil Gas Survey

- *Soil Gas Survey*
 - *52 soil gas samples collected in area of Buildings 813, 814 and 817*
 - *Evaluate Potential Paint/Solvent Releases*

Summary of RI Field Activities

Soil Investigation

- *Soils Investigation*
 - *52 Soil Borings (150 subsurface samples)*
 - *26 Test Pits (83 soil samples)*
 - *414 Surface Soil Samples*
 - *Analyzed all samples for radionuclides (systematic and biased locations)*
 - *Analyzed approximately 250 samples for chemical constituents (biased locations)*

Summary of RI Field Activities

Groundwater Investigation

- *Groundwater Investigation*
 - *Installed 38 monitoring wells (2 rounds of sampling)*
 - *Analyzed for Full Suite of Chemical Analytes and Radioisotopes*
- *Aquifer Testing Investigation*
 - *Conducted 28 rising head slug tests*

Summary of RI Field Activities

Surface Water / Sediment Investigation

- *Surface Water and Sediment Investigation*
 - *73 surface water samples collected during RI and ESI*
 - *74 sediment samples collected during RI and ESI*
 - *All samples analyzed for full suite of chemical analytes and radioisotopes*

Additional RI Activities

- *Conducted Human and Ecological Risk Assessments for Both Chemicals and Radionuclides of Concern*
- *Building Investigation is Ongoing*
 - *Radiological Scanning*
 - *Class 1 Buildings Complete*
 - *Class 2 Buildings 25% Complete*
 - *Class 3 Buildings 0% Complete*
 - *Material Sampling (To Follow Scanning)*

Interpretation of Results

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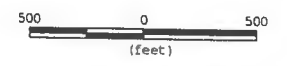
Interpretation of Results Geophysical Investigation

- *EM Survey Identified 43 anomalies*
- *28 Investigated Further with GPR*
- *24 Anomalies Investigated Further with Test Pits*
- *13 Anomalies Determined to be Potentially Impacted Areas, Classified, and Investigated Further*



LEGEND

EM-24
INTERPRETED
EM-31 IN-PHASE
ANOMALIES

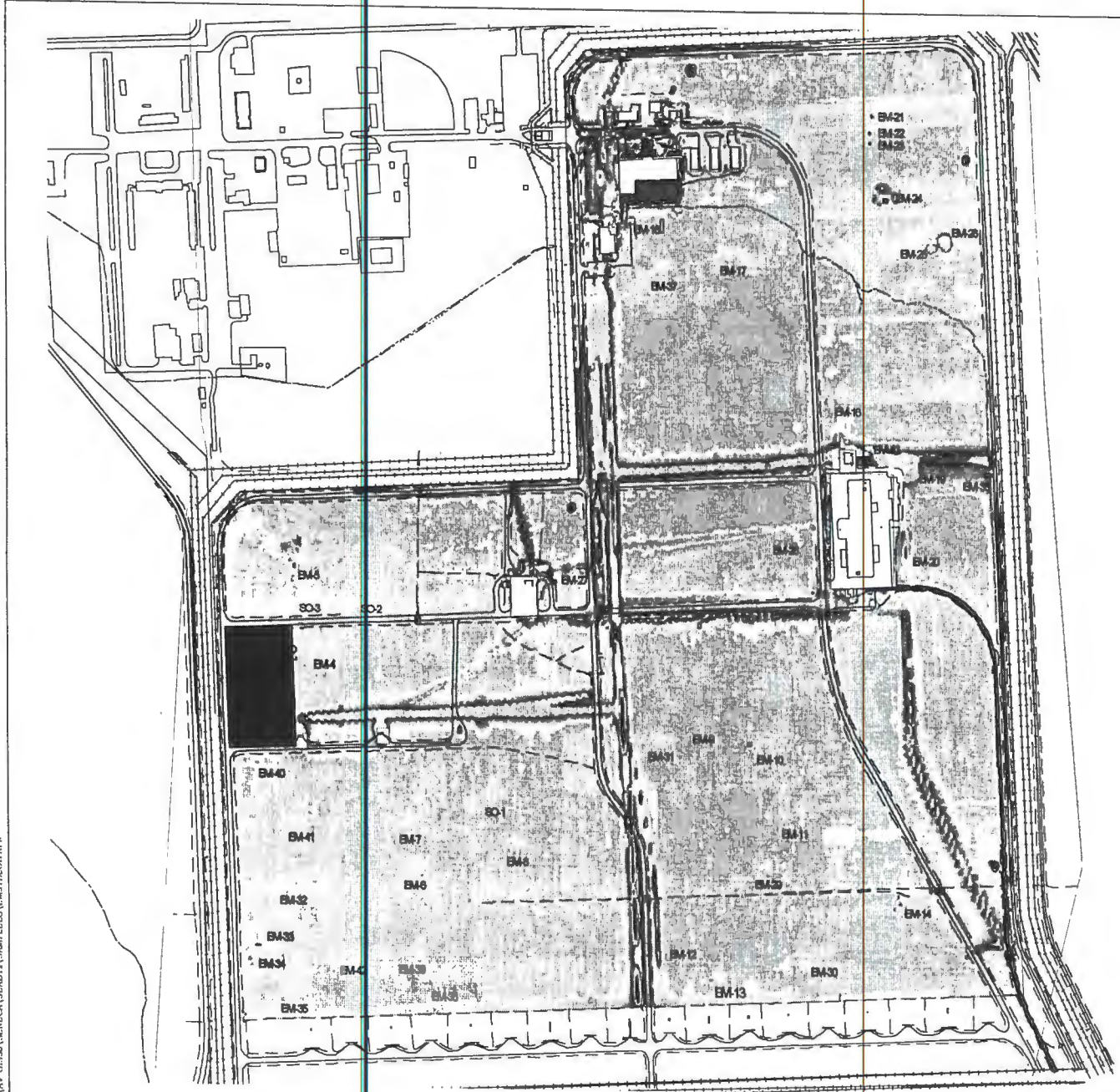


 **PARSONS**
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD 12

FIGURE 2-3
LOCATION OF
ELECTROMAGNETIC
SURVEY ANOMALIES

SCALE: 1:500 DATE: MAY 2000 REV: Sheet 1 of 1



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Soil Gas Survey Results

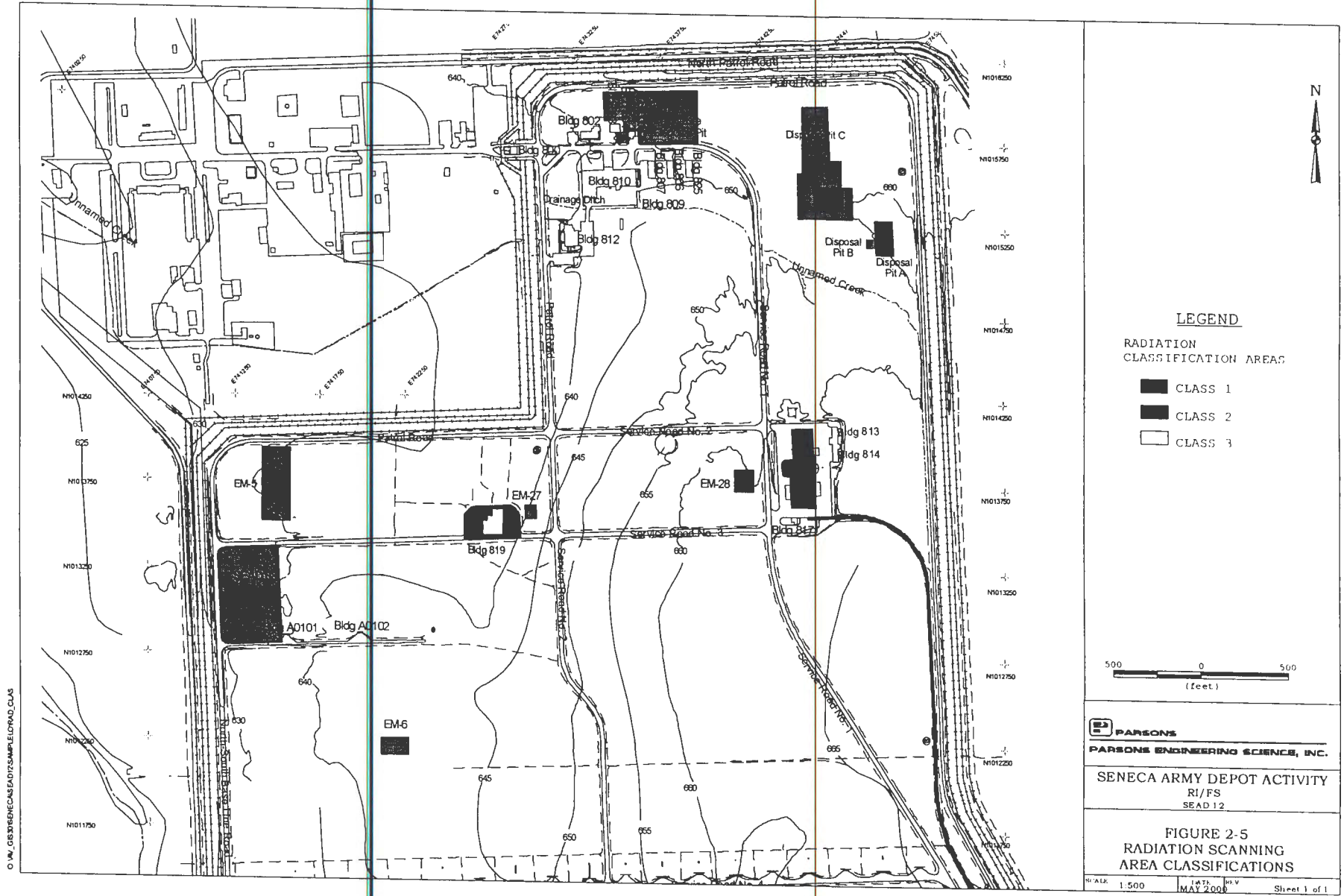
- *Toluene detected (37 of 54 samples) - Maximum detection 320 ppb*
- *Trichloroethene (TCE) - Maximum detection 2407 ppb.*
- *Three Monitoring Wells (MW12-37, -38, and -39 Installed*

Interpretation of Results

Radiological Scanning - Outdoor Survey

- *Only One Small Area Adjacent to Bldg 819 Exceeded the Flag Value*
 - *1 foot Diameter Area, East of Building 819*
 - *Area Sampling Performed in December 1997 by Army Radiological Assistance Team.*
 - *Post Sample Scanning and Soil Samples Confirmed Sampling Effort Removed Source*
- *No Other Areas Exceeded the Flag Value*

Radiation Scanning and Area Classification



D:\M_GIS\BRENDCAS\B0175\SAMPLE\RAD_C1AS

Chemicals Found in Surface Soils by Area of Concern

- *Building 819/EM-27 - PAHs*
- *Building 815/816/ EM-28 - Cadmium*
- *EM-5 - Lead*
- *Class III (near Building 813) - PAHs*

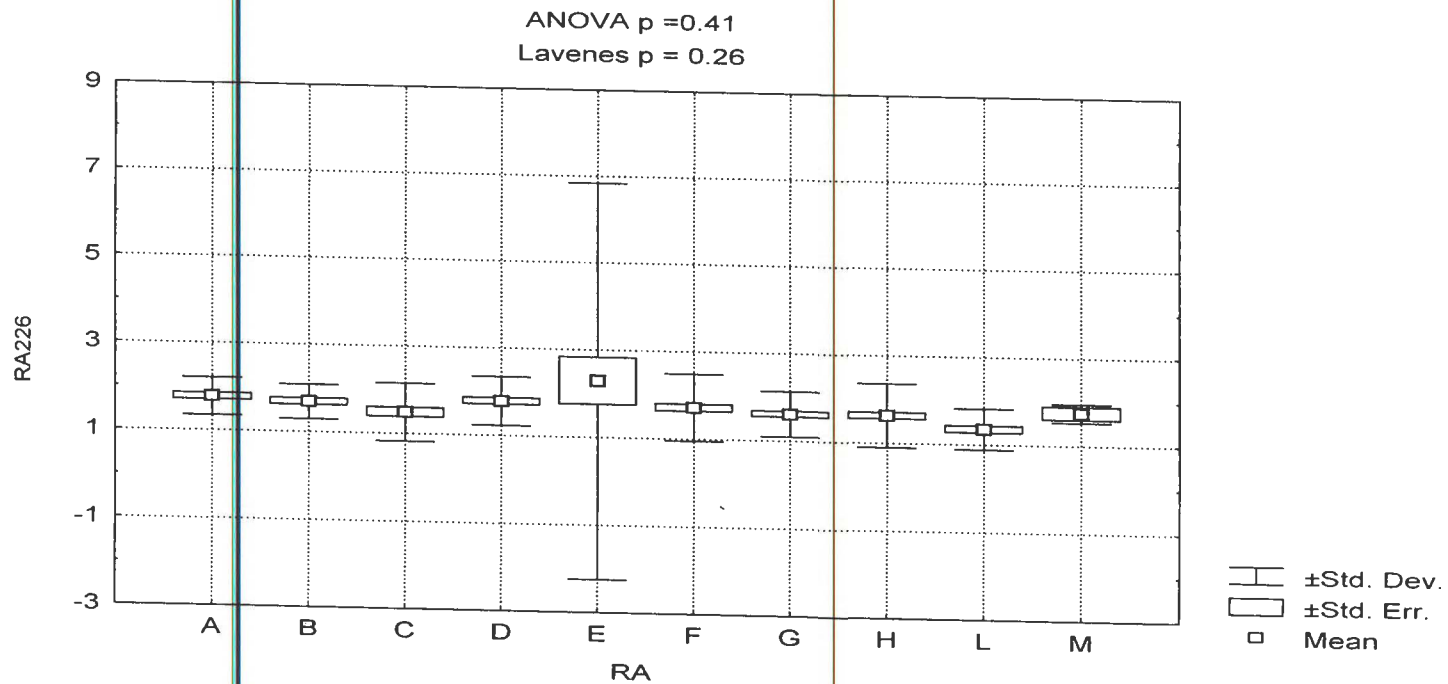
Chemicals Found in Subsurface Soils by Area of Concern

- *Disposal Pits A/B - Phenol, Cadmium, Chromium, Copper, Lead, Silver and Zinc*
- *Disposal Pit C - Lead*
- *Former Dry Waste Disposal Pit - Zinc*
- *EM-5 - PAHs, Lead*

Interpretation of Results Radionuclides in Soils

- *Exceedances of Residential DCGLs for Bi-214, Pb-210, Pb-214, Ra-226 (Daughters of Natural U-238) at Several Areas of Concern*
- *Other ANOVA Statistical Analysis Indicates Isotopes Indistinguishable from Background for Ra-226*
- *Exceedences of Worker DCGLs at EM-5 (Pb-210 and Ra-226) and EM-6 (Ra-226).*
- *Elevated Levels of Pb-210 Coincide with Cultural Artifacts at EM-5.*

Box and Whisker Plot of Ra-226 Soil Data



A- EM-5

B-EM-6

C-Building 819/ EM-27

D-Building 815-816/ EM-28

E- Disposal Pit A/B

F- Disposal Pit C

G- Former Dry Waste Disposal Pit

H- Class III Areas

L- Background

M- Wastewater Treatment Plant

P-value of 0.05 or greater indicates distributions are similar (including background)

Chemical Exceedances Groundwater

- *Iron, Manganese, and Sodium Exceed NYS AWQS GA Standards*
- *VOCs in 1 Well near Building 813 (Paint booth operations) - TCE (1600 ug/L) and 1,2-DCE (30 ug/L)*

Chemical Exceedances Sediment and Surface Water

- *NYSDEC Sediment Criteria Exceeded for SVOCs, Pesticides/PCBs and various Metals*
- *NYS AWQS Criteria exceeded for same Chemicals in Surface Water*

Radionuclide Impact on Sediment, Surface Water, and Groundwater

- *No ARARs exceeded*
- *Above Background*
 - *Sediment (U-238)*
 - *Surface Water (Rn-222, Th-227, -230, -232, U-234)*
 - *Groundwater (Th-228)*

Results of Human Health Baseline Risk Assessment (BRA)

- *Three Potential Release Areas:*
 - *Former Dry Waste Disposal Area*
 - *Disposal Pits A/B and*
 - *Disposal Pit C*
- *Non-Carcinogenic (Chem. only, Not Applicable for Rad.)*
- *Carcinogenic risks (Chem. and Rad.) within Acceptable EPA Risk Levels*

Results of Ecological Risk Assessment (ERA)

- *Ecological Quotients Above 1 from Soil are:*
 - *Disposal Pits A/B; (Aroclor 1254)*
 - *Disposal Pit C; (Zinc)*
 - *Former Dry Waste Disposal Pit; (Zinc)*

Results of Ecological Risk Assessment (ERA) - (con't)

- *Ecological Quotients Above 1 for Sediment from:*
 - *Copper*
 - *Mercury*
 - *Zinc*
- *Metals were not Screened Against Background.*
- *Isolated Areas Exceed Background*

Summary of Building Survey Work Performed to Date

- *Alpha, Beta and Gamma Scanning and Direct Measurements of all Class 1 and three Class 2 areas*
- *Exposure rate measurements in all Class 1 and three Class 2 areas*
- *Smear samples collected in all Class 1 and three Class 2 areas on walls, ducts and drains*
- *Some material samples collected from drains*

:

MINUTES
RESTORATION ADVISORY BOARD
September 19, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vasquez, Environmental Protection Agency
Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Dick Durst, Community Co-Chair, Brian Dombrowski,
Patricia Jones, Bob McCann, Ken Riemer,
Dave Schneider, Fred Swain, Karen Tackett,
Dave Wagner

Community RAB Members Not Present:

Jan Schneider, (excused), Frank Ives (excused),
Antje Baeumner (excused), Jeffrey Beall (excused),
Russell Miller, Frankie Young-Long, Henry Van Ness

Environmental Support Personnel Present:

Cliff Lippitt, Parsons Engineering Science
Inc.
Kevin Healy, USA Corps of Engineers, Huntsville
Michelle Brock, U.S. Army Corps of Engineers,
Huntsville Div
Kieth Hoddinott, USACHPPM
Randall Battaglia, U.S. Army Corps of Engineers,
New York District
Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Nancy Williamson, Recording Secretary

Community Support (from sign-in sheet):

John Hasbrouch, Romulus, NY

Visitor:

David Miller, Argonne National Laboratory

2. Mr. Absolom opened the meeting and asked for introductions of all attending. He outlined the agenda for the evening and asked if there were any comments or changes to the minutes from the June meeting. There were no changes and the minutes were signed by Mr. Absolom and Dr. Durst and entered into the record.
-

Mr. Absolom announced that Laura Sposato, Recording Secretary, has retired and taken a job at Hobart and William Smith Colleges. Everyone wishes her best. Nancy Williamson will be the new recording secretary.

3. Mr. Clifford R. Lippitt, Project Manager from Parsons, gave a presentation on the Reuse of the Deactivation Furnace as a Low Temperature Thermal Desorption (LTTD) Soil Treatment Unit. Detailed information can be found in the handout provided with these minutes.

Some highlights from Mr. Lippitt's presentation:

- The use of the existing deactivation furnace is being evaluated as a viable economical solution to the problem of contaminated soil at Seneca. Soils could be treated and reused on-site, and an existing facility comparable in design with commercial soil treatment units would be activated. Operation by current employees familiar with the site and equipment would be an economic advantage, as well.

- The Low Temperature Thermal Desorption is a process designed to heat contaminated soils to between 400-900 degrees Fahrenheit, whereupon the organic compounds are transferred into a contained air stream. The air stream is further heated to 1600 F. to clean and remove particulate before releasing into the atmosphere. Many controls are in place throughout the process to monitor elimination of contaminants.

- Currently the process is undergoing a demonstration study. A description of the types of contaminated soils can be seen in the enclosed handout. The tests are conducted in triplicate: three 6 to 10 hour tests at 2 tons per hour and three 6-10 hour tests at 5 tons per hour.

- The study will evaluate soil treatment throughput and chemical removal efficiency, exhaust gas emissions, destruction and removal efficiency, control systems, and economics.

- A report of the study will be submitted for regulatory review and approval. Various system upgrades and modifications will be made. Repeat proof of process performance testing will be made.

Q: Is dioxin produced in this process?

A: Temperatures should prevent this, but monitoring will take place.

Q: How many people does it take to run the furnace?

A: Operators include 2 to feed and load, and 2-3 to monitor.

Q: When is the earliest it can be up and running after the test/review/response phases?

A: Probably in the Spring of 2001.

- Mr. Absolom emphasized that the unit is for treating soils on Seneca and not for bringing in soils from off-Seneca.

- He is pushing the project because we would be cleaning soils on-site and putting them back in the ground rather than moving them to a landfill.

- He stated that the process is not fast but does present significant cost savings.

Q: Can the treated soil be used for vegetation?

A: The soil becomes sterile, thus unable to sustain life. However, it can be used as fill material over which topsoil could be placed and then used for vegetation.

Q: How much soil do we have to burn?

A: It depends on whether the soil has petroleum contaminants and on our efficiencies.

Q: It would not be used commercially, but could it be used by off-post entities in an emergency?

A: The furnace would have to be closed and decontaminated; then it could be used.

Q: Can it be used for fuses and 20mm ammunition:

A: No.

4. Mr. Randall Battaglia, U.S. Army Corps of Engineers, New York District, gave a presentation on Fiscal Year 2001 Projects. Please refer to the handout provided with these minutes.

- BRAC funding changes:

Funding will be optimized across all BRAC bases by year. Money will not be transferable to other projects. Instead, it could be lost to other BRAC bases before yearend (or we could be given money from stalled projects at other bases.) This means that we will have to phase our projects, budgeting year to year as well as project to project.

Funding is based upon reuse and mandatory requirements.

The BRAC account was to expire in 2001 but an extension to 2007 has been approved. After 2007, the Army must budget for project money. Our projects will compete for dollars with all other Army projects.

-The following sites are scheduled for investigation in fiscal year 2001:

EBS-Industrial RIFS (PID Area)
Ash Landfill -- Remedial Action
 Need Preliminary Remedial Action Plan.
 There will be public meetings on this.
RAD Sites -- SEAD 12,63, and 48.
Open Burning Grounds
Sludge Piles -- Removal Action
Multiple Sited ROD with Risk Assessment -- 17
 sites.
Munitions Destruction Areas RIFS, RD -- SEAD
 45,46,57.
RCRA Closure of Open Detonation Grounds
 Radiation surveys of various buildings
 and igloos--included are class 1,2,and 3
 buildings.

5. Mr. Absolom then opened the meeting to discussion.

He announced that next month, during the same week as the RAB meeting, there would be a Multi-Agency Radiological Survey and Site Investigation Manual (MARSSIM) Workshop on "How you evaluate potential radiological contamination" at Ramada Inn for 3 days. Anyone on the RAB may attend. Dates are 17,18,19 October 8 a.m. to 5 p.m. Let Tom Enroth know if you wish to attend. There will be no cost to RAB (does not include lunch). A certificate will be issued.

-Day one (morning session) will be an overview of MARSSIM.

- Day one (afternoon session) will examine the statistical approach to sampling and scanning devices.
- Day two will look at different instruments for surveys and how to apply them.
- Day three will examine examples, issues. ~~La the groundwork for common procedures between~~ agencies.

The October RAB meeting will include a synopsis of the MARSSIM workshop.

Mr. Steve Paszko, NY DEC Representative, will be taking a new job in Lake George and thus resigning from the Board. Mr. Marsden Chen will fill in until a new person is appointed.

Mr. Durst announced that he and his wife, Antje Baeumner, are moving to Ithaca and are both resigning from the Board. He has been a member of the RAB since 1992. Thus, we need to elect a new Community Co-Chair. He would like to stay on the mailing list and is ~~willing to provide technical support on an as-needed~~ basis.

Mr. Absolom stated that we have by-laws for selecting co-chairmen. First we will see who is interested in assuming the duties. Please let Nancy Williamson know if you are interested in the position and we will vote at a future meeting. (Mr. Durst - since we all know one another, there is no need to do this formally.)

There was discussion whether we were at the point where we could meet every other month. Mr. Absolom said it is up to the Board to determine. However, we have a lot of upcoming projects. It was decided to table this issue until the January meeting.

Mr. Geharty, Department of Health, spoke for everyone present in his praise and thanks to Mr. Durst for his contributions to the Board.

6. The meeting was adjourned at approximately 8:50 p.m. The next RAB meeting with both government and community members, will be on October 17, at 7:00 p.m. at the Romulus Town Hall in Willard.

Respectfully submitted,

Nancy Williamson

Enclosure

NANCY WILLIAMSON
Recording Secretary

APPROVED AS SUBMITTED:

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

Community Co-Chair

FISCAL YEAR 2001

(1 Oct 00-30 Sep 01)

Projects



PRESENTED BY:
RANDY BATTAGLIA, PROJECT MANAGER
NEW YORK DISTRICT, U.S. ARMY CORPS OF
ENGINEERS



BRAC Funding Changes

- Funding has been optimized across all BRAC bases by year-currently means phasing some projects
- Army-wide “bang for the buck”
- Based upon reuse, mandatory requirements
- BRAC account expires 2001, approved extension to 2007
- Army budget after that-projects compete with other Army funds



EBS- Industrial RIFS (PID Area)

- USCG HALON DISCHARGE / NO
- BLDG 325 PCB OIL SPILL NO
- DRMO YARD → NO
- BLDGS 306, 308 HAZARDOUS MATERIALS RELEASE NO
- BLDG 127 UNDERGROUND TANK PETROLEUM RELEASE ? NO



EBS Industrial RIFS (PID Area)

- BLDG 135 STAINED SOIL No
- RUMORED COAL ASH DISPOSAL AREA NO
- RUMORED COAL STORAGE AREA No
- SEAD-068, OLD PEST CONTROL SHOP [BLDG S-335] NO

NA Required



EBS Industrial (PID Area)

- This project is funded to perform the initial phases of Remedial Investigation/ Feasibility Studies (RI/FS) for the sites in the Planned Industrial Area
- Initial RI will determine if a cleanup is needed
- Feasibility Studies determine the technologies and costs for the cleanups



Ash Landfill Remedial Action

- The Remedial Action for the Ash Landfill site is funded for FY01
- The Preliminary Remedial Action Plan and groundwater treatability study is under review by the regulators
- PRAP and Record of Decision have public review and comment periods



RAD Sites

- SEADs 12,63 have Remedial Designs and Remedial Action (phase 1) funded
- SEAD 48 has RIFS funded



Open Burning Grounds

- The OB Grounds has continuing work to be performed in FY01
- This includes further treatment of soils, disposal off site, and final site restoration



Sludge Piles Removal Action

- SEADs 59,71 have a removal action funded for FY01
- This site includes landfilled petroleum sludges, paint/solvent disposal



Multiple Sites ROD with Risk Assessment

- Initial investigations on 17 Sites have shown to be likely no action sites
- Risk assessment based upon initial investigations will likely prove there is no environmental or health risks associated with these sites
- This project will document the no action decisions



Munitions Destruction Areas RIFS, RD

- SEADs 45,46,57 RIFS for ordnance and chemical contamination are funded for phase 2 RIFS, and Remedial Design
- These sites are ordnance related sites



RCRA Closure of Open Detonation Grounds

- SEAD 115 is the same area as SEAD 45
- This is funded for investigation and cleanup of the Open Detonation Area under RCRA and CERCLA



Radiation Surveys

- Surveys of various buildings is funded
- Various buildings and igloos are to be surveyed to ensure radiological contamination is not present for future reuse

Presentation to the RAB
September 19, 2000

Reuse of Deactivation Furnace as a
Low Temperature Thermal
Desorption (LTTD)
Soil Treatment Unit

Clifford R. Lippitt, C.P.G.

Topics for Tonight's Presentations

- *Objective*
- *The LTTD Process*
- *Testing - Goals*
- *Current Status*
- *Future Activities*

Objective

*Evaluate Use of Former
Deactivation Furnace
for
Controlled Treatment of Organic
Compound Contaminated Soils
Found at SEDA*

Why Convert Deactivation Furnace?

- *Onsite Treatment and Reuse of Soil .vs. Offsite Treatment/ Disposal*
- *Use Existing Inactive Equipment*
- *Design Based on Cement Kiln Technology*
- *Furnace Design Equivalent to Commercial Soil Treatment Units*

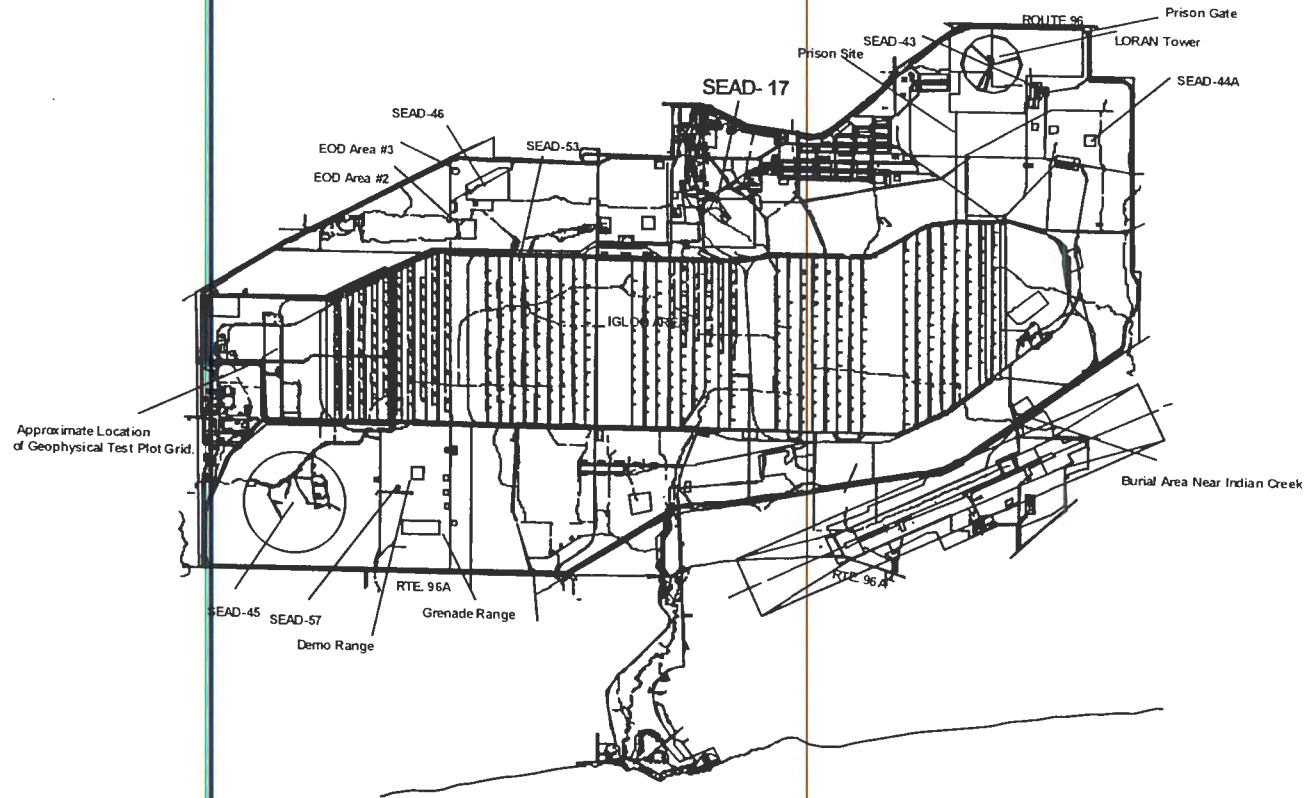
Deactivation Furnace History

- *Previously Operated as an Ammunition Destruction Facility*
- *Furnace Operated From 1962 to Mid-1989*
- *Equipment Upgraded in 1978 & 1989*
- *Inactive Since 1989 Pending Permit Approval as a Waste (Munitions) Treatment Unit*

The LTTD Process

- *Heat Contaminated Soils to 400-900° F to Transfer Volatile and Semivolatile Organic Compounds into the Air Stream*
- *Treat/ Destroy Volatilized Organics in the Air Stream by Combusting at ~1600° F Prior to Release to Atmosphere*
- *Clean/Remove Particulate From Air Stream Prior to Release to Atmosphere*

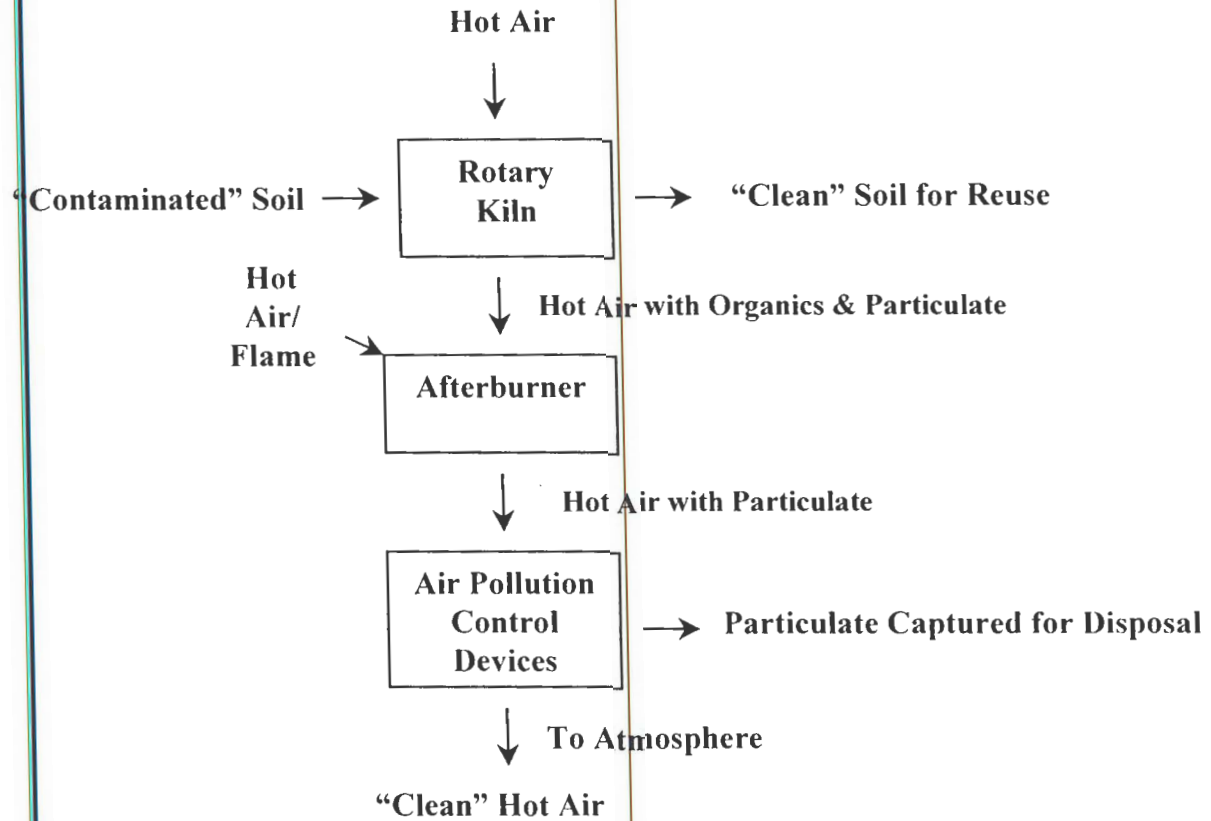
LTTD Location/ SEAD-17



Key Components

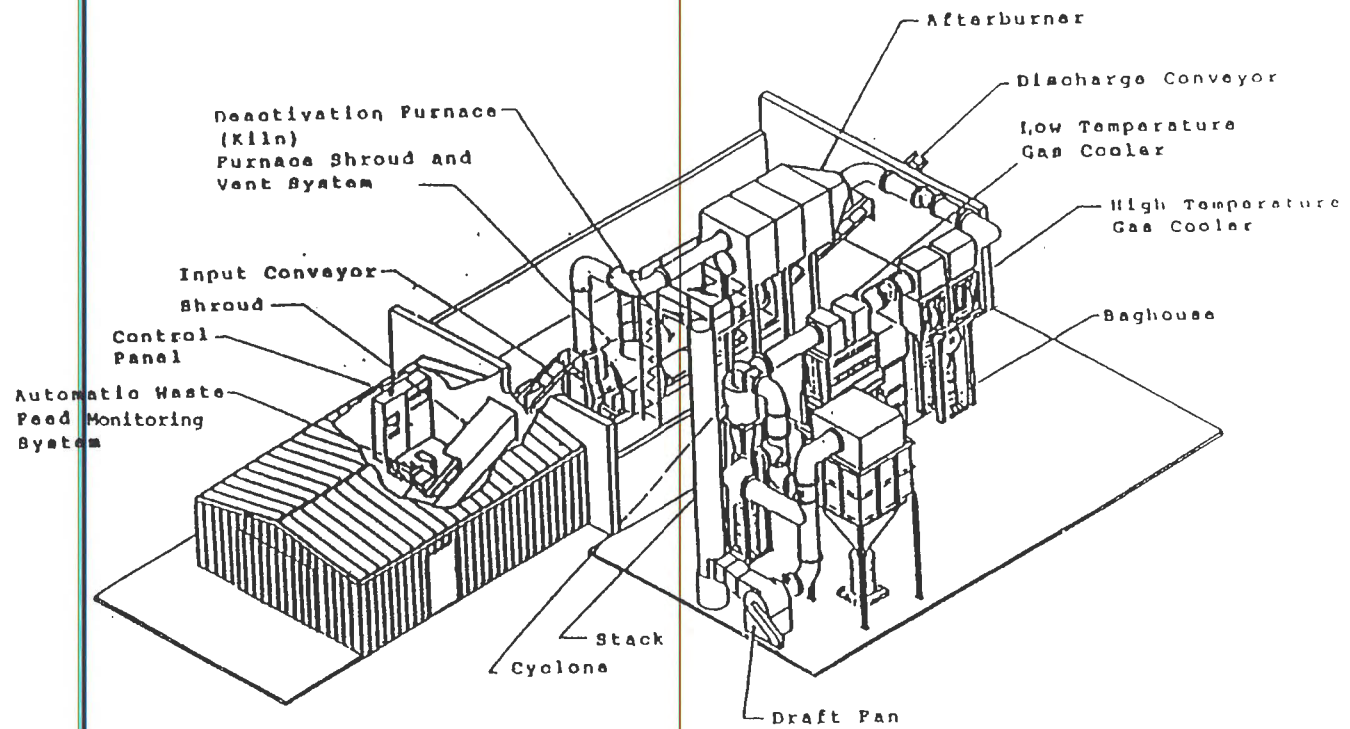
- *Feed System*
- *Rotary Kiln (Direct Fired - Counter-current)*
- *Afterburner (Direct Fired - Co-current)*
- *High Temperature Gas Cooler*
- *Low Temperature Gas Cooler*
- *Cyclone*
- *Baghouse*
- *Exhaust Stack*

Process Flow Diagram



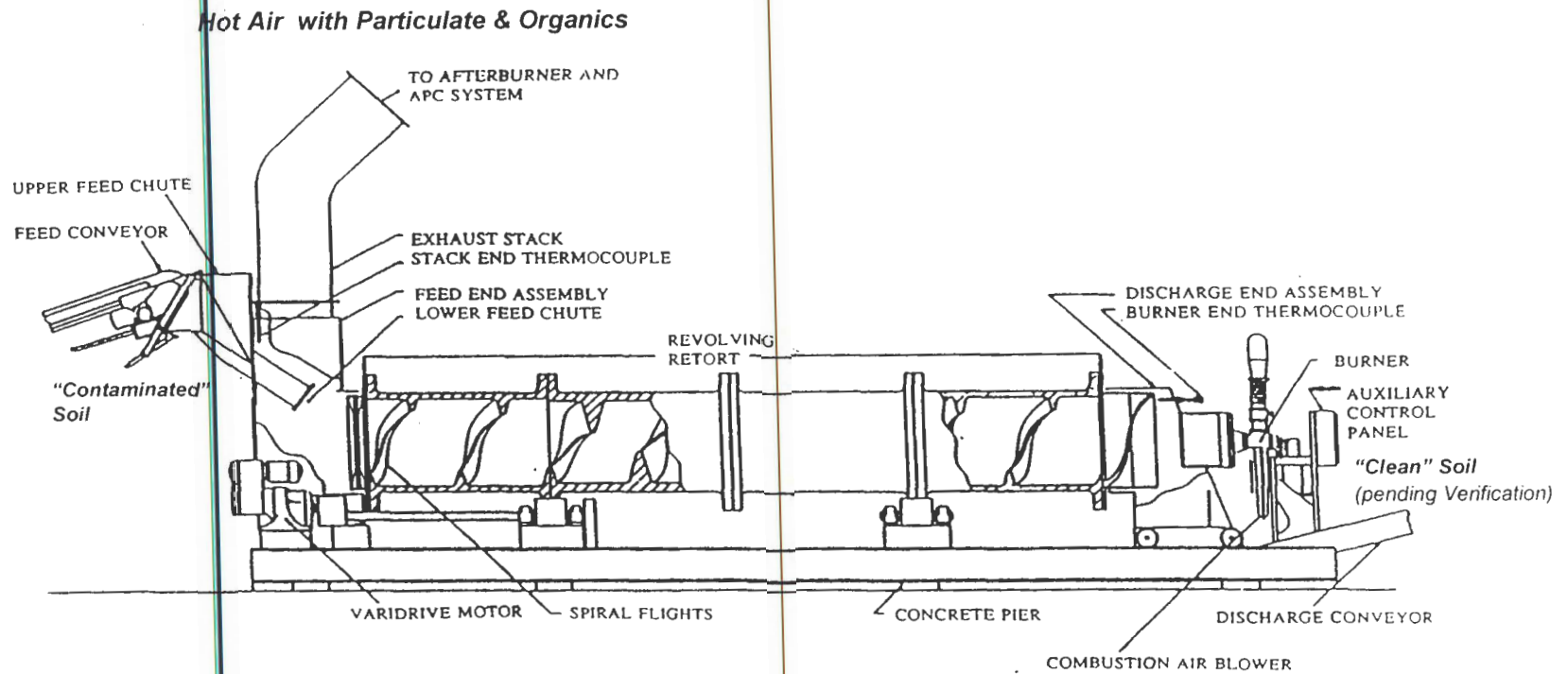
Deactivation Furnace

APE 1236



AC SK 02-12

Deactivation Furnace

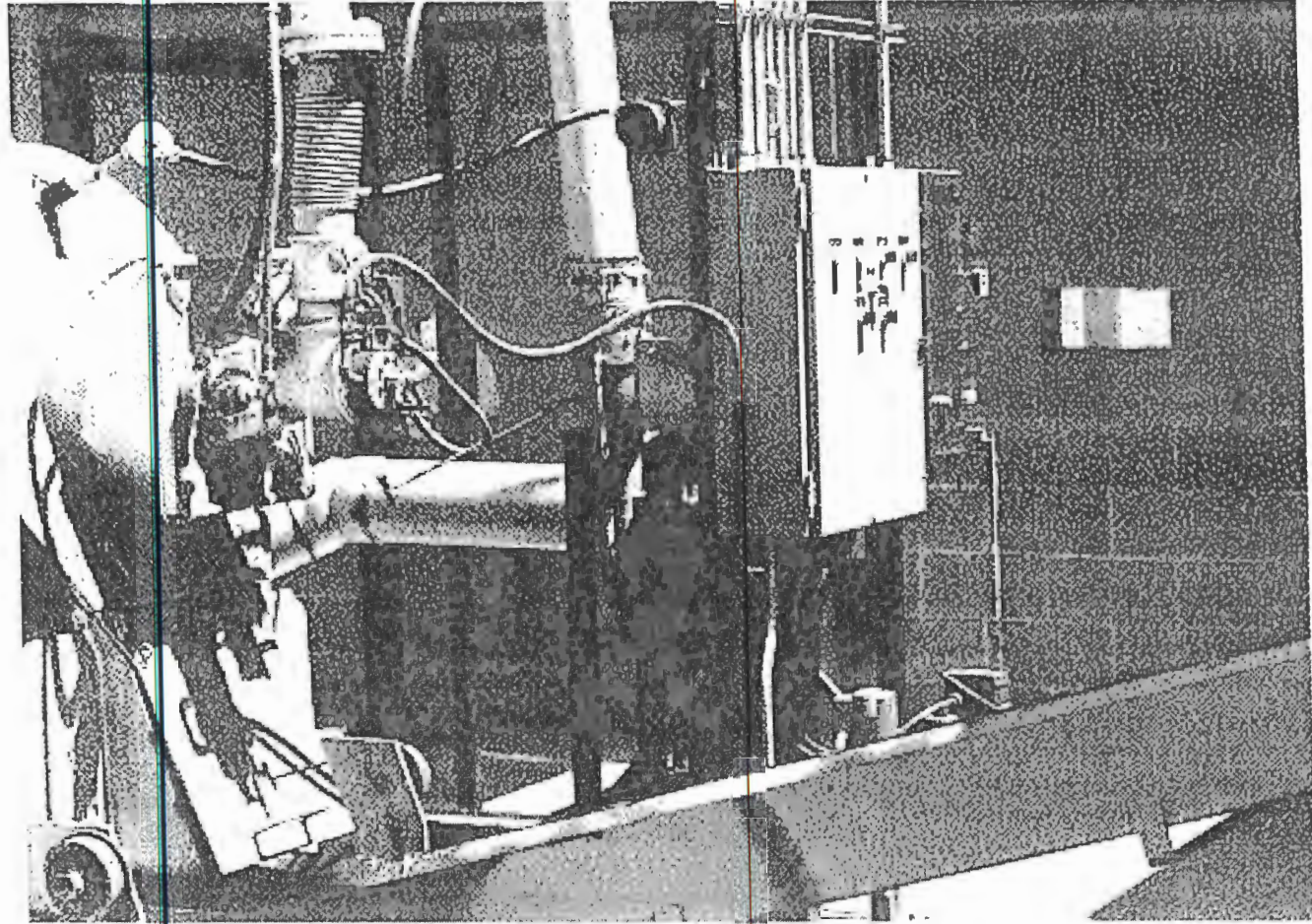


Feed to Kiln



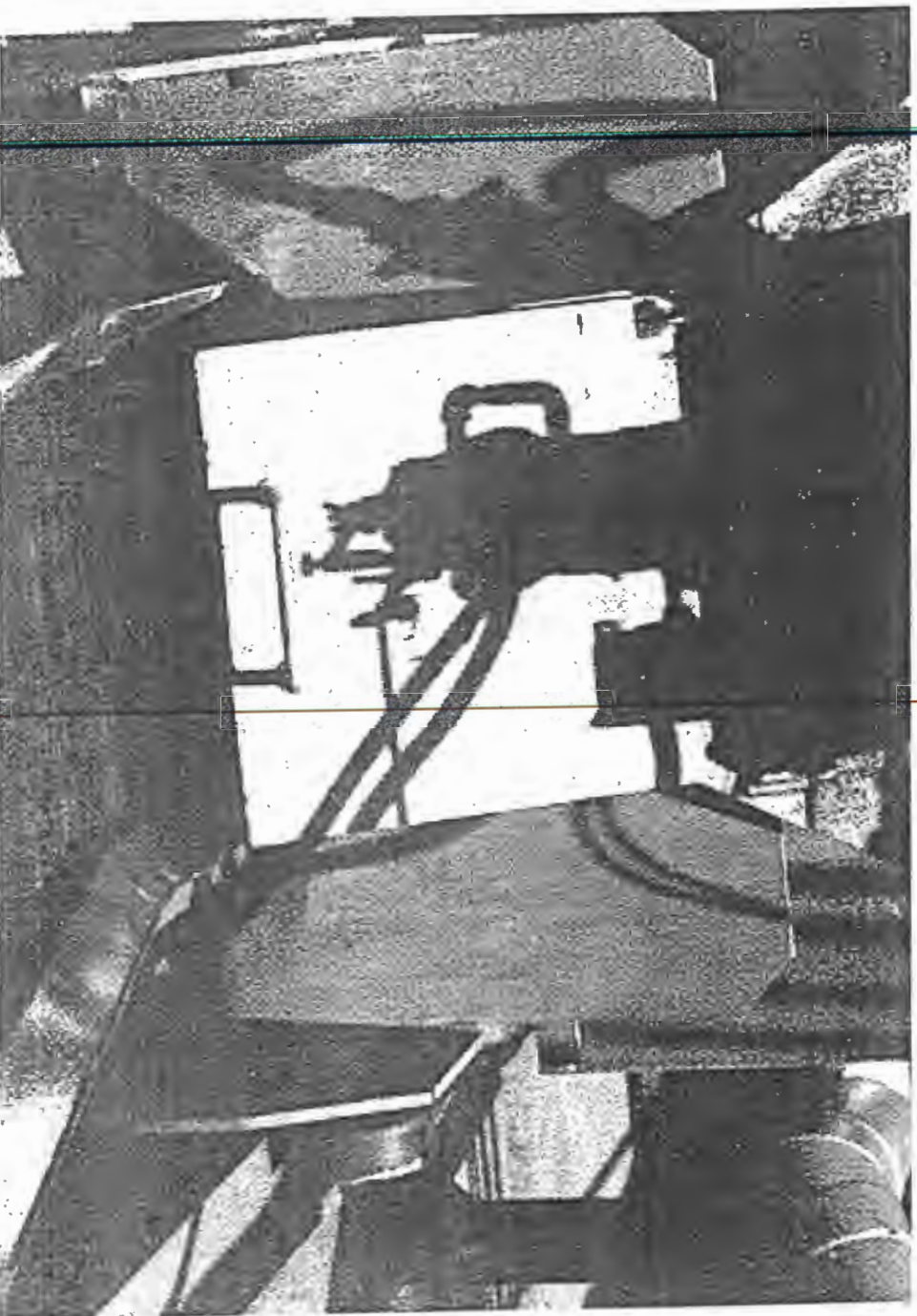
PARSONS ENGINEERING SCIENCE

Kiln Burner Assembly & Exit Soil Conveyor

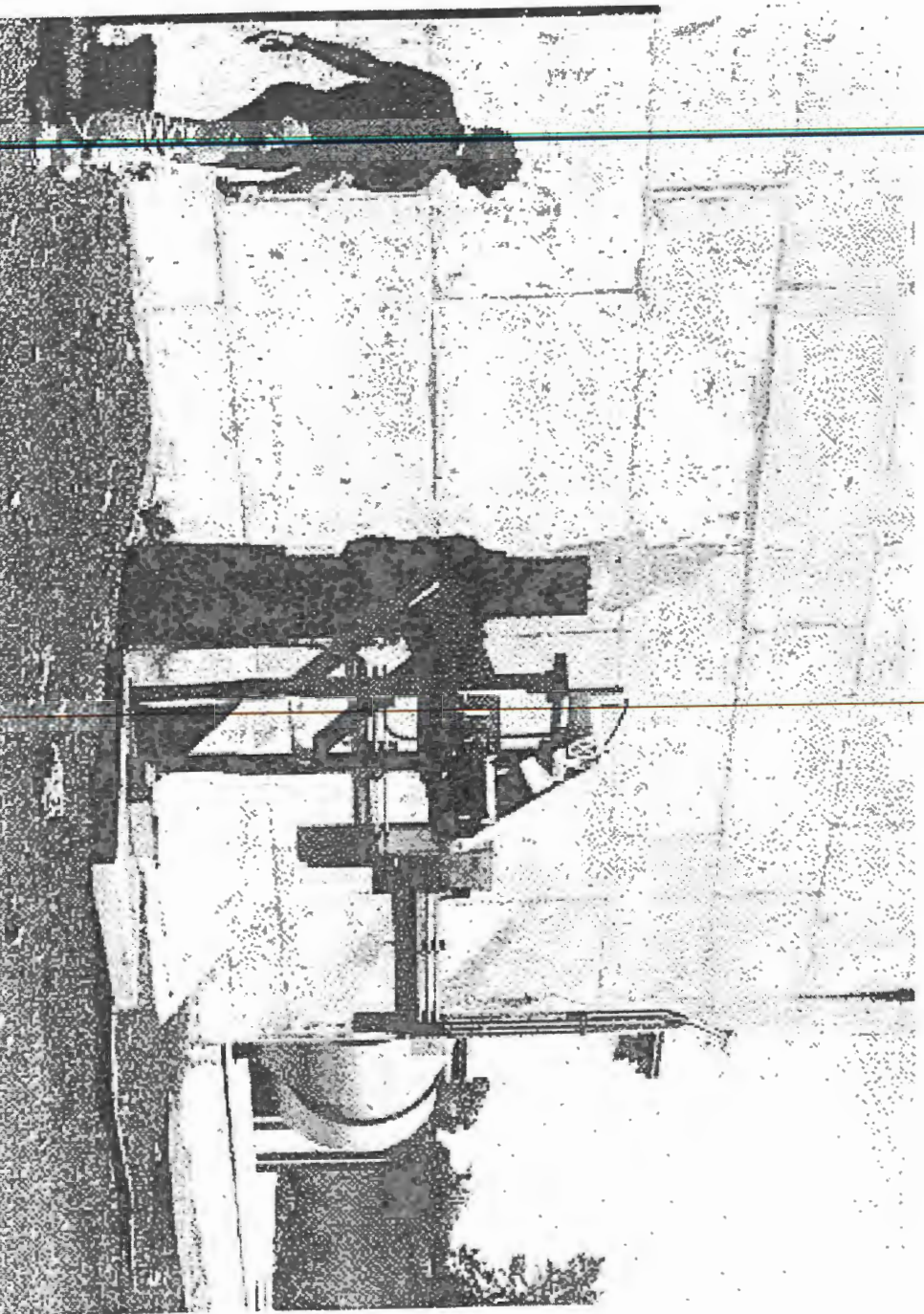


PARSONS ENGINEERING SCIENCE

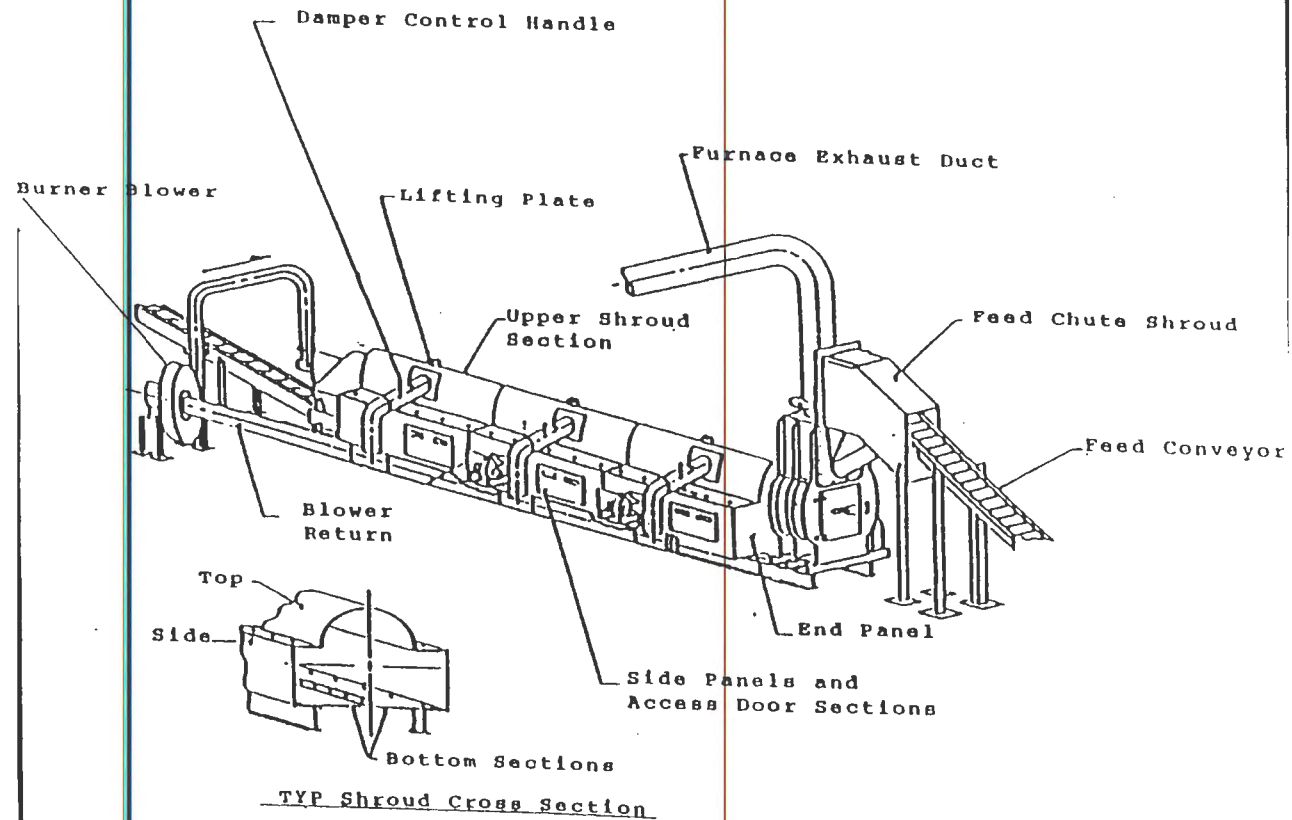
Kiln Discharge Conveyor



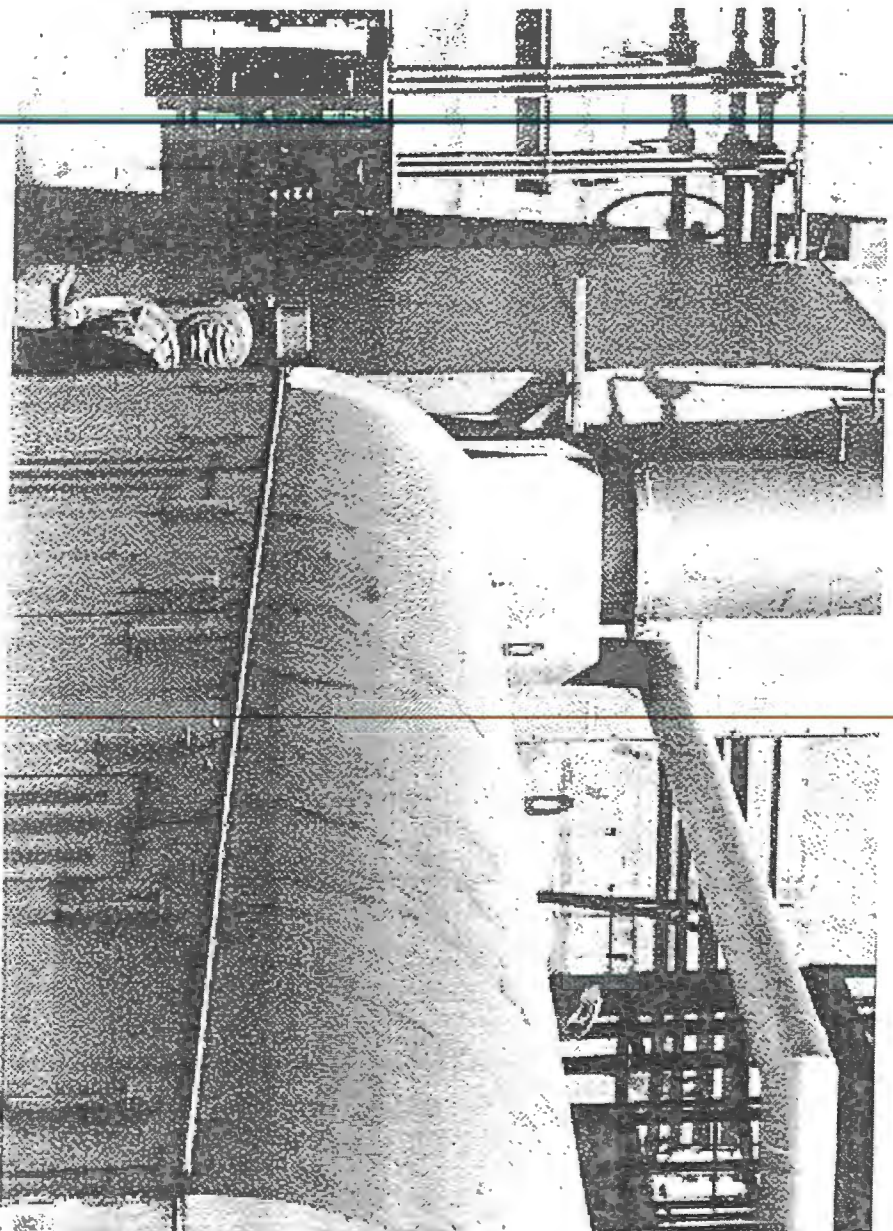
Treated Solids - Final Discharge



Fugitive Emission Controls

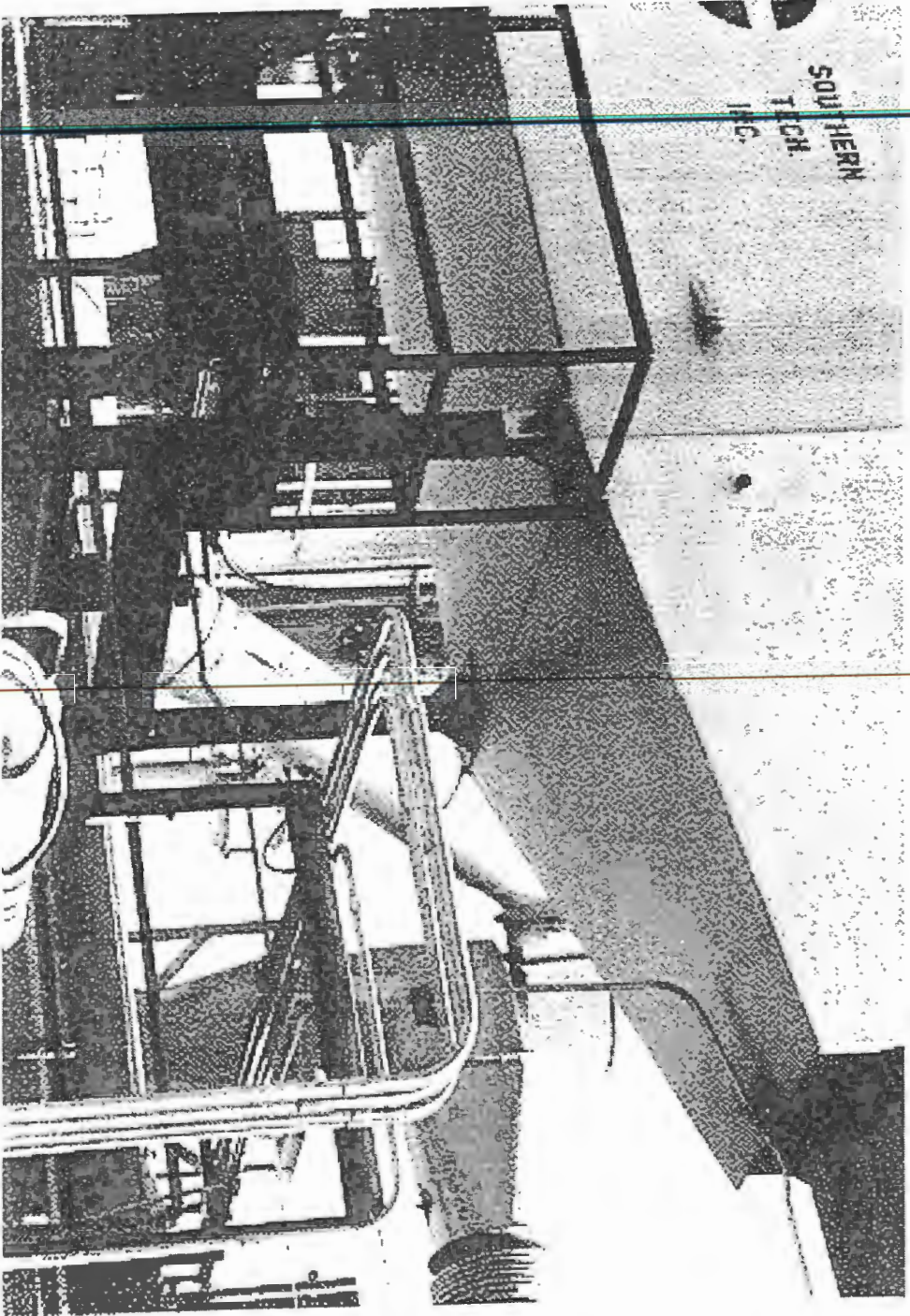


Kiln Exhaust & Kiln Shroud



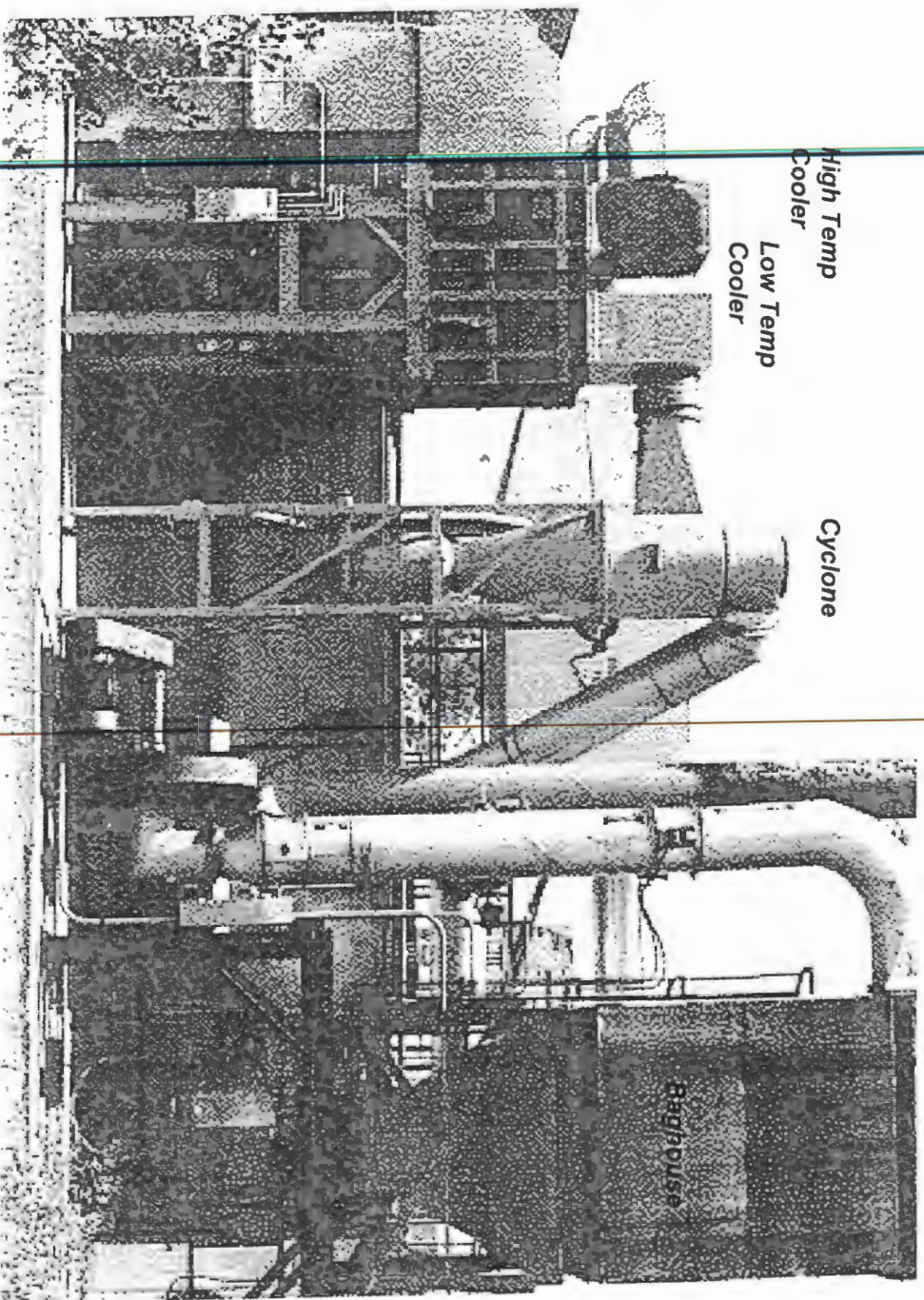
PARSONS ENGINEERING SCIENCE

Afterburner



PARSONS ENGINEERING SCIENCE

Particulate Removal



Demonstration Study Evaluations

- *Soil Treatment Throughput & Chemical Removal Efficiency*
- *Exhaust Gas Emissions*
- *Destruction and Removal Efficiency*
- *Control Systems*
- *Economics*

Demonstration Study

Soil Characteristics

Input Soils

- *Historic Fuel Oil Spill at SEAD-60*
- *Primarily TPH, PAHs & Metals ← ?*
 - *TPH - Average under 7,000 ppm*
 - *PAHs - Average under 5-10 ppm*
 - *Low VOCs - Average under 100 ppb*

Test Conditions

- *Feed rates of 2 & 5 Tons/Hr*
- *Soil Outlet at 600° F*
- *Residence Time 15 Minutes*
- *Afterburner at 1600° F*
- *Carbon Monoxide & Hydrocarbons less than 100 ppm on CEMs*

Demonstration Study S & A Program

- *Soil (TPH, SVOCs, & Metals)*
 - *Inlet & Outlet*
- *Gases*
 - *Particulate Mass*
 - *VOCs, SVOCs, Dioxins*
 - *Continuous Emission Monitors (CEM) - O₂, CO, CO₂, & Total Hydrocarbons*
 - *Hydrochloric Acid*
 - *Metals*
- *Air Pollution Control "Flyash"*
- *Fugitive Emissions - Dust*

** Tests Conducted in Triplicate*

Demonstration Study

Efficiencies

- *Soil Removal Efficiency/ Volatilization*
 - $Vol\% = \frac{\text{Volatile Mass IN} - \text{Volatile Mass OUT}}{\text{Volatile Mass IN}} \times 100$
 - *Volatilization Efficiency Goal >70%*
- *Destruction and Removal Efficiency (DRE)*
 - $DRE = \frac{\text{Mass of Waste IN} - \text{Mass of Waste OUT (at Stack)}}{\text{Mass of Waste IN}} \times 100$
 - *DRE Goal 99.99%*

Current Status

- *Testing Started 8/30 & 9/1 (2 x 2T/Hr)*
- *Testing Planned 9/20 - 9/23 (1x2T/Hr, 3x5T/Hr)*

Future Actions

- *Report Submittal for Regulatory Review and Approval*
- *System Upgrades & Modifications*
 - *Inlet & Outlet Conveyor Improvements*
 - *CEM Replacement*
 - *Instrumentation & Controls Upgrade*
- *Repeat Proof of Process Performance Testing*
 - *Worst Case Scenario for Permitting*

MINUTES
RESTORATION ADVISORY BOARD
October 17, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Not Present:

Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair (excused)
Dan Geraghty, NYS Department of Health
Julio Vasquez, Environmental Protection Agency
Jim Quinn, Department of Environmental
Conservation

Community RAB Members Present:

Brian Dombrowski, Bob McCann, Russell Miller, Ken
Riemer, Fred Swain, Karen Tackett, Henry Van Ness,
Dave Wagner

Community RAB Members Not Present:

Frank Ives (excused), Patricia Jones (excused),
Dave Schneider, Jan Schneider, Frankie Young-Long

Environmental Support Personnel Present:

Thomas Enroth, U.S. Army Corps of Engineers,
New York District,
Nancy Williamson, Recording Secretary

Community Support (from sign-in sheet):

Ronald Enslow, Waterloo, NY
Gregg Tackett, Romulus, NY

Visitors:

David S. Miller, Argonne National Laboratory,
Tom Sydelko, Argonne National Laboratory
Sunita Kamboj, Argonne National Laboratory
Kurt Picel, Argonne National Laboratory

2. Mr. Enroth opened the meeting and asked for introductions of all attending. He explained that Mr. Absolom, Army Co-Chairman, is at a BRAC meeting in Huntsville, AL. He outlined the agenda for the evening and asked if there were any comments or changes to the minutes from the September meeting.

3. There were no changes and the minutes were signed by Mr. Enroth for Mr. Absolom and Ms. Karen Tackett, Community Co-Chair, and were entered into the record at this time.

Mr. Enroth announced that Jeffrey Beall had resigned but requested to remain on the mailing list. He was pleased to have served on the board.

Heather Clark, the Cornell student who spent time studying the RAB, has a copy of her thesis on the RAB filed at the Ovid Library. It is an interesting thesis. Heather is working on her Ph.D. at Cornell University.

A letter (see enclosed handout) from Sherri W. Goodman, the Deputy Under Secretary of Defense for Environmental Security, announcing a DOD Environmental Cleanup Stakeholders Forum, November 14-16, 2000. The Forum is open to the public. She encouraged RAB members who are interested to attend. Mr. Enroth said the Army would cover travel and per diem expenses. Deadline is 18 October. Ms. Tackett expressed a desire to attend.

This week there is no BRAC Cleanup Team meeting. Instead, there is a three-day MARSSIM workshop.

MARSSIM stands for Multi-Agency Radiation Survey and Site Investigation Manual. Mr. Enroth introduced Dr. David Miller, Argonne National Laboratory, to give an overview of the MARSSIM. The handout is attached.

4. Dr. Miller explained that Argonne National Laboratory, Chicago, Illinois, provides radiological advice to agencies across the country.

The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) is a collaboration of four agencies involved in radiological cleanup: Department of Defense, Department of Energy, Environmental Protection Agency and the Nuclear Regulatory Commission.

The MARSSIM provides information on planning, conducting, and documenting building surface and surface soil final status radiological surveys for demonstrating compliance with dose or risk-based regulations or standards.

The MARSSIM provides guidance on determining whether a survey unit meets the release criterion. It assumes that each survey area is contaminated until proven otherwise.

The MARSSIM fills in the gaps in regulatory guidance with regard to specifics on sampling, i.e. how many samples to be taken, which sampling analysis to use and how to evaluate sample analysis to see if regulatory-based criteria are met.

- It is a nationally consistent consensus approach to conducting surveys.
- It formalizes use of statistical tools.
- It is a detailed flow-through process: Planning, Implementing, Assessing, and Deciding.

Of the four, Planning is most crucial. Thorough detailed planning expedites the following stages of sampling and measuring, assessing and making final decisions on whether a site meets criteria to be released or not.

5. The information about Intertec laboratory testing was to be presented by Mr. Duchesneau of Parsons Engineering Science. Intertec made some faulty analyses; however, those made on Seneca samples were not germane to decision making. Mr. Duchesneau was unable to make the meeting, so the topic was tabled until the next meeting.
6. Mr. Enroth asked for nominations for election of the new Community Co-Chair. Mr. Ken Riemer expressed an interest, as did Ms. Tackett. Mr. Riemer withdrew in favor of Ms. Tackett. The Secretary cast one ballot for the unanimous election of Ms. Tackett as the new Community Co-Chair.

7. Open Discussion

Q: We hear about pending uses for the Depot such as a bid for a 8 to 9 thousand-acre conservation preserve for deer that was made and accepted. Also, that another party is bidding on land for a gravel pit. May we have IDA come in to tell us what is what?

Comment: The DEC was interested in maintaining a deer preserve, but wanted the Army to fund maintenance of the land and fence. However, the Army will not put up the money.

Q: Where would the gravel bed be? Wouldn't there be a problem if the ground were dug up?

Comment: Reuse is not a RAB focus unless the area requested be impacted by cleanup.

Comment: Right or wrong, the community wants the RAB to be involved in transfers. The public believes the RAB is their eyes and ears on SEDA reuse.

A: We have an IDA member on the RAB. If the board wants the IDA to come and speak and answer questions that can be arranged.

Q: Are the new owners taking over areas that are yet to be cleaned.

A: Some of the leased areas are still being cleaned, but the tenants have been told which areas these are.

Comment: The ammo areas are classified as conservation areas. If needed for another purpose, the areas would have to be reclassified.

Q: The RAB is to focus on restoration. The BCT is a more detailed technical Army meeting on cleanup. What is the RAB role? Some people come to meetings just to find out about real estate issues instead of concentrating on what the depot problems are.

Q: Are there minutes for IDA, LRA and BCT meetings?

A: Mr. Enroth stated that BCT does not have formal minutes. He couldn't speak for IDA and LRA.

Comment: We need to focus on cleanup.

Comment: The public wants to know about cleanup and land transfer/use. You can't separate future use from cleanup.

Comment: If there are areas where a new tenant is near a cleanup site, they should be made aware. The cleanup sites should be controlled.

A motion was made and seconded to have the "Role of the RAB" and how the RAB can be more focused and efficient as agenda items at the next meeting. A second motion was made and seconded to invite the IDA for a Q & A session at a future meeting.

Mr. Enroth entertained the suggestion of advertising for new members, as there have been several resignations over the last few months. He suggested the board review the RAB charter and bylaws. (The charter is enclosed with these minutes.)

Mr. Riemer is concerned that the explanation given by Intertec is not acceptable and wants Mr. Duchesneau to present the Intertec issue in detail.

8. The meeting was adjourned at approximately 9:05 p.m. The next RAB meeting with both government and community members, will be on November 21, at 7:00 p.m. in the Board of Supervisors room at the Seneca County Office Building in Waterloo.

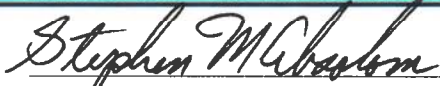
Respectfully submitted,



NANCY WILLIAMSON
Recording Secretary

Enclosure

APPROVED AS SUBMITTED:



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



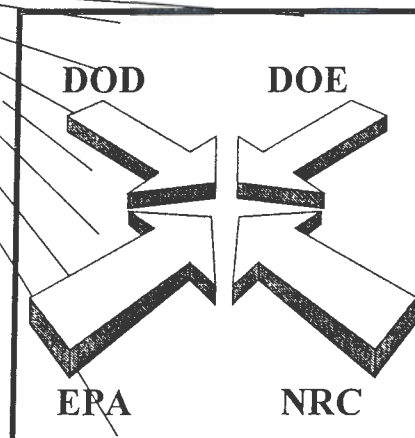
Karen Tackett
Community Co-Chair

MARSSIM:

An Introduction

David S. Miller
Argonne National Laboratory
17 October 2000

**MULTI-
AGENCY
RADIATION
SURVEY
and
SITE
INVESTIGATION
MANUAL**



- The MARSSIM is a multi-agency consensus document that was developed collaboratively by four federal agencies having authority and control over radioactive material.
- The MARSSIM provides information on planning, conducting, and documenting building surface and surface soil final status radiological surveys for demonstrating compliance with dose or risk-based regulations or standards.

3

- Simply put, the MARSSIM provides guidance on determining whether a survey unit meets the release criterion.
- The initial assumption used in MARSSIM is that each survey unit is contaminated above the release criterion until proven otherwise.

4

Participants of Note

Relative to Seneca Army Depot Activity

■ Paul Merges, Ph.D. - NYSDEC

- Member of EPA's Science Advisory Board Radiation Advisory Committee's Review Subcommittee which conducted an extensive peer review of MARSSIM

■ Carl Gogolak, Ph.D. - DOE/EML

- Primary assistant to the NRC in the development of MARSSIM.
- One of the course instructors this week.

5

Need for MARSSIM

- Regulations do not address topics like:
 - How many physical samples should be taken and analyzed or direct measurements made to demonstrate compliance
 - How to determine what physical sampling, analysis, or measurement methods to use
 - How to evaluate sample analysis and measurement data sets to determine if the regulatory-based criteria are met

6

Purpose of MARSSIM

- Nationally consistent consensus approach to conducting surveys:
 - Oriented toward dose- or risk-based regulations
 - Scientifically rigorous
 - Apply to the full range of potential sites
 - Comprehensive guidance
 - Performance-based
 - “Survey” = ; “Site Investigation” =

7

MARSSIM Scope

- *Surface soils and building surfaces*
- Scope does NOT include:
 - Selecting the release criterion
 - Translating dose or risk into concentrations
 - Groundwater or drinking water compliance
 - Subsurface soil
 - Building materials and release of components
 - Evaluation of remedial alternatives
 - Public involvement

8

MARSSIM and Statistics

MARSSIM provides an approach for:

- Formalizing the use of statistical tools for
 - collection
 - organization
 - interpretationof numerical data
- Integrating tools for decision-making

9

What's Old

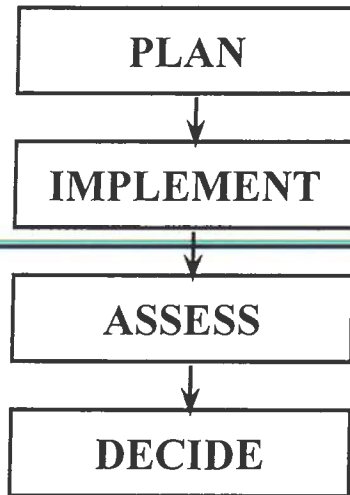
- **Release Criterion**
 - *Concentration/Activity Based*
- **Survey Unit Classification**
 - *Affected vs Unaffected*
- **Survey Design**
 - *Fixed Sampling Density*
- **Statistical Methodology**
 - *Parametric "Student's t" Confidence Interval*

What's New

- ➔ *Dose Based*
- ➔ *Graded Approach Based on Contamination Potential*
- ➔ *Flexible, Integrated Scanning, and Sampling or Direct Measurements*
- ➔ *Nonparametric Hypothesis Test*

10

MARSSIM Is a Process:



11

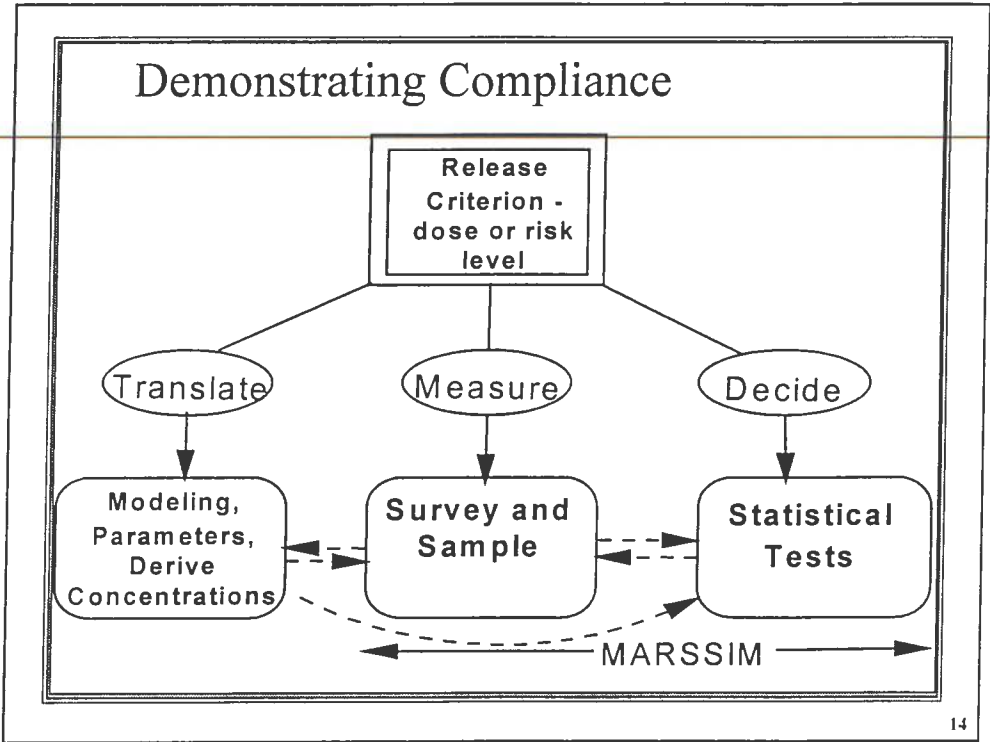
MARSSIM Objectives

- Guidance for
 - Planning and determining survey objectives and data quality needs
 - Conducting sampling and measurement
 - Assessing to determine if survey planning objectives were met
 - Making decisions based on assessment results

12

Step	Product
STATE THE PROBLEM	Clear description of the problem for a specific project.
IDENTIFY THE DECISION	Decision that will be needed to address the problem.
IDENTIFY INPUTS TO THE DECISION	Information that will be needed to make the decision.
DEFINE THE STUDY BOUNDARIES	Description of statistical population for which the decision will be made.
DEVELOP A DECISION RULE	How parameter of interest and action level will be used to make a decision.
SPECIFY LIMITS ON DECISION ERROR	Acceptable probability of making an incorrect decision.
OPTIMIZE THE DESIGN	Optimal probability of making an correct decision.

13



14

What do we need to know to release a site?

1) That the *average* concentration of residual radioactivity in a survey unit results in a dose less than the limit

and

2) That there are no “hot spots” that have been missed

15

Identifying the Decision

Does the survey unit meet the release criteria or not?

Find out with measurements.

What kind? How many?

Good, but not too good.

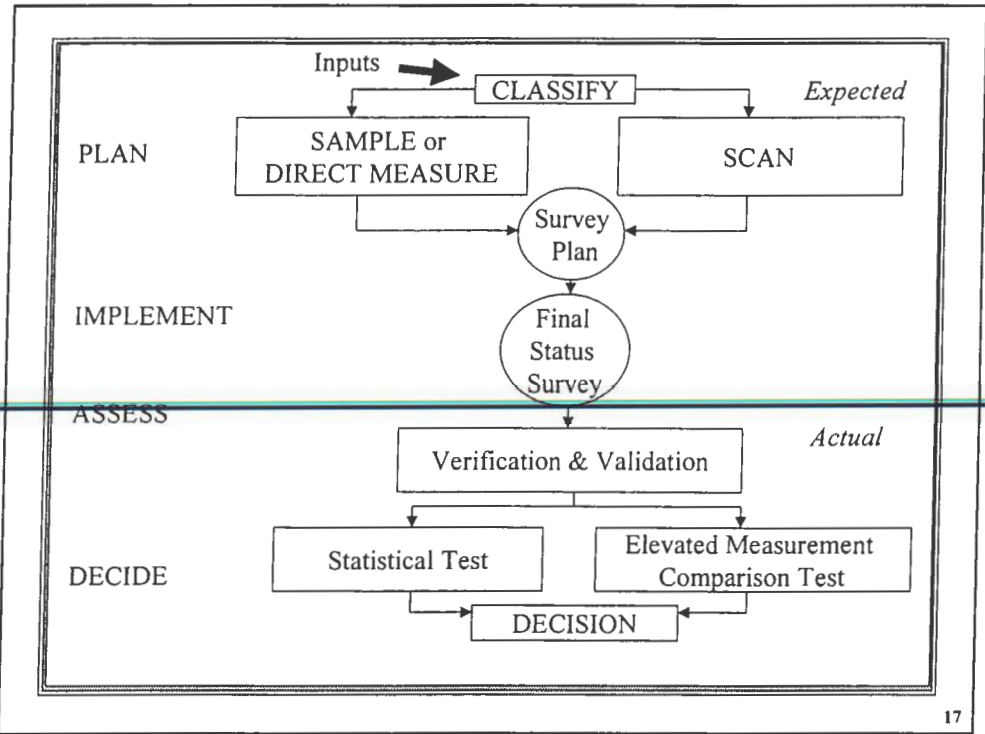
Enough, but not too many.

Decision Errors

Failing a clean site

Passing a dirty site

16



17

Establish Dose Based Release Criteria

Derived Concentration Guideline Level **DCGL**

Dose converted to a *measurable quantity* using exposure pathway models

Levels presented in terms of ambient radiation, surface activity levels, or soil activity concentrations

18

Establish Survey Units based on Contamination Potential

Survey Unit Classification

Class Class 2 Class 3

Purpose

Not all areas of the site will have the same potential for residual contamination

so not all areas require the same level of survey coverage to achieve an acceptable level of confidence that the site satisfies the established release criteria

Final Status Surveys:

Relationship to Contamination Potential

Class 3

No Significant Contamination Expected

“Unaffected”

Class 2

No Contamination in excess of the DCGL is expected

Class 1

Contamination known to be present

Isolated spots in excess of DCGL possible

May have been Remediated

“Affected”

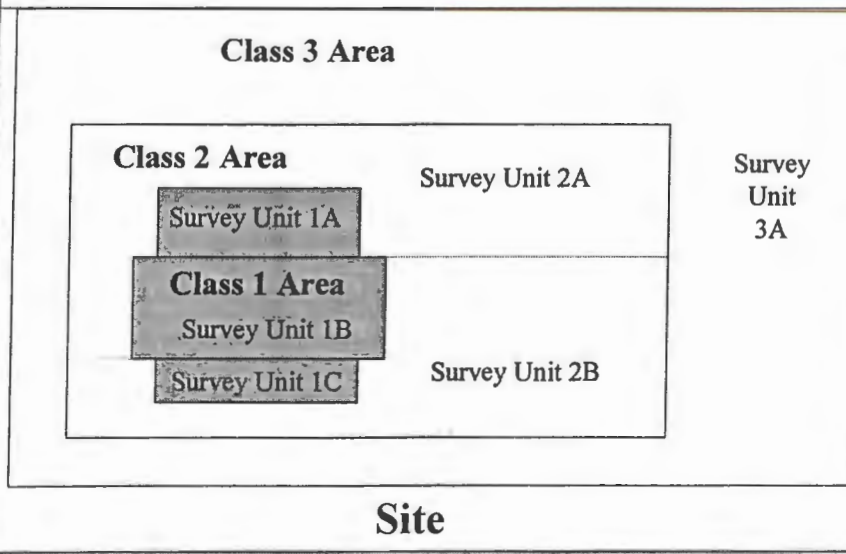
Final Status Surveys:

Relationship to Contamination Potential

<u>Class 3</u>	<u>Class 2</u>	<u>Class 1</u>
•Random Sample	•Systematic Sampling Grid	•Systematic Sampling Grid
•Size determined by statistical tests	•Size determined by statistical tests	•Size determined by statistical tests and potential for elevated areas
•10% Scans	•10% - 100% Scans	•100% Scans
•Any size Area	•Area about -10,000 m ² outside -1,000 m ² inside	•Area about -2,000 m ² outside -100 m ² inside

21

MARSSIM Graded Approach



22

Flexible, Integrated Scanning and Sampling

Integrated Survey Design:

Direct Measurements

field measurements or samples on a grid to find the average level of contamination

together with

Scanning

to find *Elevated Areas*

23

Survey Design:

The number of measurements required is determined by

- the accuracy desired in the *statistical hypothesis tests* and
- the need to discover any elevated areas

24

Nonparametric Statistics

are used along with an

Elevated Measurement Comparison

to flag potential failures in the decommissioning process over elevated areas within a survey unit.

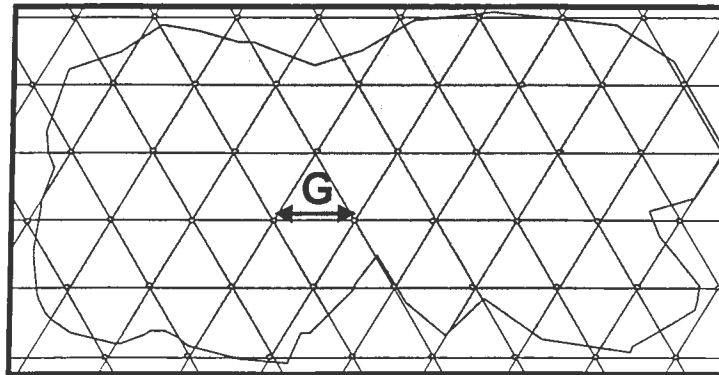
How big is an elevated area?

What concentration is considered elevated?

An elevated area is one that has a concentration which results in a dose exceeding the release criterion.

25

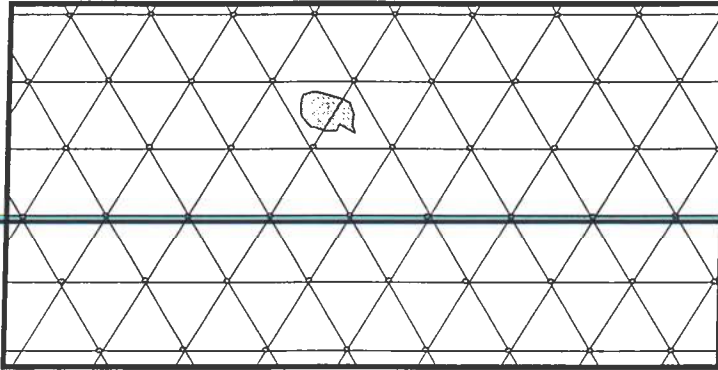
Statistics test over the entire survey unit...



...using data taken on a random start grid.

26

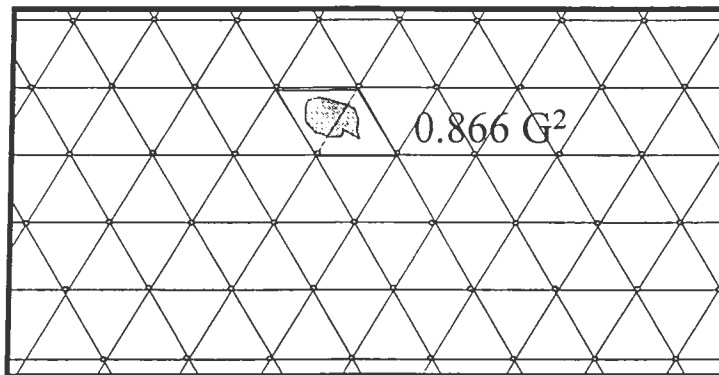
EMC is used to detect small areas...



...primarily by *scanning* methods.

27

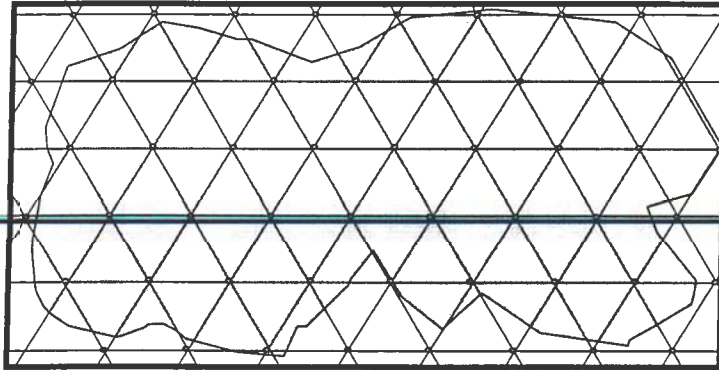
The largest area with any real chance to be missed by the grid ...



...is the grid area defined by neighboring sample points.

28

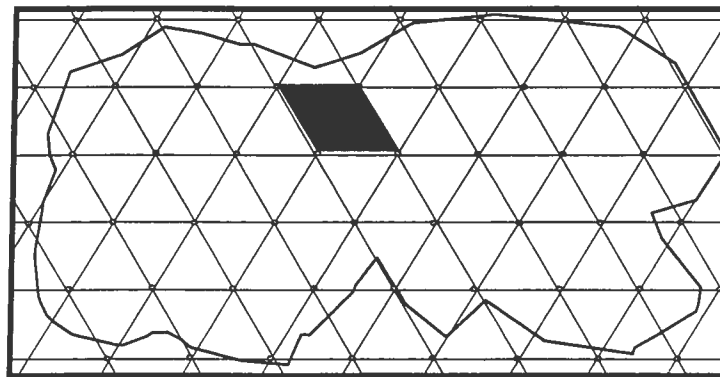
If the concentration equals the DCGL over the entire survey unit...



... the resulting dose is 25 mrem/y.

29

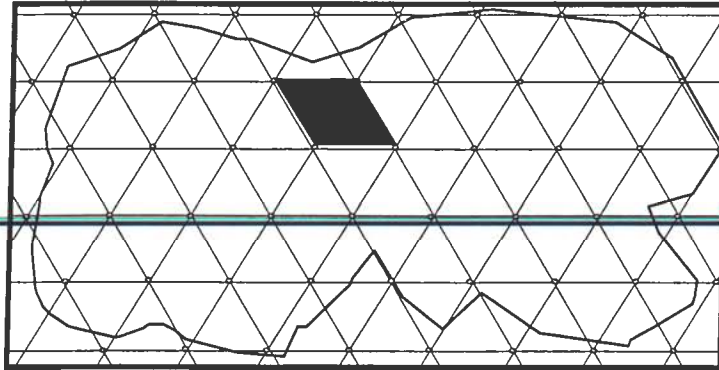
If the residual radioactivity is confined to a smaller area...



... the concentration must be *higher* to give 25 mrem/y.

30

The concentration needed in the grid area to give 25 mrem/y is the $DCGL_{EMC}$



$$DCGL_{EMC} = (\text{Area Factor}) \times (DCGL_W)$$

31

Potential Elevated Areas

The scanning MDC must be low enough to detect a concentration of $DCGL_{EMC}$.

If scanning $MDC > DCGL_{EMC}$, *reduce* the distance between sample points, G , so that the *area* $0.866G^2$ is *small* enough and the *area factor* is *large* enough that

$$\text{scan MDC} < DCGL_{EMC}$$

$$= (\text{Area Factor}) \text{ times } (DCGL_W)$$

32

Implementation

The design developed during the planning phase is documented in work plans.

The MARSSIM survey is carried out in accordance with the work plans and pertinent quality assurance guidance.

33

Assessment

The assessment phase includes verification and validation of the survey results combined with an assessment of the quality and the quantity of the data.

Upon determining that the data is satisfactory, the decision criteria can be applied to the data.

34

Decision

The survey and scanning data are compared to the DCGLw and DCGLem.

If the data and scans show within the predetermined statistical confidence that the DCGLw and DCGLem have been met, the hypothesis that the site is contaminated is proved to be false and the survey unit can be released.

If it cannot be shown within the predetermined statistical confidence that the DCGLw and DCGLem have been met, additional data or remedial action are required.

35

Questions?



36

40

MINUTES
RESTORATION ADVISORY BOARD
November 22, 2000 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vazquez, Environmental Protection Agency
Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Karen Tackett, Community Co-Chair, Brian
Dombrowski, Frank Ives, Patricia Jones,
Ken Riemer, Dave Schneider, Jan Schneider,
Fred Swain,

Community RAB Members Not Present:

Dave Wagner, (excused), Bob McCann, (excused),
Jeffrey Beall (excused), Russell Miller, Frankie
Young-Long, Henry Van Ness

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering
Thomas Enroth, U.S. Army Corps of Engineers,
New York District
Nancy Williamson, Recording Secretary

2. Mr. Absolom introduced Mr. Glenn Cooke, Seneca County Planning and Development Director. Mr. Cooke explained the history of the Local Reuse Authority (LRA) which was set up in 1995 to deal with the Department of Defense for the Base Realignment and Closure (BRAC) of Seneca Army Depot. After several permutations, the LRA came under the governance of the Industrial Development Agency.

Seneca Army Depot was set up into parcels that could be marketed to potential users. IDA was looking for users with good business plans, sound financial situations and who were self-insured so as to avoid making IDA and Seneca County liable if they failed.

The **Troop Area** eventually went to KidsPeace, a facility for at-risk kids that put up a \$8 million bond and have invested \$12 million thus far. People were hired and children are being brought in as fast as they can be accommodated.

For the **Housing Area**, IDA wanted a group that would improve the county tax base. Aspen put up \$2 million and has invested at least \$2 million more.

~~The **Prison** was located at the depot (rather than at Sampson) bringing in 638 jobs and providing local spin off. State dollars were leveraged to fix water and sewer thus helping the town of Romulus. NYS Department of Corrections put in lots of money in water lines, new water plant and water tower.~~

The **Coast Guard** is staying for the time being.

The biggest concern for the **Warehouse Area** was that IDA did not want to become a landlord. After much negotiating, The Advantage Group was chosen for this area. It has filled 600,000 square feet so far. Eighteen buildings have been turned over to them to date, with more pending. Their plan is to employ 200 people. They are an asset management firm; they also have a small call center.

The **Airfield** did not draw any interest for use as an airfield. The existing airfield in Seneca Falls has the FAA license. If the depot airfield were used as such, the license would transfer rather than allowing both to be licensed. Instead, the State Police will use the airfield as a training site and Emergency Management will have a fire tower there.

A new **Water/Sewer District** has been formed. The turnover of the utilities is pending.

The **Conservation Area** is now being investigated for unexploded ordnance.

Q: Rumor has it that there is interest in putting a Pay-to-Hunt area and/or a gravel pit in this area. Can you verify this?

A: Negotiations with potential users are kept confidential until a deal is about to be made. Once a user is chosen there is a meeting for public approval. However, selection will not go against the Army's wishes.

Once the property transfers, zoning laws will prevail. While still under Army control, there will be land-use restrictions on certain confined areas. These restricted areas will be as small as possible to free up available land.

Comment: There is State and Federal oversight on site remediation.

Comment: Wouldn't it make more sense to deed areas separately on areas with different restrictions?

A: The cost would be high to IDA to have separate deeds requiring separate surveys. It can certainly be considered. It might provide better control.

IDA is conservative on environmental issues. It is essential that the re-user have public approval.

There is a due-diligence period between IDA and the potential re-user. This is a period when both parties put in time and money to come up with a viable proposal. The re-user must present a plan and show financial stability in detail. IDA will indicate what it will provide, such as equipment.

Q: On a TAG tour a TAG employee was asked what areas were restricted and couldn't tell the questioner. Is TAG being told what areas are off-limits? Are they telling their employees?

A: The Army has regular meetings with TAG officials. They are given maps and told specifically where the restricted areas are. We will revisit the issue with TAG at our next meeting. The Army will be putting up signs.

If TAG doesn't follow these lease restrictions, the lease can be broken. The Army cannot afford to fence areas. It could require the lessee to fence off certain areas.

TAG is an Asset Management Firm. They take consignment equipment, store it, rehab it and sell or return it to the original source. Seneca's warehouses are archaic, but TAG did not need modern facilities. So, it was a good match.

IDA spent 4 months researching, visiting and examining TAG. TAG put \$100,000 down on a \$500,000 lease. They have invested \$300,000 so far.

The equipment given to TAG was strategic--to keep them operational. The excess equipment will be sold. IDA can sell equipment not used for a re-user and put the money back into either IDA for reuse management or the property to enhance its attractiveness to a potential re-user.

IDA is in partnership with the new Seneca County Water-Sewer District #1, retaining ownership of equipment not excess or sold off.

Comment: Sites in the PID warehouse area don't have acute risk. However, escorts are needed for uninformed visitors.

Comment: We only lease the buildings, not the property. TAG can't expand the buildings. The lessee can only be on the roads and in the leased buildings.

The gate guards at Seneca Army Depot work for Morris Security not TAG. There's no conflict of interest. The guard calls the office where the visitor is going for permission to let them in.

To summarize, confidentiality is very important to IDA's process of obtaining re-users. IDA can let the RAB know when lease agreements are ready for the public portion of the process. IDA meets the 1st Thursday of

each month at Noon. The RAB can communicate their concerns to the IDA and to TAG. Communication is key.

Mr. Cooke congratulated the RAB members on their hard work and dedication over the years.

3. After a short break, Steve Absolom opened the meeting for general discussion.

He reiterated last month's concerns about our roles and ~~responsibilities as RAB members. The RAB charter had~~ been mailed to everyone. RAB members are stakeholders in the clean up process. Each can give his opinion, which must be taken into consideration. For example, the RAB recommendation to speed up the process at the Ash Landfill resulted in three trenches instead of one and a \$200,000 increase over the original proposal.

RAB members represent the community. They take information to their constituents and bring comments in to the board. We deal with controversy by keeping the lines of communication open. Per the charter, we are involved in the clean up. We have to know what reuse is, but cannot be involved in the reuse decision.

Steve introduced Karen Tackett, Community Co-Chair, who went to the Environmental Stakeholders Forum in St. Louis recently. RAB members from all over the country attended, as well as members of the armed forces, potential contractors and members of regulatory agencies.

Some institutions have the same type RAB as we have. Some communities had advisory boards before DOD was involved. Our RAB has a good working relationship. That is not the norm. Attendees are interested in making a national RAB. At present, there is a national caucus--a lobby. (Karen has their phone numbers.)

The Forum involved a lot of public relations. Communication is the biggest issue. Another issue is not to have land-use restrictions because they are not enforceable.

A reminder--RAB's can get TAP grant money to finance research or hire experts to deal with the Army or regulatory agencies. The RAB must put any grant proposal together. Expense comes out of the clean-up budget.

Our RAB is functional. Many are not. Other RAB's have difficulty getting along with the military.

Mr. Absolom thanked Karen for attending the forum. Pat Jones thanked her for taking her personal time to attend for the benefit of the RAB.

4. Steve Absolom summarized the RAB's focus and tasks. He then asked for questions.

Comment: We need a briefing from Mike Duchesneau on the Intertek lab problem.

Mr. Duchesneau explained the history of Intertek Laboratory in Burlington, Vermont, and its purchase of a satellite lab in Richardson, Texas. Parsons used the Burlington Intertek lab, predominantly. If samples were to be sent to Richardson, Burlington would get Parsons' approval. The Richardson, TX, lab is the one with the problems. Parsons has had to have re-testing of the tests done there. The only Seneca tests had done in Richardson were those monitoring the ash landfill for absorptive property of the soil. Forty to fifty tests were effected. Damage to work done at Seneca by the Richardson, TX, lab is very minimal. Reports can be provided if requested.

The Intertek Laboratory in Richardson, TX, falsified data. Chemists doing the work were not following the rules by letting the machines do the work, but were overriding them. People were fired and indicted for criminal acts. The lab went bankrupt. The EPA did not allow data to be in compliance. Parsons incurred millions of dollars of damage; other companies were damaged, as well.

5. The meeting was adjourned at approximately 8:45 p.m. The next RAB meeting with both government and community members, will be on January 16, 2001, at 7:00 p.m. at the Romulus Town Hall in Willard.

Respectfully submitted,



Enclosure

NANCY WILLIAMSON

Recording Secretary

APPROVED AS SUBMITTED:



STEPHEN M. ABSOLOM

U.S. Army Co-Chair



Karen Tackett

Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
January 16, 2001 MEETING

1. ATTENDANCE:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental
Coordinator, SEDA/Army Co-Chair
Julio Vazquez, Environmental Protection Agency

Community RAB Members Present:

Bob McCann, Ken Riemer, Dave Schneider,
Jan Schneider, Fred Swain, Henry Van Ness

Community RAB Members Not Present:

Karen Tackett, Community Co-Chair, Brian
Dombrowski (excused), Dan Geraghty, NYS Department
of Health, Frank Ives, Patricia Jones (excused),
Dave Wagner (excused), Jeffrey Beall (excused),
Russell Miller, Frankie Young-Long

Environmental Support Personnel Present:

Michael Duchesneau, Parsons Engineering; Charles
Lechner, AEC; MAJ David Sheets, Corps of
Engineers, Huntsville; Kevin Healy, Corps of
Engineers, Huntsville; Clayton Kim, AEC; Mike
Kelly, AEC; Neil Chaffie, Orid Gaz; Thomas Enroth,
U.S. Army Corps of Engineers, New York District;
Nancy Williamson, Recording Secretary

2. Mr. Absolom called the meeting to order at 7:06 P.M.
All attendees were asked to introduce themselves.
Request for changes to the November minutes elicited
one change to Attendance.
3. The agenda for the evening consisted of: a. the
Status of Projects and b. an update by Mr. Duchesneau
on the Feasibility of Using the Former Deactivation
Furnace as a Soil Treatment Unit.
- a. Some highlights on the Status of Projects:
- Ash Landfill** - awaiting approval of Draft PRAP, 30
August 1998.

Building 612 Complex - (by prison site). Expecting EPA comments. SEAD-60 soil used in DEAC. DEC has concern on ground water at that site.

Pitchblende Storage - going back to reevaluate site. Have all reports for our conclusions. MARSSIM Workshop was the stimulus for locating all information.

Ammo Sites - **45** (Open Detonation), **57** (EOD Training Facility) and **46** (Small Arms Range) - field work is done for UXO and chemical contamination. Data is not in yet. Awaiting results.

There are lots of projects and progress is slow. There was discussion at the BRAC Clean-up Team (BCT) meeting about progressing with removal actions while documents are being prepared. We hope to report soon on removal plans/actions. The longer we wait the harder it will be to get funding. The EPA and the State don't always agree which slows up the process.

Comment: The Schedule of Projects is good and should be put out periodically with updates and with a column for action dates.

Question: Are we getting close to the end of investigation?

A: SEAD-48 is the last. Several sites need investigation. The Scrap Yard (DRMO) may become a site. Lots of things are underway and need to come to closure.

Question: At what stage are we in the Ammo Area for UXO?

A: The fieldwork is done. Need to assess data. Should have results in March.

Question: What about Row D drainage ditch?

A: Nothing found which is good. They've looked at all sites where ordnance was, documented any findings and exploded any unexploded ordnance found.

Question: What training areas were there?

A: Two small-arms ranges and a grenade range.

b. Michael Duchesneau, Parsons Engineering, was introduced by Mr. Absolom.

Mr. Duchesneau gave an update on the Low Temperature Thermal Desorption (LTTD) process. He described the goal of reusing the Deactivation (DEAC) Furnace to, cost effectively, treat contaminated soils.

Using the DEAC Furnace seemed a good way to reuse equipment and to avoid off-post treatment and disposal. Savings were expected in transportation and personnel.

Mr. Dushesneau gave a history of the DEAC Furnace as an ammunition destruction facility. He explained how it was adapted to clean soils of petroleum and chemical substances and the economics involved. The Demonstration Study was described. The results of the test showed that the parameters tested for were all successful.

The economic analysis of the DEAC, however, proved that use of the existing furnace was not cost effective when taking into account initial outlay of equipment (\$450K) and operating costs (\$50/ton) compared to off-site disposal (\$26-\$40/ton).

Comment: The throughput rate at the Ash Landfill is 20 tons. However, there is lots of preparation and down time.

Question: The dirt can be moved across roads but are the levels where they should be?

Response: Regulatory levels are based on law. Numbers are set for a purpose. The DEC does not have the authority to leave dirt with higher levels at Seneca with grass cover even with restricted use.

Comment: If disposed of in landfills, the dirt is used as daily cover avoiding the purchase of new dirt. It fills the requirement as landfill.

Comment: Dirt from the Open Burning Grounds could not be used for daily cover. There are some hot spots in the Ash Landfill that will be removed and other areas that will just be covered. The approval process is lengthy.

Question: What does a cubic yard of dirt cost? **A:** \$10-15 per yard. **Q:** Loam? **A:** \$25-\$30 p/yard. **Q:** Common fill? **A:** \$5-6 a ton. Gravel is a \$3 per cubic yard.

Question: Is there any contaminated ground that a landfill could not take that the LTTD could?

A: No.

Question: What is the problem of fences down and white deer getting out?

A: KidsPeace chose to take down some fencing. There are whites up there that can now go in and out. There are a few deer in the Prison area that could walk in and out the Entrance on Rt 96. The majority of the deer are inside the fence the Army is maintaining until transfer. There are 150-200 white deer at present.

Comment: There was a suggestion to meet every 2 months. A motion was made and seconded to meet next in March rather than February.

4. Mr. Absolom asked for suggestions for topics for the next meeting. Possibilities include Eco study update but no recommendations and UXO issues and findings (which sites to look at).

5. The meeting was adjourned at approximately 8:30 p.m. The next RAB meeting with both government and community members, will be on March 20, 2001, at 7:00 p.m. at the Romulus Town Hall in Willard.

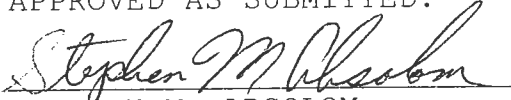
Respectfully submitted,



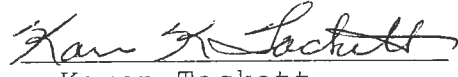
Enclosure

NANCY WILLIAMSON
Recording Secretary


APPROVED AS SUBMITTED:



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



Karen Tackett
Community Co-Chair



*Presentation to the RAB
January 16, 2001*

*Project Update
Feasibility of Using
Former Deactivation Furnace as a
Soil Treatment Unit*

Michael Duchesneau P.E.



Topics for Tonight's Presentations

- *Background and Approach*
- *Testing Results*
- *Economic Analysis*
- *Recommendations*

Basis of Project

Can the Deactivation Furnace be reused to, cost effectively, treat soils that are contaminated with volatile and semi-volatile organic compounds ?

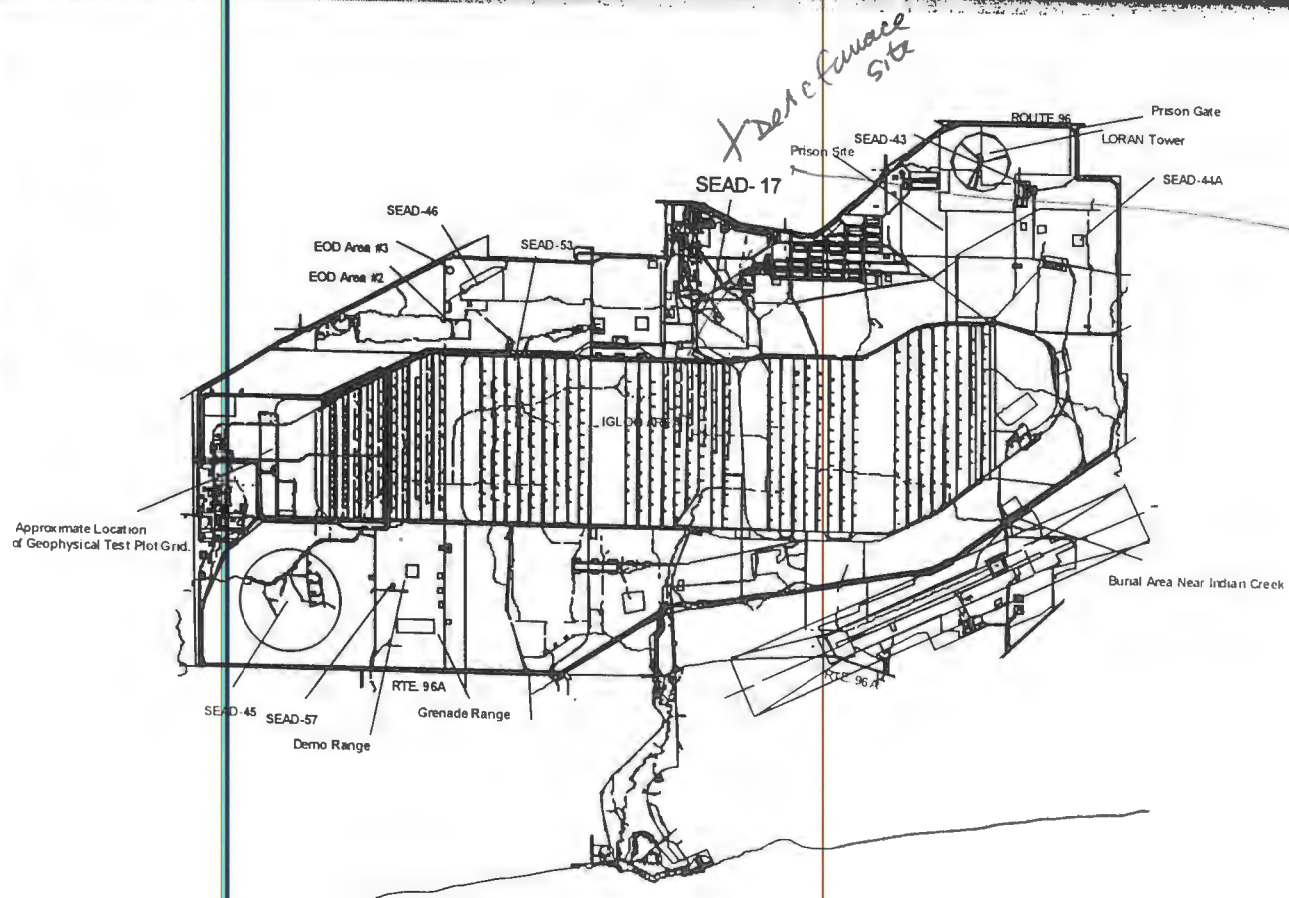
organic & petroleum materials.

Seemed good way to reuse eq. & not having to take off site

Why Reuse the Deactivation Furnace?

- Onsite Treatment and Reuse of Soil vs. Offsite Treatment / Disposal
- Reuse of Existing Inactive Equipment
- Potential Cost Savings
 - No Mobilization Costs (1/2 to 1 Day semi trucks)
 - No Off-site Transportation or Disposal Costs
 - Operated by Depot Personnel *experienced & could work elsewhere on depot during down times.*
- Efficient to Treat Limited Capacity Sites

LTTD Location/ SEAD-17



centrally located to other contam sites

Deactivation Furnace Background

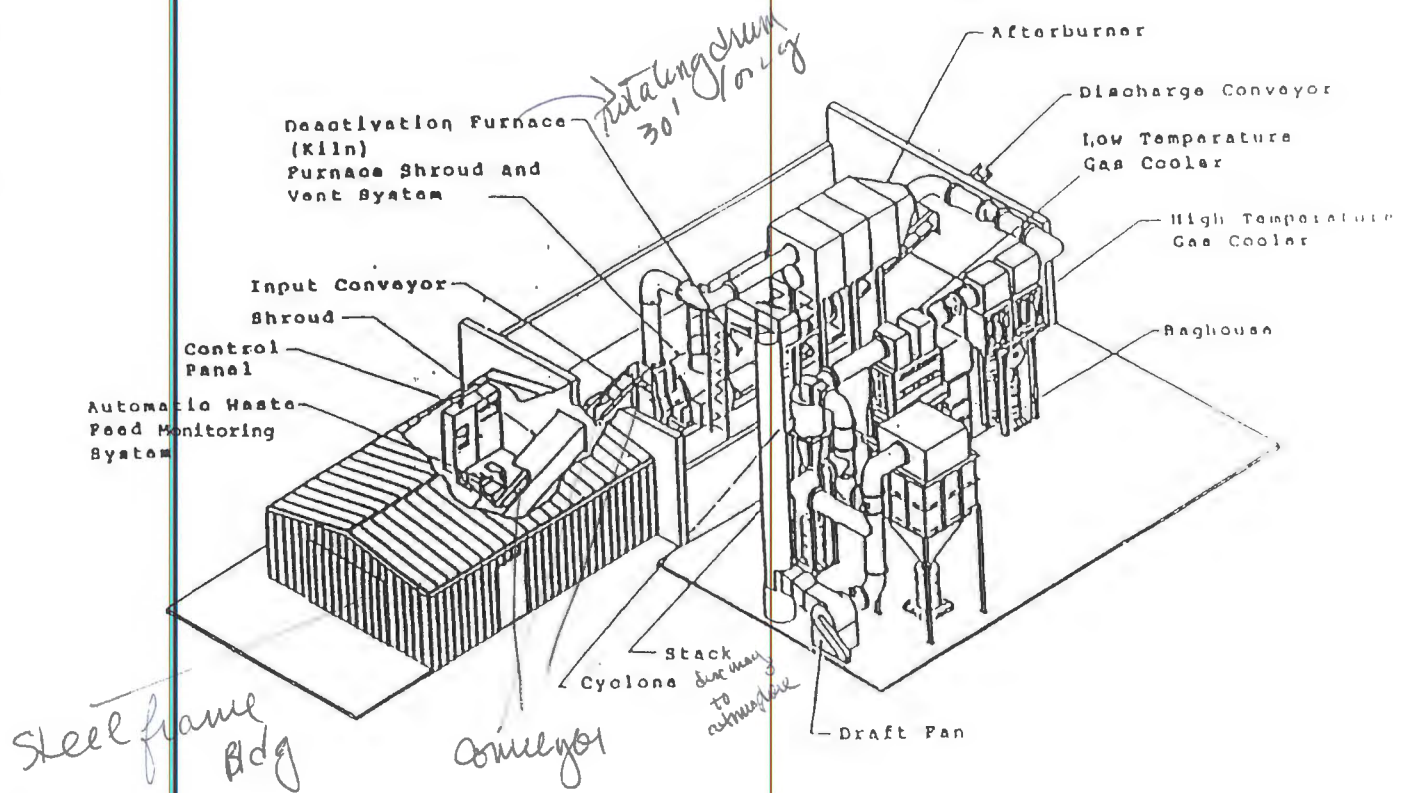
- Previously Operated as an Ammunition Destruction Facility from late 1970s to 1989
another ASEA 16 operated prior back to mid-60's
- **APE** Equipment Upgraded in 1978 & 1989
ammunition production equip
- Inactive since 1989 Pending RCRA Permit Approval as a Hazardous Waste (Munitions) Treatment Unit
- RCRA Permit withdrawn when Depot ^{went into closure} Closed ⁱⁿ 1995
- Equipment to be Reused at Other Facility
sitting idle at SETDA.

Deactivation Furnace

APE 1236

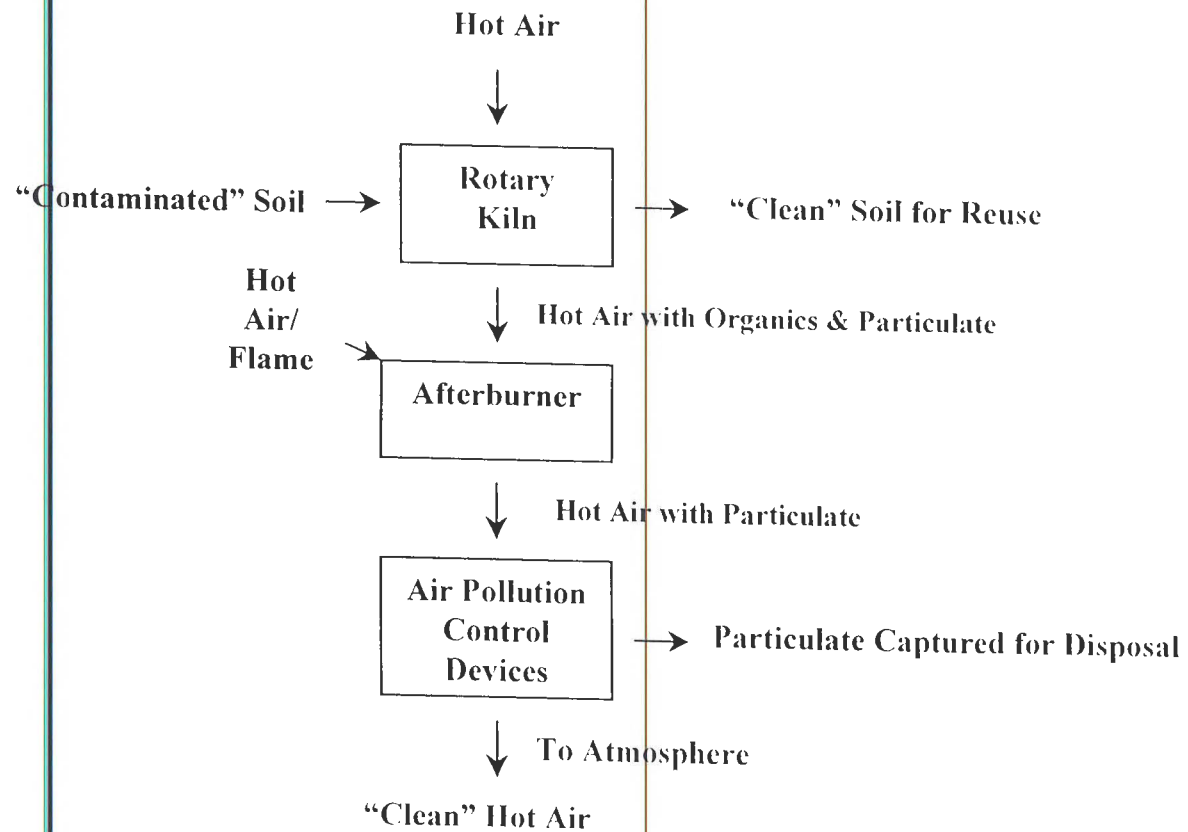
to around
country

Deac small
units

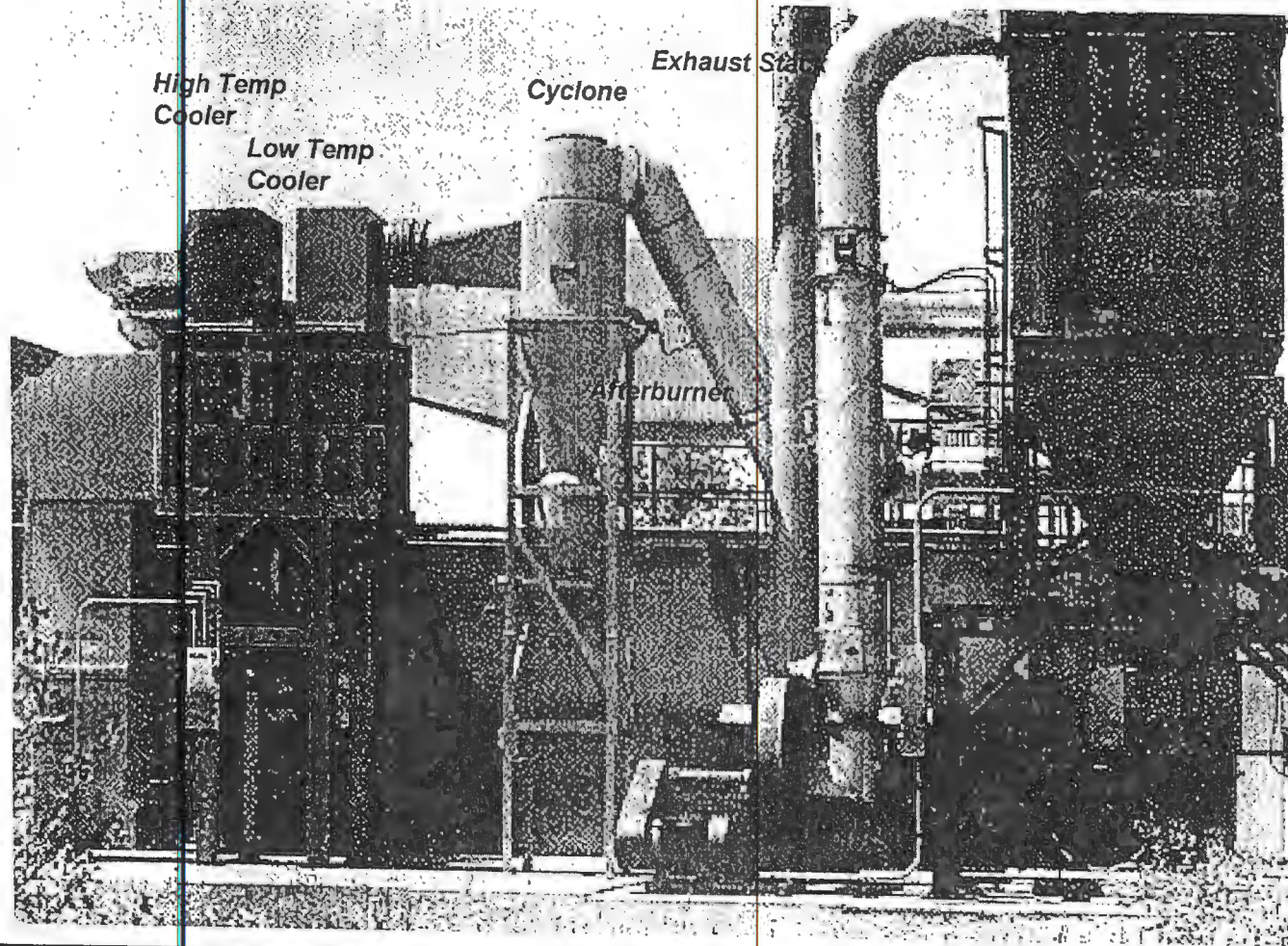


AC SK 02-12

Process Flow Diagram



Air Pollution Control Equipment



Aspects of Furnace to be Evaluated

- **Soil Treatment**

- **Throughput**

how much soil can we put thru it + how fast

- **Contaminant Removal Efficiency**

- **Exit Soil Temperatures**

enough heat to decontaminate

- **Exhaust Gas Emissions**

- **Upgrade Requirements**

- **Mechanical Systems**

- **Operational Control Systems**

- **Economics**

how much \$ to put in

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sampled soil going in & soil going out-

gas & #2 fuel

Demonstration Study

Test Soil Characteristics

- Small Fuel Oil Spill at SEAD-60
- Primarily TPH, PAHs & Metals
 - TPH - Average under 7,000 ppm
 - PAHs - Average under 5-10 ppm
 - Low VOCs - Average under 100 ppb

not a lot of
volatiles

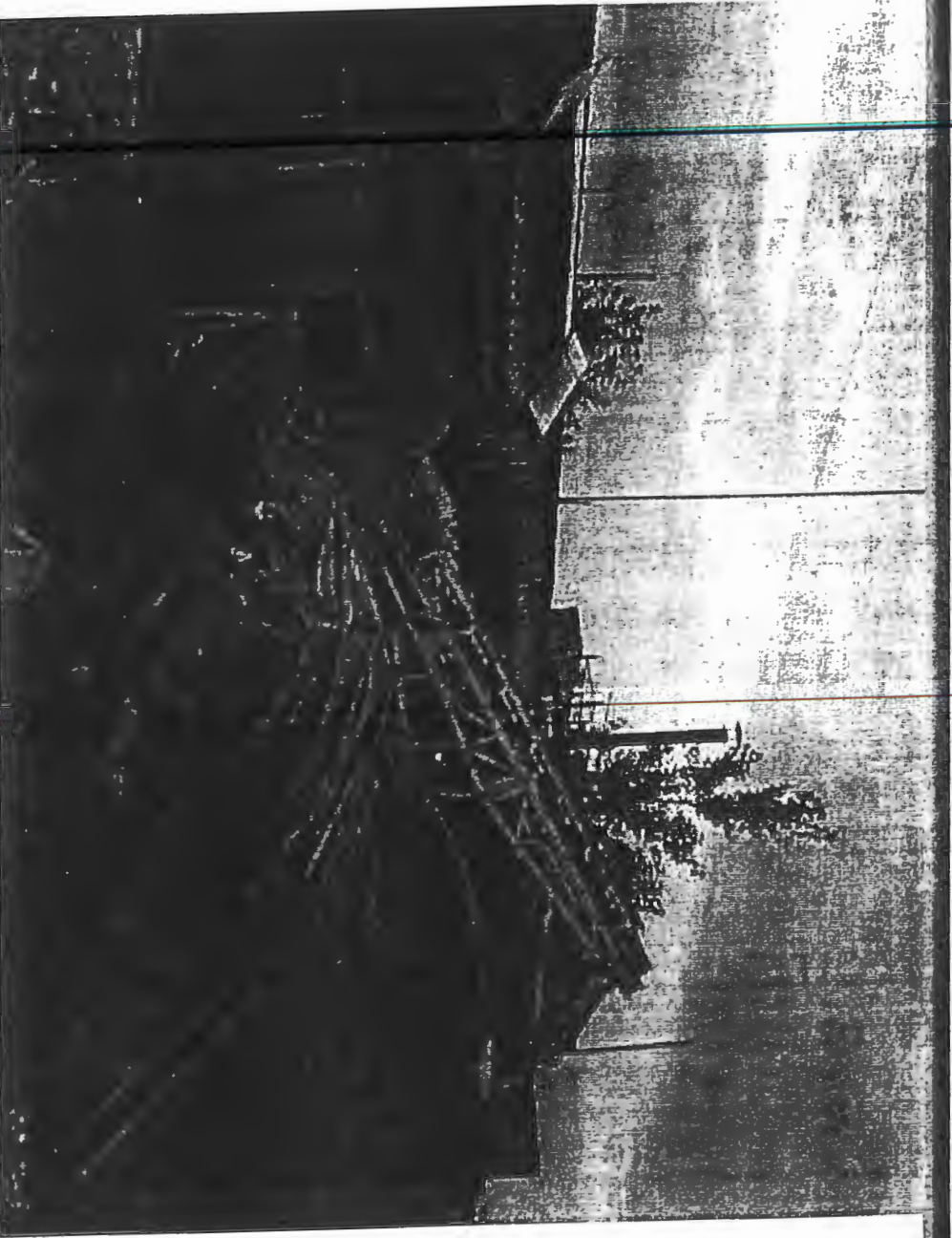
If we could get TPH + PAH removed + soil temp
to where we wanted, should try it -

Demonstration Study

Pre-Testing Preparation

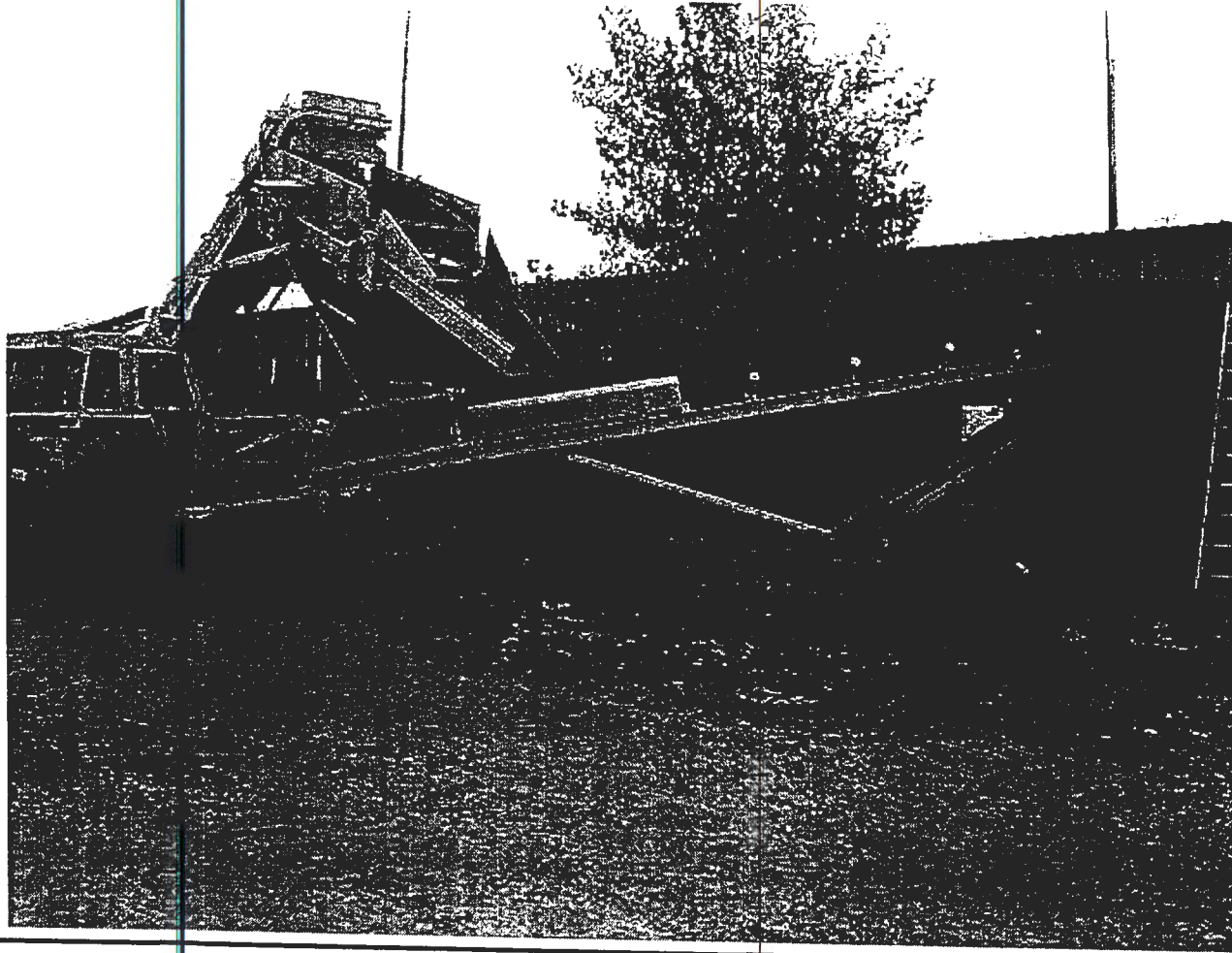
- *Mechanical Systems*
 - *Feed and Exit Conveyors (Temporary)*
 - *Burners Upgrade*
 - *Kiln Rotational System*
- *Electrical Control Systems*
 - *Burners (Kiln and Secondary Combustor)*
 - *Temperature*
 - *Flow*
 - *Pressure*
- *Soil Stockpile*

Screening Soil Feed Equipment



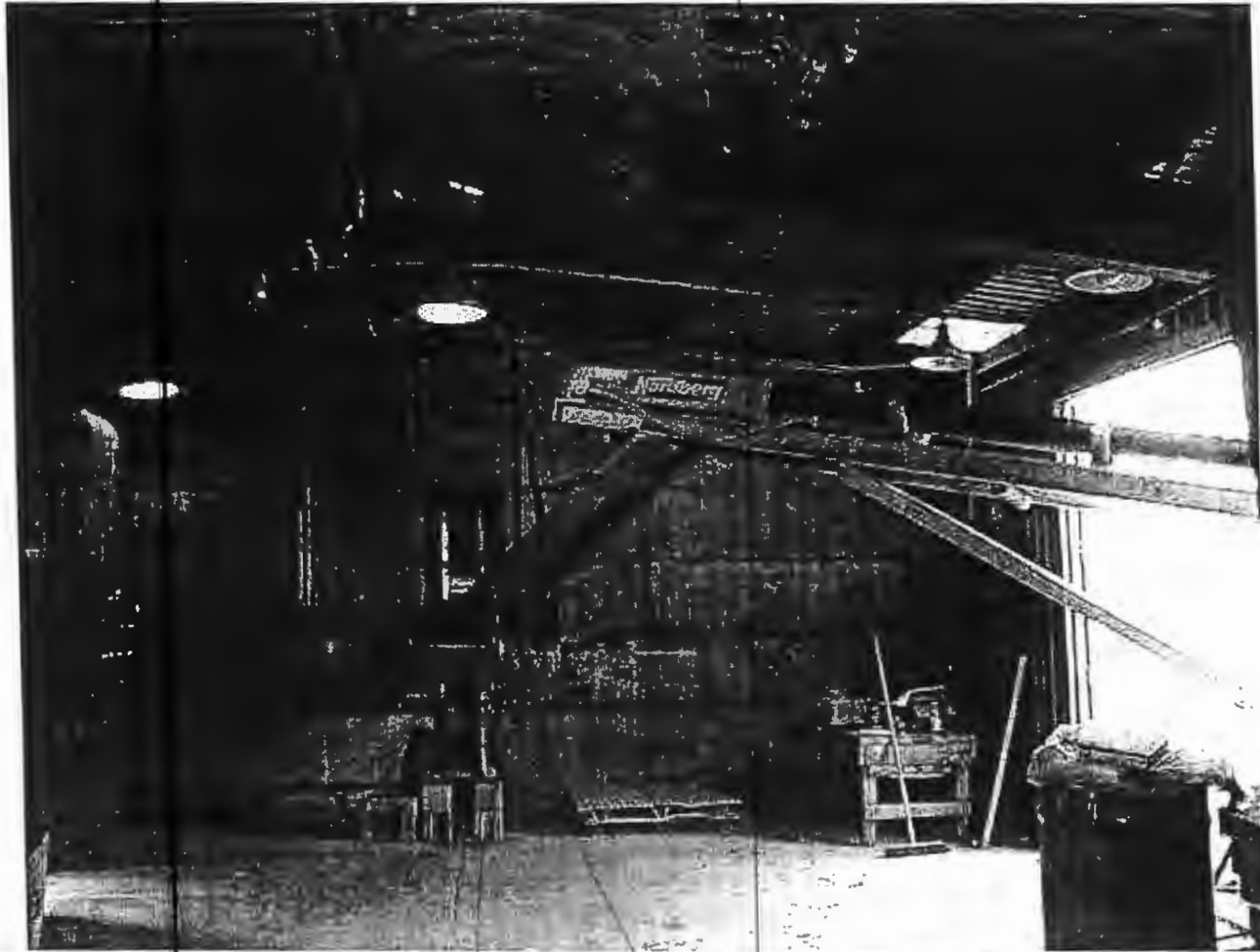
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Exterior Soil Feed Equipment



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Interior Soil Feed Equipment



conveyor

to chute - hopper.

Demonstration Study

Operational Details

- *Testing Started 8/30 & 9/1 (2 x 2T/hr)*
- *Unit Inoperable due to Burner Control Failure*
(fixed burner)
- *Testing Restarted and Completed on 9/20 - 9/23 (1x2T/hr, 3x5T/hr)*

Demonstration Study

Operational Test Results

- Feed Rates of 2 & 5 Tons/hr Attainable
- Soil Exit Temperature at 600° F *new good higher than needed.*
- Soil Kiln Residence Time 15 Minutes *how long in kiln* *good time*
- Afterburner at 1600° F *operating efficiently at 1600° F. temp to destroy gases*
- Low Particulates Observed in Baghouse *good*

upper limit achieved would be very positive success

Demonstration Study

Soil Treatment Test Results

- Soil Treatment (Soil In vs. Soil Out)
 - Removals at 5-Ton/hr as good as 2-Ton/hr *very similar efficient*
 - Numerous Compounds were Non-detectable *goal*
 - TPH Removal (68% to 90%) *PAH w/hi budget + lower removal rate*
 - PAH Removal (70% to 90%) *as good as commercial unit*
 - No PCBs Detected
 - Low Dioxin Isomers Detected (0.2 to 144 ppt) *trillion*

*If process 2x - probably all 90% or better
Goal - identified in NYS TAGUMS (97?)*

Demonstration Study Stack Gas Test Results

- Stack Exhaust Gas

- VOCs - (Non-detectable to Low Levels; VOCs Detected in Blank)

- * • Particulates, ^{metals} Semi-Volatiles, HCl - (Samples not Submitted for Analysis)

- Continuous Emission Monitors (CEMs)

- good* • THC - measured < 2 ppm @ 7% O₂ as Propane

- good* • CO - measured < 3 ppm @ 7% O₂

- VG* • O₂ - (12.5 to 14.25%) *good combustion + plenty O₂ for combustion*

- normal range* • CO₂ - (5.1 to 6.6%)

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** hole in project because ^{this part} not submitted.*

*opacity of stack
no visible*

Economic Analysis

- **Capital Costs** *initial outlay*
 - \$200,000 Screen, Input/Exit Conveyors
 - \$50,000 CEM Equipment
 - \$25,000 Controls
 - \$25,000 Soil Handling Equipment *(budget)*
 - \$150,000 Trial Burn Test
- **Operating Costs** *\$150K*
 - \$50/ton *(also vary by fuel cost)
Labor + incidental equip.*
- **Off-site Disposal Cost**
 - \$26 - \$40/ton

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If proceed, identify more diff site, repeat test, then probably get good results. Parsons will make good on test (i.e.).

Conclusions

- *Deactivation Furnace can Treat VOC/Petroleum Contaminated Soils up to 5 Tons/hr.*
- *Not Cost Effective Compared to Off-Site Disposal*

*Can do
but
too costly*