465-10

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-9 Old Scrap Wood Pile at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. The following sites are included with SEAD-9: SEADs 1, 2, 5, 13, 16, 17, 27, 39,40,41,42,44A, 44B,52,56,59,62,64A,64B,64C,64D,66,67,71,121C,121I,122B and 122E. Each site has a Land Use Control which requires annual reporting and documentation. The RFP W91DY-08-D-0003 Task Order 0008 (Source 3) was used to estimate annual monitoring cost and year reviews. Monitoring cost is provided annually for 24 years as indicated in Task 3, and annual monitoring is combined in optional task number 28 for six events of 5- year reviews.

Site: SEAD-9 Old Scrap Wood Pile. This AOC combines and includes all AOCs where Land Use Controls that restrict use of the property and access to the ground water and limit excavation are the only remaining activity (Sources 1, 2, and 4 through 6). Exit strategy is to manage LUCs until soil and ground water meet clean up criteria. Landfill covers and excavation restrictions will require LUC management in perpetuity.

Source:
1. Final ROD For Seventeen SWMUs Requiring Institutional Controls, SEADs-13,39,40,43/56/69,44A,44B,52,62,64B,64C,64D,67,122B,122E; March 2007.
2. Final ROD Five Former SWMUs SEADs-1, 2, 5, 24 and 48, April 2009.
3. RFP W91DY-08-D-0003 task Order 0008 LTM OB/FTA, annual evaluations
4. Final ROD for sites requiring Institutional Controls in Planned Industrial/Office Development or Warehousing Area, July 2004
5. Final ROD for DRMO Yard (SEAD-121C) and Rumored Cosmoline Oil Disposal Area (SEAD-121I), June 2008
6. Final ROD Fill Area West of BLDG 135 (SEAD 59) and the Alleged Paint Disposal Area (SEAD 71)
7. RACER Cost to Owner Guidance
8. Final Record of Decision, Ash Landfill, January 2005
9. Final Record of Decision SEAD-16 and SEAD-17, March 2006.
10. ACSIM Data Call Memo, 05 March 2012.

NOTE:
1. SEAD-1, SEAD-2, SEAD-5 and SEAD-67 have been included with this site for LTM.
2. SEAD 121C and SEAD 121I have been included with this site for LTM.
3. SEAD 59 and SEAD 71 have been included with this site for LTM.

4. SEAD 006 Ash Landfill is included in this site for LUC management and reporting.
5. SEAD-16 and SEAD-17 are included in this site for LUC management and reporting.

Owner Cost Assumptions:
Contract Activity and S&A costs are included for all onsite efforts. Cost as established by RACER markup guidance.

Cost Summary SEAD-9

LTM

Land Use Controls (Source 3)
To monitor environmental easement for 8 yrs.
Escalate to FY 12
$59,224.25 x 1.0354 = 61,320.79
$61,320.79 x 24 years = $1,471,698.96
(rounded to 1,471,699) $1,471,699

Five-year Reviews (Source 3)
Six 5-year review events at $96,592.75 each
Escalate to FY 12
$96,592.75 x 1.0354 = $100,012.13
6 Events x 100,012.13 = $600,072.78 (rounded to 600,073) $600,073

Owner Support (Source 7):
(LUC + 5 year review) x 0.11
($1,471,699 + $600,073) x 0.11 $227,895

Total Site Cost
$1,471,699 + $600,073+ $227,895 $2,299,667

Material Change: Yes

Reason: Change in LTM programming from 2 five-year reviews to 30 years with 6 reviews.

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012 Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012 Date

FINAL
RECORD OF DECISION
FOR

Seventeen No Action/No Further Action SWMUs Requiring Land Use Controls

(SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E)

Source 1 Site

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA 35816

Prepared By:

PARSONS
150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0026
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

March 2007

1.0 DECLARATION OF THE RECORD OF DECISION

Site Names and Location

Seneca Army Depot Activity
CERCLIS ID# NY0213820830
New York Site ID# 8-50-0006
Romulus, Seneca County, New York

This Record of Decision (ROD) formalizes and documents the U.S Army's (Army's) and U.S Environmental Protection Agency's (USEPA's) selected remedy for 17 historic solid waste management units (SWMUs) at the former Seneca Army Depot Activity (SEDA). Each of the Army's selected remedies for the 17 former SWMUs requires the definition and use of Land Use Controls (LUCs). The 17 former SWMUs discussed in this ROD include:

- SEAD-13, Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site;
- SEAD-39, Building 121 Boiler Blowdown Leach Pit;
- SEAD-40, Building 319 Boiler Blowdown Leach Pit;
- SEAD-41, Building 718 Boiler Blowdown Leaching Pit;
- SEADs-43/56/69, Building 606 – Old Missile Propellant Test Laboratory/Herbicide and Pesticide Storage/Disposal Area;
- SEAD-44A, Quality Assurance Test Laboratory;
- SEAD-44B, Quality Assurance Test Laboratory;
- SEAD-52, Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-62, Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64B, Garbage Disposal Area;
- SEAD-64C, Garbage Disposal Area;
- SEAD-64D, Garbage Disposal Area;
- SEAD-67, Dump Site East of Sewage Treatment Plant No. 4;
- SEAD-122B, Small Arms Range, Airfield Parcel; and
- SEAD-122E, Plane Deicing Area.

These SWMUs are also referred to below as "Areas of Concern" or "AOCs" or individually as an "Area of Concern" or "AOC."

Statement of Basis and Purpose

This decision document presents the Army's and the USEPA's selected remedy for SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E (or the AOCs), located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Romulus and Varick, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP),

40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Alpha Branch, Army BRAC Division, and the USEPA Region 2 have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed by the Army in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The New York State Department of Environmental Conservation (NYSDEC) has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected for each SWMU identified in this ROD is necessary to protect human health or the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from these SWMUs, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for each of the 17 AOCs discussed in this ROD is either No Action (NA) or No Further Action (NFA) combined with the establishment, maintenance, and monitoring of Land Use Controls (LUCs). AOCs where the selected remedy is NA with LUCs include:

- SEAD-13, Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site;
- SEADs-43/56/69, Building 606 – Old Missile Propellant Test Laboratory/Herbicide and Pesticide Storage/Disposal Area;
- SEAD-44B, Quality Assurance Test Laboratory;
- SEAD-52, Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-62, Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64C, Garbage Disposal Area; and
- SEAD-122E, Plane Deicing Area.

AOCs where the Army's selected remedy is NFA with LUCs include:

- SEAD-39, Building 121 Boiler Blowdown Leach Pit;
- SEAD-40, Building 319 Boiler Blowdown Leach Pit;
- SEAD-41, Building 718 Boiler Blowdown Leaching Pit;
- SEAD-44A, Quality Assurance Test Laboratory;
- SEAD-64B, Garbage Disposal Area;
- SEAD-64D, Garbage Disposal Area;
- SEAD-67, Dump Site East of Sewage Treatment Plant No. 4; and,
- SEAD-122B, Small Arms Range, Airfield Parcel.

At 12 of the AOCs (i.e., SEADs 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64C, and 67), LUCs previously documented by the Army will be imposed, monitored, and maintained until the concentrations of hazardous substances remaining at the site allow for the unlimited exposure and unrestricted use. It is also recommended that other LUCs previously not documented be imposed at five AOCs (i.e., SEADs 13, 64B, 64C, 122B and 122E) that are subject of this ROD.

The Army has previously documented and imposed LUCs within three portions of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility ("Prison Area") currently is located; in the east central potion of the Depot where the Planned Industrial/Office Development (PID Area) and Warehousing Area is located; and in the north-central portion (i.e., "North End Barracks" Area) of the Depot where the Hillside Children's Center is currently located. One or more of the 12 AOCs defined above (i.e., SEADs 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64C, and 67) are located within land covered by existing LUCs within these three parcels of the former Depot. Within this ROD, the Army formalizes and documents its intention to impose the existing LUCs on the AOCs located within each of these parcels under CERCLA. Land within the "Prison Area" and the area currently occupied by the Hillside Children's Center have been transferred to the community [i.e., to the people of the State of New York and Seneca County Industrial Development Agency (SCIDA), respectively] under deeds that have been recorded by the Seneca County Clerk. Land within the PID and Warehousing Area of the Depot has not yet been transferred to the community, but LUCs including a residential activity use restriction and a groundwater use/access restriction have been identified and documented within the "Final Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Area, Seneca Army Depot Activity" (September 2004).

New LUCs are proposed for the remaining five AOCs (SEADs 13, 64B, 64D, 122B, and 122E) discussed within this ROD. The groundwater use/access restriction proposed for SEAD-13 and SEAD-64D, and the residential use/activity restriction proposed for SEAD-122E result from the Army's determination that potential risks to human health or the environment exist due to the presence of hazardous substances at the historic SWMUs. The Army further recommends that the residential use/activity restriction proposed for SEAD-122E be imposed throughout the area occupied by the former Sampson / Seneca Army Depot Airfield to facilitate its transfer to the SCIDA; this LUC would encompass the entire parcel known as the Airfield. The LUC proposed for implementation at SEAD-64B (no unauthorized excavation and maintenance of cover) results from historic requirements of New York State Solid Waste Management Regulations; this LUC will also be applied along with the groundwater access/use restriction at SEAD-64D.

The specific LUCs selected for each AOC are summarized in **Table 1-1** and described more completely as follows:

"Prison Area" Land Use Controls (SEADs 43/56/69, 44A, 44B, 52, 62, and 64C):

Existing Deed with Reversionary Clause

The "Prison Area" property was transferred under a public benefit conveyance. The United States used a deed with a reversionary clause, as is required under Federal implementing regulations[1], to convey land in the southeastern part of the former Depot (i.e., Prison Area, see **Figure 1-1**) to the people of the State of New York for the construction of the Five Points Correctional Facility. It includes language that requires that the "property shall be used and maintained for a correction facility in perpetuity"[2] and that "the property shall not be sold, leased, mortgaged, assigned or otherwise disposed of"[3] without the prior consent of the Federal Government. In the event that any condition of the deed is breached "as to all or any portion or portions of the described property by New York or its successors or assigns,"[4] the "title and interest to such portion or portions of the property, in its existing condition, including all improvements thereon, shall revert to, and become property of, the Government at the option of and upon demand made in writing by the General Services Administration, or its successor in function."[5]

Provisions of the deed apply to the following SWMUs, which were transferred prior to a ROD being prepared and which are currently located within the bounds of New York's Five Points Correctional Facility Parcel:

- SEAD-43: Building 606 – Old Missile Propellant Test Laboratory;
- SEAD-44A: Quality Assurance Test Laboratory;
- SEAD-44B: Quality Assurance Test Laboratory;
- SEAD-52: Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-56: Building 606 – Herbicide and Pesticide Storage;
- SEAD-62: Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64C: Garbage Disposal Area; and,
- SEAD-69: Building 606 – Disposal Area.

Hazardous substances may be present at one or more of the listed historic SWMUs at concentrations that do not allow for unlimited exposure and unrestricted use. However, based on the results of previous investigations, risk assessments, and/or removal actions, these sites do not pose or represent a risk or threat to human health and the environment, given consideration of the area's continuing restricted use as a state maximum security correctional facility. The deed with the reversionary clause was recorded by the Seneca County Clerk on 26 September 2000 (see Seneca County Liber 612 Page 014 through page 031). Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property ownership reverts to the United States.

[1] Title 41 Code of Federal Regulations, Part 101-47 Federal Property Management Regulations, Utilization and Disposal of Real Property, Section Sec. 101-47.308-9 Property for correctional facility use.
[2] Seneca County Clerk, Waterloo, New York, Deed, United States of America to People of the State of New York, September 26, 2000, Liber 612, Page 019.
[3] Ibid.
[4] Ibid.
[5] Ibid.

"PID Area" Land Use Controls (SEADs 39, 40 and 67):

Residential Use and Groundwater Access/Use Restrictions

A ROD was signed by the Army and USEPA in 2004 for land within the Planned Industrial/Office Development (PID) and Warehousing Area (see **Figure 1-1**) of the former Depot. The PID Area encompasses numerous historic Seneca Army Depot SWMUs. The PID Area-wide land use restriction imposes LUCs that:

- Prohibit residential housing, elementary and secondary schools, childcare facilities and playgrounds activities; and,
- Prohibit access to or use of the groundwater until Class GA Groundwater Standards are met.

These LUCs are documented in the "Final, Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Area, Seneca Army Depot Activity" (September 2004).

These use restrictions result from determinations made specifically for SWMUs designated as SEAD-27 (Building 360 Steam Cleaning Waste Tank), SEAD-64A (Garbage Disposal Area), and SEAD-66 (Pesticide Storage near Buildings 5 and 6) in the PID Area. These land use restrictions will now be applied to three AOCs discussed in this Record of Decision and designated as:

- SEAD-39 (Building 121 Boiler Blow Down Pit);
- SEAD-40 (Building 319 Boiler Blow Down Pit); and
- SEAD-67 (Dump Site East of Sewage Treatment Plant No. 4).

Future land owners or users of sites located in the PID Area may request a variance to the LUCs identified above on a location-by-location basis. However, the future owner/user seeking the variance will need to provide relevant data to substantiate the validity of its request. Once a request is received, the Army, USEPA, and NYSDEC will evaluate and assess waiver requests for land in the PID Area on a case-by-case basis. Otherwise, the LUCs will remain in effect until the concentrations of hazardous substances in the soil and the groundwater beneath the sites have been reduced to levels that allow for unlimited exposure and unrestricted use of the land.

"North End Barracks" Area Land Use Controls (SEAD-41):

Existing Deed with Groundwater Notification

A deed was used to document the transfer of the land currently used for the Hillside Children's Center (i.e., former "North End Barracks" Area, see **Figure 1-1**) at the north end of the former Depot to the SCIDA. In the deed, the Army notified SCIDA that groundwater contamination had been identified in the vicinity of the former Building 718. This determination was made based on the results of historic groundwater sampling data that was collected during the investigation of SEAD-41, which indicated that total petroleum hydrocarbons (TPH, 690 parts per billion [ppb]) were present in the upper aquifer of the

groundwater. The Army applied the deed notification, based on the water quality from sampling, to all property located within the "North End Barracks" parcel. A public water supply services the entire area. This includes the area of the former SWMU SEAD-41, Building 718 Boiler Blowdown Pit.

The reported level of TPH at SEAD-41 exceeds the New York State Public Water System standards for unspecified organic contamination of 100 ppb. The deed further states "The Grantee, its successors and assigns, agree that in the event they use the groundwater as a public water supply source at the Property, they will comply with all applicable laws and regulations." Under New York regulations, future owners or occupants of the area would need to confirm the quality and acceptability of the groundwater as a source of potable water before it could be used for such a purpose. It is recommended that the LUC documented in the existing deed for the "North End Barracks" parcel be continued until the concentrations of hazardous substances in groundwater have been reduced to levels that allow for unrestricted use.

Land Use Controls (SEADs 13, 64B, 64D, 122B and 122E):

Groundwater Use/Access Restriction (SEAD-13)

A groundwater use/access restriction is also proposed at the following site:

- SEAD-13: Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site.

The proposed groundwater use/access restriction is intended to eliminate human contact with groundwater, thereby reducing risk to acceptable levels for potential human receptors. There is risk associated with the use of the groundwater at SEAD-13, driven by the concentrations of nitrate, aluminum, and manganese identified. The risk from the presence of metals is associated with the suspended solids contained in the collected groundwater samples and not from the groundwater itself. The presence of nitrate is likely related to past activities conducted in the area. The extent of the nitrate plume is defined and restricted to the area located between the historic disposal pits observed in SEAD-13-East and the Duck Pond to the west. Groundwater data from monitoring wells in the SEAD-13-West side of this AOC does not show evidence of a nitrate plume in this area of the AOC, which is downgradient of SEAD-13-East and the Duck Pond. Chemical analysis of surface water in the Duck Pond indicated that the nitrate/nitrite-nitrogen concentrations are below the levels established for drinking water sources nationally and within the State of New York.

Therefore, a LUC will be implemented over the geographic area of SEAD-13 to prohibit access to or use of the groundwater. This restriction will remain in effect until the concentrations of hazardous substances in groundwater beneath the AOC have been reduced to levels that allow for unlimited exposure and unrestricted use. Once groundwater cleanup standards are achieved, the groundwater use/access restriction may be eliminated, with USEPA approval.

Residential Activities Restriction (SEAD-122B and SEAD-122E)

The development and use of property for residential housing, elementary or secondary schools, child care facilities, and playgrounds will be prohibited in the following two AOCs:

- SEAD-122B: Small Arms Range, Airfield Parcel
- SEAD-122E: Plane Deicing Area

The proposed residential activities LUC will be implemented over the entire Airfield Parcel, which extends beyond the bounds of SEAD-122B and SEAD-122E. This LUC will be applied to all areas within the former Airfield, and will continue until such time as the concentrations of hazardous substances are reduced to levels that allow for unlimited exposure and unrestricted use. Future owners or users of land within the Airfield may request a waiver from the LUC on a location-by-location basis. At the time of the waiver request, the applicant must develop and submit sufficient data and information, subject to review and approval by the Army and the USEPA, to substantiate its request that the identified location is suitable for unlimited exposure and unrestricted use.

The boundary of the Airfield Area is defined as the boundary of the Airfield Special Events, Institutional, and Training area highlighted on **Figure 1-1.**

Unauthorized Digging Restriction (SEAD-64B)

A LUC that prohibits unauthorized digging and excavations within the bounds of the SWMU will be imposed for:

- SEAD-64B: Garbage Disposal Area.

SEAD-64B is a former solid waste disposal area that was closed by the Army prior to 1979. As a historic solid waste landfill, this SWMU is subject to requirements of the New York State's Solid Waste Regulations (6 NYCRR Part 360) in effect at the date of closure. Under New York's Solid Waste Regulations effective in 1979, a soil and vegetative cover was required to be placed on and maintained above the closed landfill. The proposed LUC would prohibit digging within the bounds of the former solid waste site. The LUC will continue at the AOC until solid wastes are removed, and concentrations of hazardous substances allow for unlimited exposure and unrestricted use.

Unauthorized Digging and Groundwater Access/Use Restriction (SEAD-64D)

LUCs that restrict unauthorized excavation and access to and use of groundwater will be imposed for the:

- SEAD-64D: Garbage Disposal Area.

Results of the mini risk assessment for this AOC indicate that ingestion of groundwater could pose a risk to future receptors. Furthermore, as a historic solid waste landfill, this SWMU is subject to requirements of the New York State's Solid Waste Regulations (6 NYCRR Part 360), as were in effect in 1979 when it was closed. Under New York's 1979 Solid Waste Regulations, a soil and vegetative cover must be placed on and maintained above the closed landfill.

The proposed groundwater use/access restriction will be implemented over the geographic area of SEAD-64D to prohibit access to or use of the groundwater until the levels of hazardous substances are reduced to levels that allow for unlimited exposure and unrestricted use. The restriction to prohibit unauthorized excavation at the SWMU will remain in effect as long as solid waste remains at the SWMU. The reduction of groundwater contamination to levels that allow for unlimited exposure and unrestricted use,

and the removal of solid waste must be completed before unlimited exposure and unrestricted use can be allowed at this SWMU.

Land Use Control Performance Objectives

The land use control (LUC) performance objectives at these 17 SWMUs, which will be (or have been) incorporated into leases and/or deeds for the parcels of real property that comprise these AOCs, as appropriate, are as follows:

- Comply with the use limitations documented and imposed in the Deed used to transfer property containing SEADs 43/56/69, 44A, 44B, 52, 62 and 64C from the U.S. Government to the people of the State of New York for the construction of a correctional facility (See Seneca County Liber 612 Page 014 through 031);
- Prohibit access to or use of groundwater at SEADs 39, 40, 41, 64D, and 67 until concentrations of hazardous substances contained are reduced to levels that allow unrestricted use;
- Prohibit residential housing, elementary and secondary schools, childcare facilities, and playgrounds activities at SEADs 39, 40, 67, 122B, and 122E until levels of hazardous substances found at the former SWMUs allow for unlimited exposure and unrestricted use; and
- Prohibit unauthorized excavation at SEADs 64B and 64D.

The Army and USEPA's selected remedy for each AOC discussed in this ROD includes LUCs. To implement the Army's selected remedy at these AOCs (i.e., SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E), a LUC Remedial Design (RD) for each LUC combination identified (e.g., reversionary deed; groundwater use/access restriction only; groundwater use/access restriction and residential activities restriction; residential activities restriction only; digging restriction only; and digging and groundwater use/access restriction) will be prepared. The LUC RD Plan will include: a site description; land use restrictions; mechanism to ensure that the land use restrictions are not violated in the future; implementation and maintenance actions, including periodic inspections; and reporting/notification requirements. In addition, the Army will prepare an environmental easement for each AOC as needed, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of transfer of the AOCs from federal ownership. A schedule for completion of the draft LUC RD covering the individual AOCs will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). In accordance with the FFA and CERCLA §121(c), the remedial action (including ICs) will be reviewed no less often than every five years. After such reviews, modifications may be implemented to the remedial program, if appropriate.

The Army shall implement, inspect, maintain, report, and enforce the ICs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or other means, the Army shall retain ultimate responsibility for remedy integrity.

Source 2

RECORD OF DECISION

For

Five Former Solid Waste Management Units (SWMUs) SEAD-1, Hazardous Waste Container Storage Facility; SEAD-2, PCB Transformer Storage Facility; SEAD-5, Sewage Sludge Waste Piles; SEAD-24, Abandoned Powder Burn Pit; and, SEAD-48, Row E0800 Pitchblende Storage Igloos

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
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and

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Contract Number: DACA87-02-D-0005
Delivery Orders: 0033
EPA Site ID: NY0213820830
NY Site ID: 8-50-006

April 2009

1.0 DECLARATION FOR THE RECORD OF DECISION

Areas of Concern Names and Site Location

SEAD-1 – the former Hazardous Waste Container Storage Facility (Building 307)
SEAD-2 – the former PCB Transformer Storage Facility (Building 301)
SEAD-5 – Sewage Sludge Waste Piles
SEAD-24 – the Abandoned Powder Burn Pit
SEAD-48 – Row E0800 Pitchblende Ore Storage Igloos

Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
CERCLIS ID# NY0213820830; New York Site ID# 8-50-0006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S Army's (Army's) and U.S Environmental Protection Agency's (EPA's) selected remedies for five historic solid waste management units (SWMUs) at the former Seneca Army Depot Activity (the Site, SEDA, or Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, 42 U.S.C. § 9601, *et seq.*, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, Protection of Environment, Code of Federal Regulations (CFR) Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Chief, Consolidation Branch, Army BRAC Division; and, the Emergency and Remedial Response Division Director, EPA Region II have been delegated the authority to approve this ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions for these historic SWMUs. This index is included in **Appendix A**.

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOC Assessment

The selected remedies for three of the historic SWMUs (i.e., SEADs 1, 2, and 5) address contaminated soil and groundwater. The selected remedies for these SEADs will limit soil and groundwater as exposure pathways for potential receptors. The response actions selected in this ROD for SEADs 1, 2, and 5 are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

No Further Action (NFA) is called for at SEAD-24 where a time-critical removal action (TCRA) previously removed soil contaminated with hazardous substances, and where conditions now indicate that the land is suitable for unrestricted use and unlimited exposures. Finally, NFA is also selected for SEAD-48 where radiological decontamination and remedial actions completed as part of the SEDA's Nuclear Regulatory Commission (NRC) radiological license termination process have shown that soils, groundwater, and building surfaces are suitable for unrestricted use and unlimited exposures.

Description of the Selected Remedies

The selected remedies for SEAD-24 (the Abandoned Powder Burning Pit) and SEAD-48 (Row E0800 Pitchblende Ore Storage Igloos) are No Further Action. These selections are based on the Army's and EPA's determination that these sites do not pose a significant threat to human health or the environment. The locations of SEADs 24 and 48 are shown in **Figure 1-1**.

The response actions selected in this ROD for SEAD-1 (the Hazardous Waste Container Storage Facility), SEAD-2 (the PCB Transformer Storage Facility), and SEAD-5 (Sewage Sludge Waste Piles) address contaminated soil and groundwater.

LUC Remedy

The common elements of the selected remedies at SEADs 1, 2, and 5 include:

- Establishing, maintaining, monitoring, and reporting on a land use control (LUC) that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the areas of concern (AOCs); and,
- Establishing, maintaining, monitoring, and reporting on a second LUC that prohibits access to and use of groundwater at the AOCs until its quality allows for unrestricted use and unlimited exposures.

In addition, at SEAD-5, the selected remedy requires:

- Covering of contaminated soils (including those originating at SEADs-59 and 71) with at least one foot of clean fill that meets New York's Restricted Commercial Use soil cleanup objectives (SCOs);
- Placing demarcation fabric (e.g., colored "snow" or safety fence) between the contaminated soil and the clean fill; and,
- Establishing, maintaining, monitoring, and reporting on a third LUC that prohibits unauthorized excavations or activities that might compromise the integrity of the engineered cover.

As the selected remedies for the latter three AOCs (i.e., SEADs 1, 2, and 5) do not allow unrestricted use and unlimited exposures, the Army or its successors will be required to complete a review of the selected remedies at least once every 5 years, in accordance with Section 121(c) of the CERCLA.

Land Use Control (LUC) Performance Objectives:

The common LUC performance objectives for SEADs 1, 2, and 5 are to:

- Prohibit access to, or use of, the groundwater until groundwater cleanup standards are achieved; and,
- Prohibit the use of the land within the AOCs for residential housing, elementary and secondary schools, childcare facilities, and playground activities.

At SEAD-5, the additional LUC performance objective is to:

- Prohibit unauthorized excavation or other activities that could compromise the integrity of the engineered cover.

SEADs 1, 2, and 5 represent a small portion of a larger tract of land located in the east-central portion of the former SEDA that comprises the Planned Industrial / Office Development and Warehousing (PID) Area that has been transferred to the Seneca County Industrial Development Agency (SCIDA), exclusive of any Army retained property. Based on an agreement reached between the Army, the EPA, and the NYSDEC, the entire PID Area, exclusive of Army retained property, is subject to equivalent LUCs (i.e., prohibit groundwater access/use; prohibit residential housing/elementary and secondary schools/childcare facilities/playgrounds) as are proposed for imposition at SEADs 1, 2, and 5. The referenced LUCs comprised the remedy selected in a 2004 ROD [*Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas* (Parsons, 2004)] for SEADs 27, 64A, and 66, three other AOCs within the PID Area, due to levels of contaminants that were identified at those AOCs. At the time of the 2004 ROD, the Army, EPA, and NYSDEC agreed that these LUCs should be applied to all land within the greater PID Area, pending the provision and evaluation of new data for specific sites within the PID Area if a future owner or occupant wished to apply for a variance from the specified LUCs. The PID Area LUCs were implemented when the PID Area was transferred to the SCIDA by the Army, but they are not applied to the land comprising SEADs 1, 2, or 5, as these parcels were retained by the Army at the time of the greater PID Area's transfer, pending completion of necessary investigations and studies, the evaluation of potential remedial actions, and the selection of an approved remedy for SEADs 1, 2, and 5. The Army will ensure that the LUCs selected in this ROD will be maintained and enforced, until such time as the Army transfers these properties to other owners. The locations of SEADs 1, 2, and 5, and the land that is subject to institutional controls in the PID Area are shown in **Figure 1-1**.

The unauthorized excavation LUC for SEAD-5 will be implemented only at that location where the protective cover is established over SEAD-5 soils. The location where engineered cover is installed will be documented during the Remedial Design phase, and formally documented subsequent to the completion of the remedial action at this AOC.

The Army shall, through the on-site Commander's representative or other designated official, implement, maintain, inspect, report on, and enforce the remedy described in this ROD. This ROD selects as the remedy for SEAD-1, SEAD-2, and SEAD-5, LUCs (i.e., prohibit unauthorized excavations, SEAD-5 only; and groundwater access/use and land use limitations, SEAD-1, SEAD-2, and SEAD-5) to be imposed by an environmental easement at the time when land comprising SEAD-1, SEAD-2, or SEAD-5 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the remedies selected in this Record of Decision, which will include the imposition of LUCs at SEAD-1, SEAD-2, and SEAD-5, a LUC Remedial Design will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the

New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-1, SEAD-2, and SEAD-5, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the EPA will be named as third-party beneficiaries on the environmental easement. A schedule for completion of the draft SEAD-1, SEAD-2, and SEAD-5 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer, the Army, as the owner and operator of the property at SEAD-1, SEAD-2, and SEAD-5, will through the on-site Commander's representative or other designated official, ensure that the LUCs are implemented by monitoring the property at SEAD-1, SEAD-2, and SEAD 5 and restricting development or use on this property if inconsistent with the LUCs.

State Concurrence

NYSDEC forwarded a letter of concurrence to the EPA regarding the selection of the remedial actions. This letter of concurrence has been placed in **Appendix B**.

Declaration

The remedies selected in this ROD are, as required by CERCLA and the NCP, protective of human health and the environment; cost effective; compliant with applicable or relevant and appropriate requirements, criteria or limitations promulgated under federal or state laws (ARARs) unless waived; and, use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The remedies identified for SEADs 1, 2, and 5 will result in hazardous substances and pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for an indeterminate period. A review of the AOCs and the selected remedies will be conducted within five years after the signing of this ROD to ensure that the remedy is, or will be, protective of human health and the environment, with consideration given to each AOC's continuing and planned future use.

The remedies identified for SEAD-24 and SEAD-48 do not result in hazardous substances and pollutants or contaminants remaining on-site. The selected remedies for SEAD-24 and SEAD-48 (NFA) are protective of human health and the environment, comply with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and are cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at these SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and five-year reviews are not necessary.

The estimated cost associated with implementing, monitoring, assessing and reporting on the continued suitability of the actions selected for SEADs 1, 2, and 5 is $379,380 in total. There are no estimated costs for the implementation of remedies selected (i.e., NFA) for SEADs 24 and 48.

DEPARTMENT OF THE ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
4820 University Square
HUNTSVILLE, AL 35816

Source 3

Contrac
TASK
requ

December 21, 2009

REPLY TO ATTENTION OF

SUBJECT: Request for Proposal for Contract **W912DY-08-D-0003**, New Task Order (0008), Implementation of The Long-Term Monitoring Plan for The Open Burning (OB) Grounds And Fire Training Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment Of Existing Monitoring Wells At Various Sites, Seneca Army Depot Activity Romulus, New York

Mr. Jeff Adams
Parsons Infastructure & Technology Group
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Dear Mr. Adams:

Please submit a firm fixed price proposal for the subject requirement in accordance with the attached Performance Work Statement (PWS), dated 4 December 2009.

Your firm's priced proposal must be submitted in writing and shall include but not be limited to the following: 1) All the labor categories, number of labor hours and labor hour rates, 2) Any Other Direct Costs that may be associated with this Task Order.

It is requested that your proposal be received by this office, no later than 2:00 p.m., local time, on December 28, 2009. This Request for Proposal (RFP) does not in any manner imply or authorize your firm to begin any actions listed or referenced in the PWS. The point of contact for this action is Laura Stiegler, Contract Specialist, (256) 895-1171; Email: Laura.M.Stiegler@usace.army.mil

Sincerely,

/s/
Van E. Pinion
Contracting Officer

PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN
FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS,
ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING
MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

04 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that

previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. PROJECT MANAGEMENT The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

4.0 (Task 2) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR3:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR3 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

5.0 (Task 3) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED BELOW:

SITE	DESCRIPTION
SEAD 27	- STEAM JENNY PIT
SEAD 64A	- GARBAGE DISPOSAL AREA
SEAD 66	- PESTICIDE STORAGE AREA
SEAD 25	- FIRE DEMONSTRATION PAD
SEAD 26	- FIRE TRAINING AREA

Task w/ 5 sites.

SEAD 39 - BUILDING 121 BOILER BLOW DOWN PIT

SEAD 40 - BUILDING 319 BOILER BLOW DOWN PIT

SEAD 41 - BUILDING 718 BOILER BLOW DOWN PIT

SEAD 67 - DUMPSITE EAST OF STP 4

SEAD 13 - INHIBITED RED FUMING NITRIC ACID (IRFNA)

SEAD 64B - GARBAGE DISPOSAL AREA

SEAD 64C - RUMORED GARBAGE DISPOSAL AREA

SEAD 64D - GARBAGE DISPOSAL AREA

SEAD 122B - AIRFIELD SMALL ARMS RANGE

SEAD 122E - DEICING LOCATIONS

SEAD 44A - QUALITY ASSURANCE TEST LAB WEST

SEAD 44B - QUALITY ASSURANCE TEST LAB

SEAD 43 - OLD MISSILE PROPELLANT TEST LAB

SEAD 56 - HERBICIDE AND PESTICIDE STORAGE

SEAD 69 - BUILDING 606 DISPOSAL AREA

SEAD 62 - NICOTINE SULFATE DISPOSAL AREA

SEAD 52 - AMMUNTION BREAKDOWN AREA

SEAD 3, 6, 8, 14, and 15 - ASH LANDFILL OPERABLE Unit

LUC Inspection

a. **LUC Inspections.** The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. **LUC Annual Report.** The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. **Project Management.** The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

6.0 DESCRIPTION OF SERVICES FOR THE ABANDONMENT OF EXISTING MONITORING WELLS AT VARIOUS SITES LISTED BELOW:

(Task 4) Abandonment of Existing Monitoring Wells at SEAD-5

(Task 5) Abandonment of Existing Monitoring Wells at SEAD-6

(Task 6) Abandonment of Existing Monitoring Wells at SEAD-119B

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

14.0 (Optional Task 27) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR4.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

15.0 (Optional Task 28) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR5.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

5 yr review

c. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review is to evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

16.0 SUBMITTALS: The contractor shall furnish copies of all documents to the addressees listed below. One copy of the final documents shall be sent to the CEHNC Project Manager on 3.5-inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these documents. Following each submission, comments generated as a result of their review shall be incorporated.

16.1 ADDRESSEES

a) Contracting Officer (KO)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT-S (MS. Sharon Butler)
4820 University Square,
Huntsville, Alabama, 35816

LUC Inspection with 5 yr review

Client: U.S. Army Corps of Engineers

Contract: RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S 5, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment, S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, s6	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8, Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S 119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

LUC INSPECTION COST

ESCALATION

F.Y. 09 COST 59,224.25

ESCALATION FACTOR F.Y 12 1.0354

FY 12 COST 61,320.79

Client: U.S. Army Corps of Engineers

Contract: RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Opt Year 4 Task 28
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Option Yr 4 Task 28 Monitoring of Land Use Controls	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	$ 96,592.75
TOTAL	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	
PROJECT TOTAL						$96,592.75

Cost

LUC Inspection
with 5yr review

ESCALATION

F.Y. 09 Cost 96,592.75

Escalation Factor (FY 12) 1.0354

FY 12 cost $100,012.13

SOURCE 4

FINAL

RECORD OF DECISION
FOR
SITES REQUIRING INSTITUTIONAL CONTROLS IN THE PLANNED INDUSTRIAL/OFFICE DEVELOPMENT OR WAREHOUSING AREAS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY ENGINEERING & SUPPORT CENTER
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
100 Summer St, Suite 800
Boston, Massachusetts

EPA Site ID No.: NY0213820830
NY Site ID No.: 8-50-006
DACA87-95-D-0031, Delivery Order 21
736026

July 2004

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

Building 360 – Steam Cleaning Waste Tank (SEAD-27), the Garbage Disposal Area (SEAD-64A), and the Pesticide Storage Area Near Building 5 and 6 (SEAD-66).

Seneca Army Depot Activity (SEDA)
CERCLIS ID# NY0213820830
NY State ID# 8-50-006
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's and EPA's selected remedy for Building 360 – Steam Cleaning Waste Tank (SEAD-27), the Garbage Disposal Area (SEAD-64A), and the Pesticide Storage Area Near Building 5 and 6 (SEAD-66), located at the Seneca Army Depot Activity (SEDA) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 United States Code (USC) §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Director, National Capital Region Field Office; and the U.S. Environmental Protection Agency (USEPA) Region II have been delegated the authority to approve this Record of Decision (ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A**.

The State of New York, through NYSDEC and the New York State Department of Health (NYSDOH), has concurred with the Selected Remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect the public health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The Army recommends establishing institutional controls (ICs) in the form of land use controls (LUCs) at SEADs 27, 64A, and 66. The LUCs will be applied area wide. A map showing the location of SEADs 27, 64A, and 66 and the LUC boundary is provided at **Figure 1-1.** Five year reviews of this remedy will be conducted in accordance with Section 120(c) of CERCLA.

LUC

Land Use Control Performance Objectives

The LUC performance objectives at these sites are as follows and will also be incorporated into deeds and/or leases for this property:

- Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities at the SEAD 27, 64a, and 66 sites.
- Prevent access to or use of the groundwater at the SEAD 27, 64a, and 66 sites until Class GA Groundwater Standards are met.
- Prevent unauthorized excavation at the SEAD 64a site.

The LUCs will continue until the concentration of hazardous substances in the soil and the groundwater beneath have been reduced to levels that allow for unlimited exposure and unrestricted use.

Land Use Control Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Sites Requiring Institutional Controls in the Planned Industrial/Office or Warehousing Area ("PID Area"), will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the PID Area, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership.

A schedule for completion of the draft Institutional Control Remedial Design Plan will be completed within 21 days of the ROD signature consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall be responsible for implementing, inspecting, reporting on and enforcing the LUCs described in this ROD in accordance with the approved LUC remedial design. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or

Source 5 Site

RECORD OF DECISION

FOR

THE DEFENSE REUTILIZATION AND MARKETING OFFICE (DRMO) YARD (SEAD 121C) AND THE RUMORED COSMOLINE OIL DISPOSAL AREA (SEAD 121I)

5

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

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Contract Number: FA8903-04-D-8675
Task Order: 0031
CDRL: A001C
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

June 2008

1 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

The Defense Reutilization and Market Office (DRMO) Yard (SEAD 121C) and the Rumored Cosmoline Oil Disposal Area (SEAD 121I)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selected remedies for two areas of concern (AOCs), SEAD 121C and SEAD 121I located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Consolidations Branch, Army BRAC Division, and the Acting Director, EPA Region II have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A.**

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response actions selected in this ROD are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from SEAD 121C and SEAD 121I, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

Remed

The ~~selected remedies for SEAD~~ 121C and SEAD 121I address contaminated soil and groundwater. The selected remedies will result in the elimination of soil and groundwater as exposure pathways for potential receptors.

Source 6 ROD For Site

RECORD OF DECISION

FOR

THE FILL AREA WEST OF BUILDING 135 (SEAD-59) AND THE ALLEGED PAINT DISPOSAL AREA (SEAD-71)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

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Contract Number: DACA87-02-D-0005
Delivery Orders: 0013
USEPA Site ID: NY0213820830
NY Site ID: 8-50-006

March 2009

1.0 DECLARATION OF THE RECORD OF DECISION

Source 6

Areas of Concern Name and Location

The Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)
Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (USEPA's) selected remedies for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71) located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions for these two areas of concern (AOCs) were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. Section 9601, *et seq.* and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Consolidations Branch, BRAC Division, and the USEPA Region II have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A.**

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOC Assessment

The response actions selected in this ROD are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment from SEAD-59 and SEAD-71 or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

Sites

Description of the Selected Remedies

The selected remedies for SEAD-59 and SEAD-71 address contaminated soil and groundwater. The selected remedies will result in the removal of soil and groundwater as exposure pathways for potential receptors.

The elements that compose the selected remedies at SEAD-59 and SEAD-71 include:

LU

- Establish, monitor, and maintain land use controls (LUCs) that:
  - Prohibit access to or use of the groundwater until unrestricted use and unlimited exposure criteria are attained; and,
  - Prohibit the development or use of the property for residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained at SEAD-59 and SEAD-71.

Soils excavated from SEAD-59 and SEAD-71 that remain staged in stockpiles in the vicinity of the two AOCs will be moved to SEAD-5 where they will continue to be managed by the Army. Although these soils contain measureable concentrations of hazardous substances, they are not hazardous by characteristic determinations (i.e., toxicity characteristic, ignitability, corrosivity, reactivity). It is possible that the stockpiled soil will subsequently be used as part of a multi-layered cap that may be constructed over SEAD-5 soil to address conditions that have been identified at that AOC.

SEAD-59 and SEAD-71 represent a small portion of a larger tract of land located in the east-central portion of the former SEDA that comprises the Planned Industrial / Office Development and Warehousing (PID) Area that has been transferred to the Seneca County Industrial Development Agency (SCIDA), exclusive of any Army retained property. Based on an agreement reached between the Army, the USEPA, and the NYSDEC, the entire PID Area, exclusive of Army retained property, is subject to equivalent LUCs (i.e., prohibit groundwater access/use; prohibit residential housing/elementary and secondary schools/childcare facilities/playgrounds) as are proposed for imposition at SEAD-59 and SEAD-71 in this ROD. The referenced LUCs were the remedy selected in a 2004 ROD [*Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas* (Parsons, 2004)] for SEAD 27, 64A, and 66, three other AOCs within the PID Area, due to levels of contaminants that were identified at those AOCs. At the time of the 2004 ROD, the Army, USEPA, and NYSDEC agreed that these LUCs should be applied to all land within the greater PID Area, pending the provision and evaluation of new data for specific sites within the PID Area if a future owner or occupant wished to apply for a variance from the specified LUCs. The PID Area LUCs were implemented when the PID Area was transferred to the SCIDA by the Army, but they are not applied to the land comprising SEAD-59 and SEAD-71, as these parcels were retained by the Army at the time of the greater PID Area's transfer, pending completion of necessary investigations and studies, the evaluation of potential remedial actions, and the selection of an approved remedy for SEAD-59 and SEAD-71.

The Army shall, through the on-site Commander's representative or other designated official, implement, inspect, report on, and enforce the remedy described in this ROD. This ROD selects as the remedy for SEAD-59 and SEAD-71 LUCs (i.e., groundwater access/use and land use limitations) to be imposed by an environmental easement at the time when land comprising SEAD-59 or SEAD-71 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the remedies selected in this Record of Decision, which will include the imposition of LUCs at SEAD-59 and SEAD-71, a LUC Remedial Design will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-59 and SEAD-71, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the USEPA will be named as third-party beneficiaries on the environmental easement. A schedule for completion of the draft SEAD-59 and SEAD-71 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer, the Army, as the owner and operator of the property at SEAD-59 and SEAD-71, will through the on-site Commander's representative or other designated official, ensure that the LUCs are implemented by monitoring the property at SEAD 59 and SEAD 71 and restricting development or use on this property if inconsistent with the LUCs.

Once the selected remedies are applied, a review of the selected remedies will be made at least once every five years in accordance with Section 121(c) of the CERCLA. The periodic reviews of the remedies are required by CERCLA at sites where contamination remains in order to assure the protectiveness of the selected remedy.

The groundwater access/use restriction and the restriction prohibiting residential housing, elementary and secondary schools, childcare facilities and playgrounds may be eliminated, on a site-by-site basis, if data is provided to, and approved by, the Army, USEPA, and the NYSDEC that documents that groundwater quality achieves applicable groundwater standard levels and that soil data allows for unrestricted use and unlimited exposures.

The Army and USEPA expect that remedial action will be needed at SEAD-5 to address soils currently in the ground at that AOC that represent a potential risk to human health. One of the potential remedial actions that may be taken at SEAD-5 is to spread the stockpiled soils staged at SEAD-59 out over soils in SEAD-5 that pose the potential threat. The stockpiled soil would become part of a multi-layered cover that would be placed over the contaminated soil to prohibit access and exposure to future users or occupants. The SEAD-5 remedial action would be followed by the imposition of a LUC to restrict allowable activities at that AOC, and an imposition of a LUC to protect the soil cover and the demarcation fabric above such interred soils. The remedial action for SEAD-5 will be addressed in a separate Record of Decision to be issued pursuant to CERCLA for that AOC.

State Concurrence

NYSDEC forwarded to USEPA a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence has been placed in **Appendix B**.

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

Source 7

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

- Direct Costs
- Professional Labor Overhead / G&A
- Field Office Overhead / G&A
- Prime Contractor Profit
- Subcontractor Profit
- Contingency
- Markup Calculations
- Applying Markup Percentages
- Adjusting Markups for Each Technology
- Creating Custom Markup Templates
- Markups Report

Markups - Overview

To calculate the total cost for a work package, markups for various categories of indirect costs must be added to the direct cost. The fundamental equation is:

Total Cost = (Direct Cost) + (Markups for Indirect Costs)

Markups are all costs other than direct costs that do not become a permanent part of the facilities nor contribute directly to the study or design activities. The *RACER* Markup Template contains six factors that are used to calculate indirect costs:

- Professional Labor Overhead/G&A
- Field Office Overhead/G&A
- Subcontractor Profit
- Prime Contractor Profit
- Contingency
- Owner Costs

Markup percentages are applied at Level 3 (Phase). If you do not select a markup template at Level 3 (Phase), the System Default Markups will be applied to the phase.

The System Default Markups were developed using remediation and general construction industry data obtained from various educational institutions, professional societies and associations, subject-matter experts, commercial organizations, and government agencies. The data was reviewed by a group consisting of representatives from private industry, the Air Force, the Army Corps of Engineers, and the Department of Energy.

- Direct Costs
- Professional Labor Overhead / G&A
- Field Office Overhead / G&A
- Prime Contractor Profit
- Subcontractor Profit
- Contingency
- Owner Cost
- Markup Calculations
- Applying Markup Percentages
- Adjusting Markups for Each Technology
- Creating Custom Markup Templates
- Markups Report

Source 8

FINAL

RECORD OF DECISION

FOR

ASH LANDFILL

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

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Contract Number: DACA87-95-D-0031
Delivery Order 0010

July 2004

The Ash Landfill Operable Unit includes SEADs 3, 6, 8, 14 and 15, which are described in **Section 2.0** of this ROD.

Site

Description of the Selected Remedy

The selected remedy for the Ash Landfill Operable Unit consists of a combination of one source control alternative and one migration control alternative. The selected remedy removes potential sources of soil and groundwater contamination and addresses residually-contaminated soil and groundwater. The selected remedy for the Ash Landfill Operable Unit consists of the following elements:

- Excavation and off-site disposal of Debris Piles, and establishment and maintenance of a vegetative soil cover for the Ash Landfill and the Non-Combustion Fill Landfill (NCFL) for source control;
- Installation of three in-situ permeable reactive barrier walls, and maintenance of the proposed walls and the existing wall for migration control of the groundwater plume;
- Backfilling and re-grading the Incinerator Cooling Water Pond (SEAD-3) to fill the pond during the excavation of the debris piles;
- A Contingency Plan will be developed to include one of the following options; provision of an alternative water supply for potential downgradient receptors (farmhouse) or air sparging of the plume in the event that groundwater conditions downgradient of the recommended remedial action described above exceed trigger values;
- Land Use Controls (LUCs) to attain the remedial action objectives; and

LUC

5 yr revie

- Completion of a review of the selected remedy every five-years (at minimum) in accordance with Section 121(c) of the CERCLA. If a wall material other than iron is selected, the Army will conduct a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews will be performed until the first five year review. The typical five year review schedule will be followed thereafter.

Land Use Control Performance Objectives

The LUC performance objectives for the Ash Landfill are to:

- Prevent access to or use of the groundwater until cleanup levels are met;
- Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells and impermeable reactive barriers;
- Prohibit excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume; and

- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact.

The groundwater LUCs will be continued until such time that the concentration of hazardous substances in the groundwater have been reduced to levels that allow for unlimited exposure and unrestricted use. Intrusive restrictions for those areas requiring a vegetative soil cover will continue indefinitely. These land use controls will be implemented over the area of the groundwater plume, NCFL, and the Ash Landfill, as shown on **Figure 1-1.**

LUC Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Ash Landfill will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the Ash Landfill, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft Ash Landfill LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity. Should the Army transfer these responsibilities, the Army shall provide timely written notice to the regulators of the transferee which shall include the entity's name, address, and general remedial responsibility.

The five-year reviews are intended to evaluate whether the response actions remain protective of public health and the environment, and they would consist of document review, ARAR review, interviews, inspection/technology review, and reporting.

State Concurrence

NYSDOH forwarded a letter of concurrence regarding the selection of a remedial action to NYSDEC, and NYSDEC, in turn, forwarded to EPA a letter of concurrence regarding the selection of a remedial action. This letter of concurrence has been placed in **Appendix B**.

Declaration

The selected remedy is consistent with CERCLA and, to the extent practicable, with the NCP, and it is protective of human health and the environment, complies with federal and state requirements that

REF 9
SOURCE 9

FINAL
RECORD OF DECISION

FOR

THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND
THE ACTIVE DEACTIVATION FURNACE (SEAD-17)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

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Contract Number: DACA87-95-D-0031
Delivery Order 003
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

March 2006

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

The Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (USEPA's) selected remedy for SEAD-16 and SEAD-17, located at the Seneca Army Depot Activity (SEDA or the Depot) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Director of the National Capital Region Field Office, and the USEPA Region II have been delegated the authority to approve this Record of Decision (ROD). The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have concurred with the selected remedy.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The State of New York, through the NYSDEC and NYSDOH, has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect human health or the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from SEAD-16 and SEAD-17, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for SEAD-16 and SEAD-17 addresses contaminated soil, building debris, and groundwater. The selected remedy will result in the removal of soil and groundwater as a pathway

for potential receptors. Groundwater will be monitored to ensure that soil contamination left on-site does not further degrade groundwater quality.

The elements that compose this remedy include:

- Conduct additional sampling as part of the pre-design sampling program to further delineate the areas of excavation;
- Remove, test, and dispose of the SEAD-16 building debris off-site;
- Excavate approximately 275 cubic yards (cy) of ditch soil to a depth of 1 foot (ft.) with lead concentrations greater than 1250 mg/Kg until cleanup standards are achieved;
- Excavate approximately 1760 cy of surface soils to a depth of 1 ft. at SEAD-16 with lead concentrations greater than 1250 mg/Kg, and polycyclic aromatic hydrocarbon (PAH) and metal concentrations greater than risk-based derived cleanup standards listed below and in **Table 1-1**;
- Excavate approximately 67 cy of subsurface soils to a depth of 2 ft. to 3 ft. at SEAD-16 (areas around SB16-2, SB16-4, and SB16–5) with lead concentrations greater than 1250 mg/Kg, and PAH and metal concentrations greater than risk-based derived cleanup standards listed below and in **Table 1-1** (**Figure 1-1**);
- Excavate approximately 2590 cy of surface soils to a depth of 1 ft. at SEAD-17 with lead concentrations greater than 1250 mg/Kg and metal concentrations greater than risk-based derived cleanup standards listed below (**Table 1-1**) (**Figure 1-2**);
- Stabilize excavated soils from SEAD-16 and SEAD-17 and building debris from SEAD-16 exceeding the toxicity characteristic leaching procedure (TCLP) criteria in order to attain Land Disposal Restrictions (LDR);
- Dispose of the excavated material in an off-site landfill;
- Backfill the excavated areas with clean backfill;
- Conduct groundwater monitoring at SEAD-16 and SEAD-17 until concentrations are below the GA criteria;
- Remediate material potentially presenting an explosive hazard and munitions and explosives of concern to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or to put into place land use restrictions as may be required by DDESB;
- Submit a Completion Report following the remedial action;
- Establish and maintain land use controls (LUCs) to prevent access to or use of the groundwater and to prevent residential use until cleanup standards are met; and
- Complete a review of the selected remedy every 5 years (at minimum), in accordance with Section 121(c) of the CERCLA.

GW monitoring

LUCs

5 year review

COMPOUNDS	SOIL CLEANUP GOAL
Polycyclic Aromatic Hydrocarbons (PAHs)	
Benzo(a)anthracene (µg/Kg)	20,417
Benzo(a)pyrene (µg/Kg)	2,042
Benzo(b)fluoranthene (µg/Kg)	20,417
Benzo(k)fluoranthene (µg/Kg)	50,000
Chrysene (µg/Kg)	50,000
Dibenz(a,h)anthracene (µg/Kg)	2,042
Indeno(1,2,3-cd)pyrene (µg/Kg)	20,417
Metals	
Antimony (mg/Kg)	29
Arsenic (mg/Kg)	20
Cadmium (mg/Kg)	14
Copper (mg/Kg)	331
Lead (mg/Kg)	1250
Mercury (mg/Kg)	0.54
Thallium (mg/Kg)	2.6
Zinc (mg/kg)	773

To complete Resource Conservation and Recovery Act (RCRA) closure of the deactivation furnace at SEAD-17, the Army will either further decontaminate or demolish and dispose off-site the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).

SEAD-16 AND SEAD-17 Land Use Control (LUC) Performance Objectives

The LUC performance objectives for SEAD-16 and SEAD-17 are to:

- Prevent access to or use of the groundwater until cleanup levels are met; and
- Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities.

The LUCs would be implemented over the area bounded by the boundary at SEAD-16 (**Figure 1-1**) and SEAD-17 (**Figure 1-2**). The boundary of SEAD-16 is defined as the fence; SEAD-17 is bounded by the fence to the east and by natural boundaries, such as ditches. It should be noted that land within the Planned Industrial/Office Development (PID) area, which includes SEAD-16 and SEAD-17, is also subject to a separate Proposed Plan and ROD that include institutional controls (ICs) ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004)]. Groundwater use restrictions will continue until groundwater constituent concentrations have been reduced to levels that allow for unlimited exposure and unrestricted use. With USEPA approval, once groundwater cleanup standards are achieved, the groundwater use restrictions may be eliminated.

To implement the Army's remedy, which includes the imposition of LUCs, a LUC Remedial Design for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

State Concurrence

NYSDOH forwarded a letter of concurrence regarding the selection of a remedial action to NYSDEC, and NYSDEC, in turn, forwarded to USEPA a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence has been placed in **Appendix B.**

Declaration

CERCLA and the NCP require each selected remedy to be protective of human health, public welfare, and the environment; be cost effective, comply with other statutory laws; and use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The selected remedy is consistent with CERCLA and the NCP and is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions. This remedy also reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants.

Because this remedy may result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for an indeterminate period, a statutory review will be conducted every 5 years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

constituent concentrations have been reduced to levels that allow for unlimited exposure and unrestricted use. With USEPA approval, once groundwater cleanup standards are achieved, the groundwater use restrictions may be eliminated.

To implement the Army's remedy, which includes LUCs, a LUC RD for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of ECL Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of SEAD-16's and SEAD-17's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC RD will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the FFA.

The present worth cost of this alternative is $3,109,400. The capital cost and the present worth O&M cost of Alternative 4 are $1,699,900 and $1,409,500, respectively.

chosen remedy

In comparison to other remedies considered in the FS, Alternative 4 has the highest overall ranking. While it does not rank highest for any single evaluation criterion, as Alternatives 2 and 6 do, neither does it rank the lowest for any evaluation criteria considered, which each of the other intrusive alternatives did. Alternative 4 ranks second of all the alternatives for long-term effectiveness and permanence and reduction of mobility of contaminants. It also ranks highest of the three alternatives (2, 4, and 6) for technical feasibility and overall cost. The preferred alternative will eliminate source soils from further impacting SEAD-16 and SEAD-17 by preventing contact with receptors and migration of contaminants to surface water and groundwater. It is a cost-effective, readily available alternative that does not require long-term maintenance aside from groundwater monitoring and maintenance of LUCs, such as groundwater restrictions, and residential/daycare land use restrictions; and, the alternative can be implemented quickly to provide short-term effectiveness. Finally, it is a permanent solution that would significantly reduce the mobility of the contaminants and potential for exposure at SEAD-16 and SEAD-17.

Source 10

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

DAIM-IS

5 MAR 2012

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database- Compliance-Related Cleanup (AEDB-CC) Data Calls

1. The official start of the FY12 Data Call for the semi-annual updates to AEDB-R and AEBD-CC was 12 Jan 12. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2 while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown in Enclosure 3. The Spring data submission covers the 1 Oct 11 – 31 Mar 12 period. The Fall data submission covers the 1 Apr 12 – 30 Sep 12 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations are responsible for updating the Army's database of record (AEDB-R) for all BRAC Installation Restoration [IR], Munitions Response [MR] and Compliance sites. The installations must update the cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 12. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. In addition, all CTC estimates must be released before the Spring data submission. BRACD performs Quality Control review of financial data for all BRAC. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

LTM Duration

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 12 for all BRAC installations.

c. BRAC Installation Action Plans (BIAP): Installations must update and finalize the BIAP for FY13 by 1 Oct 12 using the Installation Action Plan (IAP) tool located on Army Environmental Reporting Online (AERO).

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for updating the Army's database of record (AEDB-R and AEDB-CC) and preparing CTC estimates. The installations must update phase schedules, other non-cost data, CTC, cost requirements spread, and programmed funding spread for the Spring submission. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. The installation must update the phase schedules and other non-cost data for the Fall submission. Refer to Enclosure 2 for the schedule.

c. The Installation Action Plan (IAP) data gathering is the primary forum through which IR/MR site-level data, to include CTC estimates with requirements, and phase schedules are collected for input to AEDB-R and AEDB-CC. The IAP must accurately reflect the installation cleanup program. Installations must coordinate with AEC to establish validation dates and set process schedules. The AEDB-R and AEDB-CC must be updated and submitted within 20 working days following each installation's IAP validation call. The IAP, and therefore AEDB-R and AEDB-CC, must reflect supportable CTC requirements with proper supporting documentation. The IAP process schedule is located on AERO.

4. Partial BRAC installations update: The AEDB-R business process does not easily support the Partial BRAC installations. These BRAC sites must follow the same requirements as discussed in paragraph 2. Environmental Restoration, Army (ER,A) funded sites must follow the same requirements as outlined in paragraph 3. The BRAC and Active installation points of contact (POC) should coordinate installation submission for the Spring data submission. The installation must be aware of the schedule provided in Enclosure 3 for partial BRAC installations. The BRAC POC will update phase schedules during the Fall data call but Active POC will not need to perform any updates during the Fall data call.

DAIM-IS
SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database-Compliance-Related Cleanup (AEDB-CC) Data Calls

5. Suspense Dates:

Suspense	Action
08-Apr-12	Spring data Active, CC, non-BRAC Excess/BRAC Installation submit to Oversight level
15-Apr-12	Spring data Oversight level submit to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug 12	Fall data Active, CC, non-BRAC Excess Oversight level to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug-12	Fall data BRAC Installation submit to Oversight level
16-Sep-12	Fall data BRAC Oversight submit to BRACD Reviewing level
01-Oct-12	Final update to FY13 Installation Action Plan (IAP) via IAP tool

6. The USAEC will offer AEDB-R Refresher Training Workshops during the January-September 2012 timeframe. The FY12 Environmental Cleanup Reporting Workshop Training schedule to include course descriptions and scheduled sessions can be found on the AERO AEDB-R web page under the Documents portal at the following URL (https://www.us.army.mil/suite/page/587588).

7. The OACSIM POC for Active sites is Mr. Kevin Roughgarden, 571-256-9705; e-mail: Kevin.Roughgarden@us.army.mil. The OACSIM POC for BRAC sites is Ms. Karen Wilson, 703-545-2451, e-mail: Karen.s.Wilson38.civ@mail.mil. Enclosure 5 provides specific contacts for technical, reporting, and program management assistance.

Diane M. Randon

DIANE M. RANDON
Director, Installation Services

5 Encls
1. AEDB-R FY12 Data Call Schedule Legacy BRAC/BRAC05
2. AEDB-R and AEDB-CCFY12 Data Call Schedule Active, CC and Non-BRAC Excess
3. AEDB-R FY12 Data Call Schedule Partial BRAC
4. Developing and Updating Cost-to-Complete (CTC) Estimates
5. AEDB-R Specific Contracts for Technical, Reporting, and Program Management Assistance

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
FY11	1.014
FY10	1.0272
FY09	1.0354
FY08	1.0509
FY07	1.0762

ESCALATION FACTOR

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

SEAD 009

Phase	2013	2014	2015	2016	2017	2018		OUTYR
LUC MST	61	61	61		61	61	305	1167
5yr				100				500
C.T.O	70	70	70	80	7	7	413	185
	68	68	66	108	68	68	448	1857

2,300

Estimate Documentation Report

No site closeout

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 009 FY12

Project:

Project ID: SEAD-9
Project Name: SEAD-9
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
Report Option: Fiscal

Description

Multiple Sites - these sites were grouped into sites that will proceed to a No Action ROD or No Further Action ROD after acceptance of PRAP.

Site: SEAD- 9 Old Scrap Wood Pile

1. Record of Decision for Twenty No Action SWMUs (SEADs 7, 9, 10, 18, 19, 20, 21, 22, 23, 33, 35, 36, 37, 42, 47, 49, 51, 53, 55, 65, and 68) and Eight No Further Action SWMUs (SEADs 28, 29, 30, 31, 32, 34, 60, and 61) September 2003
2. Final ROD For Seventeen SWMUs Requiring Institutional Controls, SEADs- 13, 39, 40, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, 122E; July 2007
3. Final PRAP Five Former SWMUs- 1, 2, 5, 24 and 48, October 2007
4. Professional judgment based on site knowledge
5. Final ROD for sites requiring Institutional Controls in Planned Industrial/Office Development or Warehousing Area, July 2004

Estimate Documentation Report

Industrial/Office Development or Warehousing Area, July 2004

NOTE:
1. SEAD-1 and SEAD-2 and SEAD-67 are included with this site for LTM.

All LUCs, Well Abaondonment, and Five year reviews have contract cost documentation.

Additional site information:

RACER Assumptions:

Site Closeout Documentation (LTM)
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-9
Site Name: Old Scrap Wood Pile (Multiple sites)
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD- 9 Old Scrap Wood Pile .

LUC operation period to run from 2010 through 2047.
Support Team: Stephen M. Absolom- SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Record of Decision for Twenty No Action SWMUs (SEADs7,9,10,18,19,20,21,22,23,33,35,36,37,42,47,49,51,53,55,65, and 68) and Eight No Further Action SWMUs (SEADs 28,29,30,31,32,34,60, and 61) September 2003
2. Draft Proposed Plan No Action/No Further Action for SWMU's SEAD-13, 39, 40, 43, 44A, 44B, 56, 67, and 122B at the Seneca Army Depot Activity, March 2005
3. Draft PRAP For Seventeen SWMUs Requiring Institutional Controls, SEADs-13,39,40,43/56/69,44A,44B,52,62,64B,64C,64D,67,122B,122E; October 2005
4. Draft PRAP No Action/Further Action for SWMUs SEAD-58 and SEAD-63; October 2005
5. Professional judgment based on site knowledge

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541

Estimate Documentation Report

Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2012

Estimator Signature: **Date:**

Reviewer Information
Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 03/21/2012

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Site Closeout Documentation		$21,560	$54,740
	Total Cost:	$21,560	$54,740

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Site Closeout Documentation
Description: Site close out documentation for Multiple Sites, SEAD 9.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0

Total Marked-up Cost: $54,740

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	2	EA
Kick Off/Scoping Meetings: Travel		Yes	n/a
Kick Off/Scoping Meetings: Travelers		2	EA
Kick Off/Scoping Meetings: Days		5	Days
Kick Off/Scoping Meetings: Air Fare		0	$
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	2	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	2	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a
Long Term Document Storage		No	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for AOC SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17)

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 system was used to estimate the annual ground water monitoring testing and site close out documentation after well decommissioning. Five-year reviews are required by the Record of Decision (Source 1). Land Use Controls (LUCs) and GW monitoring are required until soil and ground water standards are met (Source 1).The next five-year review will occur in 2016. GW monitoring will occur for approximately 15 years in order to provide statistical basis to terminate the requirement. GW sampling started in FY07. Five-year review and LUC requirement costs are now included with site SEAD 009 and all LUC reporting is combined in a single site document preparation for Seneca Army Depot.

Site: SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17) This AOC consists of two ammunition deactivation furnaces. The AOC is LTM requiring the testing for ground water and management of Land Use Controls until soil and ground water standards are met.

Source:
1. Final ROD for SEAD-16 and SEAD-17 March 2006
2. ACSIM Data Call Memo, dated 5 March 2012.

RACER Assumptions:

GW Testing:

1. Number of wells: 12
2. Depth: 15 feet
3. Diameter: 2”
4. Formation type: Unconsolidated
5. Method: Overdrill/removal
6. Testing annually for metals

Well Abandonment /Site Closeout Documentation (LTM phase):

Well Abandonment:

1. Number of wells: 12
2. Depth: 15 feet
3. Diameter: 2"
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Site Completion Documentation: Well Abandonment:

1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports--all RACER default values
4. Documents will be stored for 30 years

Cost Summary	**SEAD-001-R-01 (SEAD-16/17)**
GW Testing (RACER)	$223,366
Well Abandonment/Site Closeout (RACER)	$80,083
Total Site Cost	**$303,449**

Material Change: Yes
Reason: Change in reporting 5-year review from 1 to 2. GW testing program is adding 10 years additional monitoring.

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012
Date

FINAL
RECORD OF DECISION

Source 1

FOR

THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND THE ACTIVE DEACTIVATION FURNACE (SEAD-17)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
150 Federal St.
4th Floor
Boston, Massachusetts

Contract Number: DACA87-95-D-0031
Delivery Order 003
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

March 2006

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

The Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (USEPA's) selected remedy for SEAD-16 and SEAD-17, located at the Seneca Army Depot Activity (SEDA or the Depot) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Director of the National Capital Region Field Office, and the USEPA Region II have been delegated the authority to approve this Record of Decision (ROD). The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have concurred with the selected remedy.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The State of New York, through the NYSDEC and NYSDOH, has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect human health or the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from SEAD-16 and SEAD-17, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for SEAD-16 and SEAD-17 addresses contaminated soil, building debris, and groundwater. The selected remedy will result in the removal of soil and groundwater as a pathway

for potential receptors. Groundwater will be monitored to ensure that soil contamination left on-site does not further degrade groundwater quality.

The elements that compose this remedy include:

- Conduct additional sampling as part of the pre-design sampling program to further delineate the areas of excavation;
- Remove, test, and dispose of the SEAD-16 building debris off-site;
- Excavate approximately 275 cubic yards (cy) of ditch soil to a depth of 1 foot (ft.) with lead concentrations greater than 1250 mg/Kg until cleanup standards are achieved;
- Excavate approximately 1760 cy of surface soils to a depth of 1 ft. at SEAD-16 with lead concentrations greater than 1250 mg/Kg, and polycyclic aromatic hydrocarbon (PAH) and metal concentrations greater than risk-based derived cleanup standards listed below and in **Table 1-1**;
- Excavate approximately 67 cy of subsurface soils to a depth of 2 ft. to 3 ft. at SEAD-16 (areas around SB16-2, SB16-4, and SB16–5) with lead concentrations greater than 1250 mg/Kg, and PAH and metal concentrations greater than risk-based derived cleanup standards listed below and in **Table 1-1** (**Figure 1-1**);
- Excavate approximately 2590 cy of surface soils to a depth of 1 ft. at SEAD-17 with lead concentrations greater than 1250 mg/Kg and metal concentrations greater than risk-based derived cleanup standards listed below (**Table 1-1**) (**Figure 1-2**);
- Stabilize excavated soils from SEAD-16 and SEAD-17 and building debris from SEAD-16 exceeding the toxicity characteristic leaching procedure (TCLP) criteria in order to attain Land Disposal Restrictions (LDR);
- Dispose of the excavated material in an off-site landfill;
- Backfill the excavated areas with clean backfill;
- Conduct groundwater monitoring at SEAD-16 and SEAD-17 until concentrations are below the GA criteria;
- Remediate material potentially presenting an explosive hazard and munitions and explosives of concern to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or to put into place land use restrictions as may be required by DDESB;
- Submit a Completion Report following the remedial action;
- Establish and maintain land use controls (LUCs) to prevent access to or use of the groundwater and to prevent residential use until cleanup standards are met; and
- Complete a review of the selected remedy every 5 years (at minimum), in accordance with Section 121(c) of the CERCLA.

GW monitoring

LUCs

5 year review

Cleanup Standards for Industrial Use at SEAD-16 and SEAD-17

COMPOUNDS	SOIL CLEANUP GOAL
Polycyclic Aromatic Hydrocarbons (PAHs)	
Benzo(a)anthracene (µg/Kg)	20,417
Benzo(a)pyrene (µg/Kg)	2,042
Benzo(b)fluoranthene (µg/Kg)	20,417
Benzo(k)fluoranthene (µg/Kg)	50,000
Chrysene (µg/Kg)	50,000
Dibenz(a,h)anthracene (µg/Kg)	2,042
Indeno(1,2,3-cd)pyrene (µg/Kg)	20,417
Metals	
Antimony (mg/Kg)	29
Arsenic (mg/Kg)	20
Cadmium (mg/Kg)	14
Copper (mg/Kg)	331
Lead (mg/Kg)	1250
Mercury (mg/Kg)	0.54
Thallium (mg/Kg)	2.6
Zinc (mg/kg)	773

To complete Resource Conservation and Recovery Act (RCRA) closure of the deactivation furnace at SEAD-17, the Army will either further decontaminate or demolish and dispose off-site the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).

SEAD-16 AND SEAD-17 Land Use Control (LUC) Performance Objectives

The LUC performance objectives for SEAD-16 and SEAD-17 are to:

- Prevent access to or use of the groundwater until cleanup levels are met; and
- Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities.

The LUCs would be implemented over the area bounded by the boundary at SEAD-16 (**Figure 1-1**) and SEAD-17 (**Figure 1-2**). The boundary of SEAD-16 is defined as the fence; SEAD-17 is bounded by the fence to the east and by natural boundaries, such as ditches. It should be noted that land within the Planned Industrial/Office Development (PID) area, which includes SEAD-16 and SEAD-17, is also subject to a separate Proposed Plan and ROD that include institutional controls (ICs) ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004)]. Groundwater use restrictions will continue until groundwater constituent concentrations have been reduced to levels that allow for unlimited exposure and unrestricted use. With USEPA approval, once groundwater cleanup standards are achieved, the groundwater use restrictions may be eliminated.

To implement the Army's remedy, which includes the imposition of LUCs, a LUC Remedial Design for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

- The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

State Concurrence

NYSDOH forwarded a letter of concurrence regarding the selection of a remedial action to NYSDEC, and NYSDEC, in turn, forwarded to USEPA a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence has been placed in **Appendix B.**

Declaration

CERCLA and the NCP require each selected remedy to be protective of human health, public welfare, and the environment; be cost effective, comply with other statutory laws; and use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The selected remedy is consistent with CERCLA and the NCP and is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions. This remedy also reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants.

Because this remedy may result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for an indeterminate period, a statutory review will be conducted every 5 years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

constituent concentrations have been reduced to levels that allow for unlimited exposure and unrestricted use. With USEPA approval, once groundwater cleanup standards are achieved, the groundwater use restrictions may be eliminated.

To implement the Army's remedy, which includes LUCs, a LUC RD for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of ECL Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of SEAD-16's and SEAD-17's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC RD will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the FFA.

The present worth cost of this alternative is $3,109,400. The capital cost and the present worth O&M cost of Alternative 4 are $1,699,900 and $1,409,500, respectively.

chosen remedy

In comparison to other remedies considered in the FS, Alternative 4 has the highest overall ranking. While it does not rank highest for any single evaluation criterion, as Alternatives 2 and 6 do, neither does it rank the lowest for any evaluation criteria considered, which each of the other intrusive alternatives did. Alternative 4 ranks second of all the alternatives for long-term effectiveness and permanence and reduction of mobility of contaminants. It also ranks highest of the three alternatives (2, 4, and 6) for technical feasibility and overall cost. The preferred alternative will eliminate source soils from further impacting SEAD-16 and SEAD-17 by preventing contact with receptors and migration of contaminants to surface water and groundwater. It is a cost-effective, readily available alternative that does not require long-term maintenance aside from groundwater monitoring and maintenance of LUCs, such as groundwater restrictions, and residential/daycare land use restrictions; and, the alternative can be implemented quickly to provide short-term effectiveness. Finally, it is a permanent solution that would significantly reduce the mobility of the contaminants and potential for exposure at SEAD-16 and SEAD-17.

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

conducted using low flow sampling techniques, resulting in high turbidity samples and elevated metals results. A subsequent round of sampling (the second RI round) was completed to confirm that with low turbidity, metals were not of concern in the groundwater at SEAD-17.

The table below provides a comparison of the second RI round of sampling to the maximum SEDA background concentrations at SEAD-17.

Parameter	Max. Det. in 2nd RI Round (µg/L)	Max. SEDA Background (µg/L)
Aluminum	386	42,400
Iron	572	69,400
Manganese	73.8	1,120
Sodium	30,100	59,400

The table above shows that all the metals detected were at concentrations below SEDA background levels. Based on these results, it is believed that the groundwater has not been impacted. The monitoring round proposed in this section will confirm this.

6.3 Long Term Monitoring

Groundwater monitoring will be performed as part of the SEAD-16 and SEAD-17 post-closure operations. Seven monitoring wells are located at SEAD-16, and five monitoring wells are located at SEAD-17. All 12 wells will be sampled for metals.

6.3.1 Monitoring Strategy and Well Locations

SEAD-16

The seven existing monitoring wells at SEAD-16 will be used for groundwater monitoring: MW16-1 through MW16-7 (see **Figure 6-3** for well locations). **Table 6-1** provides well construction details. Wells MW16-3, MW16-4, MW16-6 and MW16-7 are located within the excavation boundaries. These wells will be protected during excavation. If any well is compromised during excavation activities, it will be removed and replaced.

Though it is believed that groundwater generally flows in a southwesterly direction at SEAD-16, groundwater elevation data indicate that there may be a regional high south west of the Building 311, which could create local fluctuations in groundwater flow direction. As a result, it is difficult to determine which wells are upgradient or downgradient of the site. Instead, Parsons will identify wells relative to their proximity to the soil excavation areas. Three wells, MW16-1, MW16-2, and MW16-5, will monitor the quality of the groundwater outside the excavation areas. Monitoring wells MW16-3, MW16-4, MW16-6, and MW16-7 will monitor the groundwater quality at locations within the excavation area.

6.0 POST-CLOSURE MONITORING AND MAINTENANCE PLAN

6.1 Introduction

This section presents a Post-Closure Monitoring and Maintenance Plan (PCMMP) for the post-remediation monitoring and maintenance activities to be performed at SEAD-16 and SEAD-17. The objective of post-closure monitoring is to monitor the groundwater until either NYSDEC Class GA groundwater standards are met; or until the results show concentrations are consistent with background.

Under the ROD for SEAD-16 and SEAD-17, there is a requirement to establish and maintain land use controls to prevent access to or use of the groundwater at the site until cleanup standards are met. In addition, because SEAD-16 and SEAD-17 are part of the Planned Industrial/Office Development (PID) Area, these sites are subject to institutional controls (IC) in a separate Proposed Plan and ROD, ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004) signed on September 30, 2004]. With USEPA approval, once groundwater cleanup standards are achieved for the entire PID area, the groundwater use restrictions may be eliminated.

Monitoring and maintenance activities will be conducted as part of the approved remedy for these sites. This section has been prepared in accordance with 40 Code of Federal Regulations (CFR) 265.118 regarding the contents of post-closure plans.

This PCMMP provides the following:

- Overview of site hydrogeologic conditions;
- Description of the monitoring plan and procedures;
- Summary of required maintenance activities, and
- Reporting requirements.

6.2 Site Hydrogeology and Impacts

The hydrogeologic setting for SEAD-16 and SEAD-17 has been described in detail in Sections 3.1.6 and 3.2.6 of the "Final Remedial Investigation (RI) Report at the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)" (Parsons, March 1999). A brief summary of hydrogeologic conditions and chemical impacts found in the RI Report is presented below for each site.

SEAD 001-R-01

Phase	2013	2014	2015	2016	2017	2018		OUTYR
GW monite	23	23	23	23	23	23		85
well aband CO								80
	23	23	23	23	23	23		165

228 ~~233~~

40

~~304~~ 303

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 001-R-01 FY12

Project:

Project ID: SEAD-001-R-01
Project Name: SEAD-001-R-01 Deactivation Furnaces
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
Report Option: Fiscal

Description

SEAD-001-R-01 Deactivation Furnaces This MMR site was known as SEAD-16 & 17

Since this site is a Military Munitions Rule site, some requirements are captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Long Term Monitoring.

Site: SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17)

Source: 1.Final ROD for the Abandon Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), March 2006
2. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
3. Professional judgment based on site knowledge.

Estimate Documentation Report

RACER Assumptions:

Site Closeout Documentation (LTM phase):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Well Abandonment (LTM phase):
1. Number of wells: 12
2. Depth: 15 feet
3. Diameter: 2"
4. Unconsolidated
5. Overdrill/removal

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-001-R-01
Site Name: Deactivation Furnaces
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-001-R-01 Deactivation Furnaces. MMR site (alias SEAD-16/17) will require Long Term Maintenance to include 5- Year Review and Site Closeout Documentation, and Land Use Controls. This estimate is for Long Term Monitoring.
Support Team: Stephen M. Absolom - BEC for Seneca Army Depot
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1.Final ROD for the Abandon Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), March 2006
2. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
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Estimate Prepared Date: 03/21/2012

Estimator Signature: **Date:**

Estimate Documentation Report

Reviewer Information

Reviewer Name: Stephen Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: Seneca Army Depot
5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 03/21/2012

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Groundwater Monitoring		$122,785	$223,435
LTM #2 Site Close Out and Well Abandonment		$36,131	$80,083
	Total Cost:	$158,916	$303,518

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Groundwater Monitoring
Description: Additional Groundwater monitoring required through six five year reviews for Metals.

Start Date: August, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
MONITORING	Yes	100	0

Total Marked-up Cost: $223,435

Technologies:

Estimate Documentation Report

Technology Name: **Monitoring (# 1)**
User Name: **MONITORING**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Model Name		MONITORING	n/a
Groundwater		Yes	n/a
Surface Soil		No	n/a
Surface Water		No	n/a
Subsurface Soil		No	n/a
Sediment		No	n/a
Soil Gas		No	n/a
Air		No	n/a
Site Distance (One-way)		0	MI
Safety Level		D	n/a
Groundwater			
Required Parameters			
Average Sample Depth		15	FT
Samples per Event (First Year)		12	n/a
Samples per Event (Out Years)		12	n/a
Number of Events (First Year)		1	n/a
Number of Events (Out Years)		1	n/a
Number of Years (Out Years)		9	n/a
Secondary Parameters			
Primary Analytical Template	System Water - Metals	System Water - Metals	n/a
Secondary Analytical Template	None	None	n/a
Turnaround Time	Standard (21 Days)	Standard (21 Days)	n/a
Data Package/QC	Stage 1	Stage 1	n/a
Sampling Method	Existing Wells - Low Flow Pump	Existing Wells - Low Flow Pump	n/a
Number of Wells/Day	8	12	EA
Contain Purge Water	Yes	Yes	n/a
QA/QC			
Secondary Parameters			
Split Samples	1: 10	1: 10	EA
Field Duplicate Samples	1: 10	1: 10	EA

Estimate Documentation Report

Technology Name: **Monitoring (# 1)**
User Name: **MONITORING**

Description	*Default*	*Value*	*UOM*
QA/QC			
Secondary Parameters			
Rinse Blanks (per Round)	1	1	EA
Trip Blanks (per Day)	0	0	EA
Matrix Spikes/Matrix Spike Duplicates	1: 20	1: 20	EA
Data Management			
Secondary Parameters			
Monitoring Plan	Standard	Standard	n/a
Lab Data Review	Stage 1	Stage 1	n/a
Submit Data Electronically	Yes	Yes	n/a
Monitoring Reports	Abbreviated	Abbreviated	n/a

Comments:

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2 Site Close Out and Well Abandonment
Description: Well abandonment assumed 12 wells, 2" diameter, 15 ft deep, unconsolidated, overdrill/removal.

Start Date: October, 2042
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $80,083

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		Yes	n/a
Number of Boxes		5	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		12	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803 at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. The Draft Record of Decision identifies CERCLA requirements for LTM (Source 1).

Site: SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803. The AOC encompasses the former Special Weapons Storage site. Classified components were buried on site after demilitarization. Painting activity within the AOC resulted in soil and ground water contamination. Exit strategy is to restrict use of building 813/814 until a vapor intrusion study is performed by a future reuser and restrict the use of ground water until cleanup standards are met. LUC duration is estimated to be 30 years.

Source:
1. Draft Record of Decision, SEAD 12 and SEAD 72, February 2012 (CERCLA Action)
2. Owner cost from RACER
3. ACSIM Data Call Memo, 05 March 2012.

Owner Support Cost Assumptions:
Owner support costs, which are not included in CERCLA Decision Documents, are calculated to be 11% of Project Cost as described in RACER.

Cost Summary SEAD-12

LUC Costs (Source 1) $6000/year x 30 years.	$180,000
LTM (Source 2)	
Owner Support Cost	
$180,000 x 11% = $19,800	$19,800
Total Site Cost	**$199,800**

Material Change: Yes

Reason: Eliminated Site Closeout Cost per guidance and Draft ROD have updated cost.

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012
Date

Source 1

DRAFT
RECORD OF DECISION

FOR

THE RADIOACTIVE WASTE BURIAL SITES (SEAD-12) AND THE MIXED WASTE STORAGE FACILITY (SEAD-72)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA 35816

Prepared By:

Parsons
100 High Street, 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0031
EPA Site ID: NY0213820830
NY Site ID: 8-50-006

February 2012

since extensive coordination with local, state, and regional agencies would be required in the attempt to support and justify no remedial action at SEAD-12.

Alternative 2 would be slightly more difficult to implement than Alternative 1 because it requires the implementation, maintenance, oversight, and annual reporting of the continuing effectiveness of the environmental easement and the preparation, submittal, and approval of an environmental easement implementation plan.

Alternative 3 would be more difficult to implement than Alternative 2. Nonetheless, technologies for the building demolition, soil excavation, and characterization, transport, and disposal of excavated soil under Alternative 2 are mature and readily available. In addition, a licensed off-site landfill capable of accepting the building debris and soil from SEAD-12 would be needed for Alternative 3.

10.6 COST

Capital costs, operating costs, and administrative costs were estimated for Alternatives 1, 2, and 3. Capital costs include those costs for professional labor, construction and equipment, field work, monitoring and testing, and treatment and disposal. Operating costs include costs for administrative and professional labor, monitoring, and utilities. Administrative costs include the costs for land use restrictions. The present worth cost associated with all alternatives is calculated using a discount rate of seven percent (7%) and a 30-year time interval for Alternative 2 and five years for Alternative 3. The estimated capital, operation, maintenance, and monitoring, and the present-worth costs are presented below.

Alternative	Capital Cost	Annual LTM Costs	Total Present-Worth Costs
1	$0	$0	$0
2	$0	$6,000	$160,767
3	$440,000	$20,000	$522,000

Alternative 1 (no action) is the least costly alternative and incurs no cost for SEAD-12. The costs for the Buildings 813/814 area remediation are $160,767 and $522,000 for Alternative 2 and Alternative 3, respectively.

10.8 STATE ACCEPTANCE

NYSDEC concurs with the preferred remedial alternative (i.e., Alternative 2) for SEAD-12.

10.9 COMMUNITY ACCEPTANCE

Community acceptance of the preferred alternative for SEAD-12 and SEAD-72 will be assessed in the ROD following review of the public comments received on the Proposed Plan.

11.0 SELECTED REMEDY

SEAD-12 is suitable for unrestricted use, exclusive of the area shown in **Figure 1-1,** where data are needed to assess potential hazards and risks that may exist due to VOC vapor intrusion into buildings or re-contamination of soil and groundwater due to VOC migration from beneath the building slabs. Since TCE and other VOCs were detected in the soil underlying Buildings 813/814, the Army is proposing to reduce potential risks, if any in fact exist, that may be associated with the potential outward migration of these hazardous substances.

Both the environmental easement (Alternative 2) and the Buildings 813/814 vapor intrusion study and building demolition (Alternative 3) alternatives were evaluated together with the no-action alternative (Alternative 1) for SEAD-12. Based on the comparative alternative analysis, Alternatives 2 and 3 both satisfy the requirements of CERCLA Section 121, 42 U.S.C. Section 9621, and have similar performance with respect to the NCR's nine evaluation criteria, 40 CFR Section 300.430(e)(9). The costs are $160,767 and $522,000 for Alternative 2 and Alternative 3, respectively. The cost of Alternative 3 is approximately seven times larger than the cost for Alternative 2. Alternative 2 is comparatively cost effective in reducing potential risks associated with indoor air exposure. As a result, Alternative 2 is the recommended alternative.

In summary, the preferred remedy at SEAD-12 is to establish an environmental easement to prohibit access to, and use of, Buildings 813/814, or any newly constructed building overlying the footprint of the existing buildings, until such time as data are provided to show that potential risks from volatile organic compound, including trichloroethene, intrusion do not pose unacceptable risks to future receptors within the building(s). Additionally, a separate LUC that prohibits access to and use of groundwater in the vicinity of Buildings 813/814 (as shown in **Figure 1-1**) would also be implemented and maintained.

The vapor intrusion easement will state that an investigation of vapor intrusion potential and indoor air quality must be performed, and the results of the surveys must be reviewed and approved by the Army, EPA, and NYSDEC before the buildings, or any newly constructed buildings in the designated area, are occupied. The groundwater access and use restriction will be maintained until new analytical data are provided to, and approved by, the Army, EPA, and NYSDEC to indicate that groundwater in the vicinity of Building 813 and 814, and former well MW12-37 meets GA groundwater standards.

For SEAD-72, the selected remedy is No Further Action, as this facility has been successfully closed in accordance with an approved RCRA Closure Plan.

To implement the selected remedy for SEAD-12, which includes the imposition of LUCs at SEAD-12, an LUC RD Plan will be prepared which is consistent with Paragraphs (a) and (c) of the New York State ECL Article 27, Section 1318: Institutional and Engineering Controls. The LUC RD Plan will include: a Site Description; the Institutional Control (IC) Land Use Restrictions; the LUC Mechanism to ensure that the land use restrictions are not violated in the future; implementation and maintenance actions, including periodic inspections; periodic certifications that the institutional engineering controls are in-place and being maintained by the owner or persons implementing the remedy; and, Reporting/Notification requirements. In addition, the Army will prepare an environmental easement for SEAD-12, consistent

UNDER MARKUP TEMPLATES

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

OWNER COST

SOURCE 2

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Source 3

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

DAIM-IS

5 MAR 2012

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database- Compliance-Related Cleanup (AEDB-CC) Data Calls

1. The official start of the FY12 Data Call for the semi-annual updates to AEDB-R and AEBD-CC was 12 Jan 12. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2 while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown in Enclosure 3. The Spring data submission covers the 1 Oct 11 – 31 Mar 12 period. The Fall data submission covers the 1 Apr 12 – 30 Sep 12 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations are responsible for updating the Army's database of record (AEDB-R) for all BRAC Installation Restoration [IR], Munitions Response [MR] and Compliance sites. The installations must update the cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 12. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. In addition, all CTC estimates must be released before the Spring data submission. BRACD performs Quality Control review of financial data for all BRAC. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

LTM DURATION

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 12 for all BRAC installations.

c. BRAC Installation Action Plans (BIAP): Installations must update and finalize the BIAP for FY13 by 1 Oct 12 using the Installation Action Plan (IAP) tool located on Army Environmental Reporting Online (AERO).

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for updating the Army's database of record (AEDB-R and AEDB-CC) and preparing CTC estimates. The installations must update phase schedules, other non-cost data, CTC, cost requirements spread, and programmed funding spread for the Spring submission. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. The installation must update the phase schedules and other non-cost data for the Fall submission. Refer to Enclosure 2 for the schedule.

c. The Installation Action Plan (IAP) data gathering is the primary forum through which IR/MR site-level data, to include CTC estimates with requirements, and phase schedules are collected for input to AEDB-R and AEDB-CC. The IAP must accurately reflect the installation cleanup program. Installations must coordinate with AEC to establish validation dates and set process schedules. The AEDB-R and AEDB-CC must be updated and submitted within 20 working days following each installation's IAP validation call. The IAP, and therefore AEDB-R and AEDB-CC, must reflect supportable CTC requirements with proper supporting documentation. The IAP process schedule is located on AERO.

4. Partial BRAC installations update: The AEDB-R business process does not easily support the Partial BRAC installations. These BRAC sites must follow the same requirements as discussed in paragraph 2. Environmental Restoration, Army (ER,A) funded sites must follow the same requirements as outlined in paragraph 3. The BRAC and Active installation points of contact (POC) should coordinate installation submission for the Spring data submission. The installation must be aware of the schedule provided in Enclosure 3 for partial BRAC installations. The BRAC POC will update phase schedules during the Fall data call but Active POC will not need to perform any updates during the Fall data call.

DAIM-IS
SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database-Compliance-Related Cleanup (AEDB-CC) Data Calls

5. Suspense Dates:

Suspense	Action
08-Apr-12	Spring data Active, CC, non-BRAC Excess/BRAC Installation submit to Oversight level
15-Apr-12	Spring data Oversight level submit to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug 12	Fall data Active, CC, non-BRAC Excess Oversight level to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug-12	Fall data BRAC Installation submit to Oversight level
16-Sep-12	Fall data BRAC Oversight submit to BRACD Reviewing level
01-Oct-12	Final update to FY13 Installation Action Plan (IAP) via IAP tool

6. The USAEC will offer AEDB-R Refresher Training Workshops during the January-September 2012 timeframe. The FY12 Environmental Cleanup Reporting Workshop Training schedule to include course descriptions and scheduled sessions can be found on the AERO AEDB-R web page under the Documents portal at the following URL (https://www.us.army.mil/suite/page/587588).

7. The OACSIM POC for Active sites is Mr. Kevin Roughgarden, 571-256-9705; e-mail: Kevin.Roughgarden@us.army.mil. The OACSIM POC for BRAC sites is Ms. Karen Wilson, 703-545-2451, e-mail: Karen.s.Wilson38.civ@mail.mil. Enclosure 5 provides specific contacts for technical, reporting, and program management assistance.

Diane M. Randon

DIANE M. RANDON
Director, Installation Services

5 Encls
1. AEDB-R FY12 Data Call Schedule Legacy BRAC/BRAC05
2. AEDB-R and AEDB-CCFY12 Data Call Schedule Active, CC and Non-BRAC Excess
3. AEDB-R FY12 Data Call Schedule Partial BRAC
4. Developing and Updating Cost-to-Complete (CTC) Estimates
5. AEDB-R Specific Contracts for Technical, Reporting, and Program Management Assistance

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES (CONT)

- **Site ID** and **Site Name** should be the same as what is in AEDB-R.
- Do **NOT** use the Site Close-out phase. No Close out
- Do **NOT** use User-Defined Technologies.
- Do **NOT** use User-Defined Assemblies.
- Do **NOT** use Army analytical templates. They are no longer updated. Use System Analytical Templates only.
- Use the **Template** method for setting up Sites and Phases.
- Do **NOT** escalate values across fiscal years.
- Phases in RACER™ estimates should be consistent with AEDB-R phases.
- Active, BRAC and Excess installations should **NOT** use a RACER™ generated MFR. Estimator must develop a standard MFR for upload to CTC site.

SEAD 012

Phase	2013	2014	2015	2016	2017	2018		OUTYR	
LVC	6	6	6	6	6	6		144	180
CTO	1	1	1	1	1	1		14	20
	7	7	7	7	7	7		158	200

4/2 ≥80.

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-25, Fire Training Area at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 system was used to estimate the cost of well abandonment and site close out. The groundwater monitoring at SEAD-25 began in May 2007 and LTM is in year six of a 10-year anticipated commitment. Four years remain. The W91DY-08-D-0003 task Order 0008, Modification 02 (Source 2) was used to estimate annual monitoring cost and year reviews. Monitoring cost is provided annually for four years (task 2) and the annual monitoring and five-year review are combined FY16 requiring a five-year review (task 24).

Site: SEAD-25, Fire Training Area. This AOC consists of the area where Fire training and demonstrations were conducted. Groundwater has been impacted by petroleum products. Natural attenuation is being used to treat the groundwater during RA(O). Land use controls will exist on the property until soil and groundwater meet the cleanup criteria.

Source:
1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. RFP W192Y-08-D-0003 Task Order 0008 and modification 02, 17 Feb 2012
3. Owner cost based on RACER.

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports to include all RACER default values
4. Two boxes of documents will be stored for 30 years

Well Abandonment (LTM):
1. Number of wells: 30
2. Depth of wells: 15 feet
3. Diameter of wells: 2 inches
4. Formation type: Unconsolidated
5. Method: overdrill/removal

Owner Support Assumptions:
Procurement, S&A, and Contract Closeout for non-RACER estimates are set at 11% of estimated cost and consistent with RACER guidance.

Cost Summary SEAD-25

LTM

GW Monitoring and LUC management
(RFP Contract Cost, Task 159: Source 2)
Cost $60,739.59
Cost = $60,739.59/yr X 3 yrs $182,219

GW monitoring, LUC management and 5 Year review
(RFP Contract Cost, Task 15B: Source 2)
Cost per event $62,213.
62,213 x 1 events (2016) $62,213

Well Abandonment/Site Closeout (RACER) $95,344

Owner Support Cost (Source #3) 11% of Cost

LTM Ground Water & 5 Yr review
($182,219+$62,213) x 0.11= $26,888 $26,888

Total Site Cost **$366,664**

Material Change: Yes.

Reason: Updated cost for G.W. sampling.

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012 Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

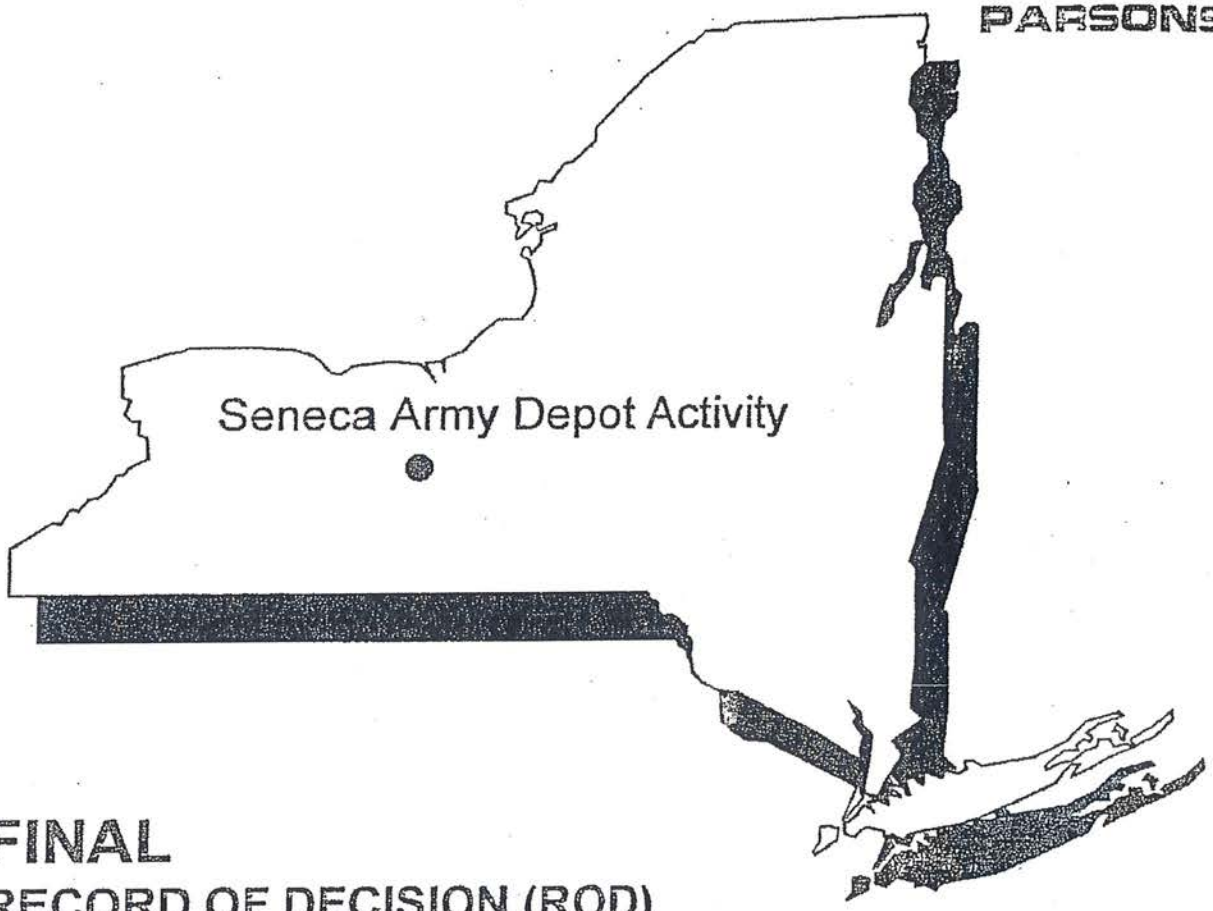
Signature 3/27/2012 Date

US Army, Engineering & Support Center
Huntsville, AL

Source 1

Seneca Army Depot Activity
Romulus, NY

PARSONS



FINAL

RECORD OF DECISION (ROD) THE FIRE TRAINING AND DEMONSTRATION PAD (SEAD 25) AND THE FIRE TRAINING PIT AND AREA (SEAD 26)

SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER NO. 0029

September 2004

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

SITE

The Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's and EPA's selected remedy for soil and groundwater at SEAD-25 and SEAD-26, located at the Seneca Army Depot Activity (SEDA) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Director of the National Capital Region Field Office, and the U.S. Environmental Protection Agency (USEPA) Region II have been delegated the authority to approve this Record of Decision (ROD); New York State Department of Environmental Conservation (NYSDEC) has concurred with the selected remedial action.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The State of New York, through the NYSDEC and the New York State Department of Health (NYSDOH), has concurred with the Selected Remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect the public welfare and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

11.0 SELECTED REMEDY

SEAD-25

While the goal of the remedial action is to have no residual contamination in soils above TAGM levels, remedial action success will be achieved when soils have been remediated to the level that eliminates an unacceptable risk to human health. Based on the evaluation of the various options, the U.S. Army recommends Alternative RA25-4R (Source Removal, Off-site Disposal, Long-Term Monitoring of Plume, and Sediment Removal) (**Figures 6-1** and **6-2**). The elements that compose the remedy include:

- Excavate soil at the source in an area approximately 60 feet by 100 feet to a depth of 6 feet (approximately 1,350 CY), as depicted in **Figure 6-2**;
- Excavate a volume of sediment approximately 780 feet long, 3 feet wide and 2 feet deep (approximately 175 CY) from the northwest ditch, as depicted in **Figure 6-2**;
- Dispose of excavated soils in an appropriate off-site facility;
- Dewater the excavation pit;
- Treat groundwater that is recovered during excavation and during dewatering of excavation pit with an on-site air stripper;
- Replace excavated soil with clean backfill and establish a ground cover to avoid soil erosion;
- Conduct groundwater monitoring of the plume until NYSDEC Class GA groundwater standards are achieved (approximately 10 years);
- Establish and maintain land use controls to prevent access to or use of groundwater until cleanup standards are met;
- Complete a review of the selected remedy every five-years (at minimum), in accordance with Section 121(c) of the CERCLA;
- Prepare a contingency plan that may include additional monitoring and air sparging of the plume, as necessary; and
- Once groundwater cleanup standards are achieved, the groundwater use restriction may be eliminated.

The frequency of long-term monitoring will be detailed in the RD plan. The cleanup standards for groundwater at the site are NYSDEC Class GA groundwater standards, presented in **Table 1-1B**. Until the contaminant levels in the groundwater meet the cleanup standards, a land use control (or institutional control) in the form of a groundwater use restriction will be a part of the remedy, as specified in the discussion of the remedy for SEAD-25.

A summary of the SEAD-25 and SEAD-26 Land Use Controls is provided below.

The present worth cost of this alternative is $922,200. The capital cost and the O&M cost of RA25-4R are $701,000 and $221,200, respectively.

MOD 2 SOURCE 2

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
U	1 | 25

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
02	17-Feb-2012	SEE SCHEDULE	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
US ARMY ENGINEERING & SUPPORT CENTER CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822	W912DY	DIRECTORATE OF CONTRACTING - HNC ATTN: JYWANYA DILLINGER 256-895-1151 HUNTSVILLE AL 35816	W912DY

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
PARSONS INFRASTRUCTURE & TECHNOLOGY GROU TODD HEINO 100 W WALNUT ST PASADENA CA 91124-0001		9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
	X	10A. MOD. OF CONTRACT/ORDER NO. W912DY-08-D-0003-0008
CODE 1BVK6 FACILITY CODE	X	10B. DATED (SEE ITEM 13) 17-May-2010

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer ☐ is extended, ☐ is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

☐ A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

☐ B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
FAR 52.243-4, CHANGES

☐ D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
Modification Control Number: a0ctcjd9121632

SEE SUMMARY OF CHANGES

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

The following have been added by full text:

MOD 02 NARRATIVE
This Task Order 0008, which contains Cost-Plus-Fixed-Fee task, is being issued to Parsons Infrastructure & Technology Group, Inc. to perform Implementation of the Long-Term Monitoring Plan for the Open Burning (OB) Grounds and Fire raining Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment of Existing Monitoring Wells at Various Sites Seneca Army Depot Activity Romulus, New York.

The modification makes the following changes:

a. Extend the period of performance until 31 March 2013.

b. Incorporate revised Performance Work Statement (PWS) dated 19 January 2012.

c. Add additional optional tasks 15A and 15B as stated in the revised PWS; the Government reserves the right to exercise these options at a later date.

d. Exercise optional task 15A as stated in paragraph 10.1A of the revised PWS.

As a result of this modification, the total task order funding is increased by $60,739.59 from $561,887.01 to $622,626.60 and the period of performance ends 31 March 2013. All other terms and conditions remain the same.

These adjustments are in accord and satisfaction and constitute compensation in full on behalf of the contractor and its subcontractors and suppliers, and/or for all costs and markups directly or indirectly attributed to the changes ordered herein, and for any delays caused by the Government prior to the execution of this modification.

SECTION A - SOLICITATION/CONTRACT FORM

The total cost of this contract was increased by $60,739.59 from $616,857.08 (EST) to $677,596.67 (EST).

SECTION B - SUPPLIES OR SERVICES AND PRICES

CLIN 0014 is added as follows:

- Trend plots for key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

site's TASK

10.1A (Optional Task 15A) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA:

a. Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observations indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

b. Preparation of the Annual Report. Following completion of the annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- **Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.**
- **Trend plots of groundwater elevation data for each of the monitoring wells.**
- **A potentiometric map of site groundwater.**
- **Complete tabulations of all chemical concentration data developed to date.**
- **Complete tabulations of all indicator parameter data developed to date.**
- **Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.**
- **Trend plots for key chemical concentration data developed for each of the key monitoring wells.**
- **Trend plots for all key indicator parameter data developed for each of the key monitoring wells.**
- **A recommendation of any changes (e.g. changing frequency of data collection, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.**

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

site's TASK

10.2B (Optional Task 15B) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA:

a. Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observations indicating possible deterioration of the well integrity shall be reported to the

Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

b. Preparation of the Annual Report. Following completion of the annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- **Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.**
- **Trend plots of groundwater elevation data for each of the monitoring wells.**
- **A potentiometric map of site groundwater.**
- **Complete tabulations of all chemical concentration data developed to date.**
- **Complete tabulations of all indicator parameter data developed to date.**
- **Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.**
- **Trend plots for key chemical concentration data developed for each of the key monitoring wells.**
- **Trend plots for all key indicator parameter data developed for each of the key monitoring wells.**
- **A recommendation of any changes (e.g. changing frequency of data collection, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.**

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

11.0 (Optional Task 16) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of the first semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Client:	U.S. Army Corps of Engineers			Parsons
Contract :	RFP W912DY-08-D-0003, Task Order 0008			TOTAL Summary Sheet Supporting Data Format
Project:	Long-Term Monitoring OB and FTA Annual LUC Evaluation Abandonment of Existing Wells			Printed: 07-Feb-12

		Labor Hours	Labor Cost	ODCs (excl. subs)	Subs	Fee	Total
First Optional Year	Opt Task 15A (a, b, c)	485	$38,868	$15,373	$3,150	$3,348	$60,740
Second Optional Year	Opt Task 15B (a, b, c)	485	$39,785	$15,846	$3,150	$3,432	$62,213
TOTALS		**970**	**$78,653**	**$31,220**	**$6,300**	**$6,780**	**$122,953**

TASK

COST

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

COST TO OWNER

SOURCE 3

Related Topics

- *Direct Costs*
- *Professional Labor Overhead / G&A*
- *Field Office Overhead / G&A*
- *Prime Contractor Profit*
- *Subcontractor Profit*
- *Contingency*
- *Markup Calculations*
- *Applying Markup Percentages*
- *Adjusting Markups for Each Technology*
- *Creating Custom Markup Templates*
- *Markups Report*

SEAD 025

Phase	2013	2014	2015	2016	2017	2018		OUTYR	
GW monitor	61	61	60						183
GWM. 5yr.				62					62
Site C.O.					95				95
GTO	5	5	5	5	7				27
	66	66	65	67	102				369

Estimate Documentation Report

OK

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 25 FY12

Project:

Project ID: SEAD-25
Project Name: SEAD-25
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
Report Option: Fiscal

Description

SEAD-25 & 26 - Fire Training and Fire Demonstration areas.

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of 5-year reviews, site close out, and LUCs.

Site: SEAD-25/26, Fire Training Areas

Source:
1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005
3. RFP W192Y-08-D-0003 Task Order 0008.
4. Guidance for LTM 5 year review.
5. Professional judgment based on site knowledge..

5. Professional judgment based on site knowledge..

Five year reviews have contract cost documentation.

Additional site information:

Five-Year Review:
1. 2 review cycles
2. Review cycle beginning in 2016 and the second in 2021
3. Low complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters

Land Use Controls
1. Tasks include Monitoring & Enforcement, and Modification/Termination
2. Monitoring & Enforcement parameters used are Report & Certifications annually
3. Modification/Termination parameters used are Document Evaluation, Modify LUCIP, Amend Decision Documents, and Termination Letters (all with Low complexity)

Site Closeout Documentation:
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-25
Site Name: Fire Training Area
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Long Term Management will include: 5-year Reviews, Site Closeout documentation, Well Abandonment, and Land Use Controls.

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia, Project Manager, U.S. Army Corps of Engineers
References: 1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2012

Estimator Signature: **Date:**

Reviewer Information

Estimate Documentation Report

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 03/21/2012

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM Site closeout and well abandonment		$49,724	$95,344
	Total Cost:	$49,724	$95,344

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM Site closeout and well abandonment
Description: Long Term Managememt includes site closeout documentation and well abandonment. Site closeout and well abandonment in last year of LTM phase.

Start Date: May, 2037
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $95,344

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Low	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	8	8	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		No	n/a

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		30	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. The DRAFT Record of Decision is used to document site requirements and cost. LUC review will occur annually for 30 years. Five-year reviews start in 2016. Annual review will not occur in years of five-year review.

Site: SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46)

Source:
1. DRAFT Record of Decision, dated February 2012.
2. Owner cost from RACER
3. ACSIM data call memo, dated 05 March 2012/Land Use Control.

Phase: LTM will be an Institutional Control,

Cost Summary	**SEAD-003-R-01 (SEAD-46/57)**
LTM	
Land Use Control – 12,000/yr (Source 1) 24 years	$288,000
5-year Review (Source 1) $75,000/event x 6 events	$450,000
	$738,000
Owner support cost (Source 2) 11% LUC Review & 5-year Review 738,000 x 0.11 =	$81,180
Total Cost	**$819,180**

Material Change: Yes

Reason: RD/RA no longer required and LUC cost for 30 years.

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012 Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012 Date

Source 1

DRAFT
RECORD OF DECISION

FOR

5 sites

SWMUs SEAD-46, SEAD-57, SEAD-007-R-01, SEAD-002-R-01 and SEAD-70

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
3300 SIDNEY BROOKS, BUILDING 532
BROOKS CITY-BASE, TX 78235-5122

Prepared By:

Parsons
100 High St., 4th Floor
Boston, Massachusetts 02110

Contract Number: FA8903-04-D-8675
Task Order: 0031
CDRL: A001C
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

February 2012

1.0 DECLARATION OF THE RECORD OF DECISION

Name and Location of Areas of Concern (AOCs)

Former 3.5-inch Rocket Range (SEAD-46)
Former Explosive Ordnance Disposal (EOD) Range (SEAD-57)
Former Building T-2110, Filled Area (SEAD-70)
Former EOD Area 2 and the former EOD Area 3 (both part of SEAD-002-R-001)
Former Grenade Range (SEAD-007-R-01)

Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for five historic solid waste management units (SWMUs) and Areas of Concern (AOCs) SEAD-46, SEAD-57, SEAD-70, SEAD 002-R-01, and SEAD 007-R-01 at the former Seneca Army Depot Activity (SEDA or Depot), located in Seneca County, New York, shown in **Figure 1-1**. The remedy selected for each of the identified AOCs was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. Section 9601, *et seq.* and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief of the Consolidations Branch, BRAC Division, and the Director of Emergency and the Director of the Remedial Response Division of EPA Region II have been delegated the authority to approve this ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A**.

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies identified in this ROD. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOCs Assessment

Four of the identified AOCs (i.e., SEAD-46, SEAD-57, SEAD-002-R-01, and SEAD-007-R-01) were subjects of a Munitions Response and CERCLA Closure action which included munitions and ordnance detection and removal activities followed by environmental sampling and analysis to assess residual levels of hazardous substance, contaminants, and pollutants present at the sites. An interim soil removal action followed by a focused confirmatory environmental sampling and analysis program was conducted at SEAD-70 to eliminate hazardous substances identified during an earlier Expanded Site Investigation (ESI) and risk

Description of the Selected Remedy

The selected remedy for SEAD-70 (Building T2110 – Filled Area) is No Further Action (NFA). This selection is based on the Army's and EPA's determination that this AOC does not pose a significant threat to human health or the environment. The location of SEAD-70 is shown in **Figure 1-2**.

The selected remedies for the former 3.5-inch Rocket Range (SEAD-46), the former EOD Range (SEAD-57), former EOD Areas 2 and EOD Area 3 (both part of SEAD-002-R-001), and the former Grenade Range (SEAD-007-R-01) are to implement, maintain, and monitor land use controls (LUCs) that prohibit the use of the property for residential housing, elementary and secondary schools, childcare facilities, or playgrounds. Current characterizations of the environmental media in the four munitions response AOCs indicates that residual levels of hazardous substances, and other chemical pollutants and contaminants are not sufficient to warrant any further mitigation or remediation efforts. The locations of SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 are also shown in **Figure 1-2**.

As the selected remedies for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 do not allow unrestricted use and unlimited exposures, the Army or its successors will be required to complete a review of the selected remedies at least once every 5 years, in accordance with Section 121(c) of the CERCLA.

The common LUC performance objectives for SEADs 46, 57, 002-R-01, and 007-R-01 are to prohibit the use of the land within the AOCs for residential housing, elementary and secondary schools, childcare facilities, or playground activities.

The Army shall implement, maintain, inspect, report on, and enforce the remedies described in this ROD. This ROD selects as the remedy for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 LUCs (i.e., residential land use limitations) to be imposed by an environmental easement at the time when land comprising SEAD-46, SEAD-57, SEAD 002-R-01, or SEAD 007-R-01 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the LUC remedies selected in this ROD, a LUC Remedial Design plan (LUC RD) will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In compliance with the State's ECL, the Army will grant an environmental easement for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the EPA will be identified in the environmental easement. A schedule for completion of the draft SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 LUC RD Plan will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer,

the Army, as the owner and operator of the property at SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01, will ensure that the LUCs are implemented by monitoring the property at SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 and restricting development or use on this property if inconsistent with the LUCs.

State Concurrence

NYSDEC forwarded to EPA a letter of concurrence regarding the selected remedy for SEAD-46, SEAD-57, SEAD-70, SEAD 002-R-01, and SEAD 007-R-01 (pending). This letter of concurrence has been placed in **Appendix B**.

Declaration

The remedies selected in this ROD are, as required by CERCLA and the NCP, protective of human health and the environment; cost effective; compliant with applicable or relevant and appropriate requirements, criteria or limitations promulgated under federal or state laws (ARARs) unless waived; and, use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The remedies identified for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 are recommended because there is a potential that MEC may remain undetected at the sites at locations that could not be identified using currently available geophysical and intrusive investigative and clearance technologies. A review of the AOCs and the selected remedies will be conducted within five years after the signing of this ROD to ensure that the remedy is, or will be, protective of human health and the environment, with consideration given to each AOC's continuing and planned future use.

The remedy identified for SEAD-70 does not result in hazardous substances and pollutants or contaminants remaining on-site. The selected remedy for SEAD-70 (NFA) is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at this AOC at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and five-year reviews are not necessary.

The estimated cost associated with implementing, monitoring, assessing and reporting on the continued suitability of the actions selected for SEADs 46, 57, 002-R-01, and 007-R-01 is $310,700 in total. There are no estimated costs for the implementation of the remedy selected (i.e., NFA) for SEAD-70.

7.0 SELECTED REMEDY

SEAD-57, SEAD-46, SEAD 007-R-01, and SEAD 002-R-001

Based on the results of the investigations and risk assessment completed for the site, the Army has selected to impose , maintain, and monitor LUCs that prohibits residential housing, elementary and secondary schools, childcare facilities or playgrounds at the former (EOD Range (SEAD-57), the former 3.5-inch Rocket Range (SEAD-46), the former Grenade Range (SEAD 007-R-01), and the former EOD Area 2 and the former EOD Area 3 (both part of SEAD 002-R-001). There may be a potential that MEC may remain undetected at the sites at locations that could not be identified using currently available geophysical and intrusive investigative and clearance technologies. Current characterizations of the environmental media in the four munitions response AOCs indicates that residual levels of hazardous substances, and other chemical pollutants and contaminants are not sufficient to warrant any further mitigation or remediation efforts.

As the selected remedies for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 do not allow unrestricted use and unlimited exposures due to the potential for MEC, the Army or its successors will be required to complete a review of the selected remedies at least once every 5 years, in accordance with Section 121(c) of the CERCLA.

The Army shall implement, maintain, inspect, report on, and enforce the remedies described in this ROD. This ROD selects as the remedy for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 LUCs (i.e., residential land use limitations) to be imposed by an environmental easement at the time when land comprising these four AOCs is transferred from Army ownership to another party; any pre-transfer use inconsistent with the LUCs is prohibited. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the LUC remedies selected in this ROD, a LUC Remedial Design plan (LUC RD) will be prepared which will provide for the recording of an environmental easement consistent with Paragraphs (a) and (c) of the New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the EPA will be identified in the environmental easement. A schedule for completion of the draft SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 LUC RD Plan will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer, the Army, as the owner and operator of the property at SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01, will ensure that the LUCs are implemented by monitoring the property at SEAD-46, SEAD-57, SEAD 002-R-01, and SEAD 007-R-01 and restricting development or use on this property if inconsistent with the LUCs.

The present worth cost associated with all alternatives is calculated using a discount rate of seven percent (7%) and a 30-year time interval. The present worth cost includes the cost to perform annual OM&M and

to conduct five-year reviews over the designated time period. There are no capital costs associated with the alternative. The estimated annual and present worth costs are summarized below.

SEAD-46, SEAD-57, SEAD-002-R-01, and SEAD-007-R-01 Selected Remedy (Land Use Controls) Costs

Capital Cost	$0
Annual OM&M Cost	$12,000
Five-Year Review Cost	$75,000
Present Worth Cost	$310,700
Construction Time	0 Month
Completion Time	1 Month

ANNUAL LUC COST
5 year review cost

The total present worth cost for the selected LUC remedy at the four AOCs is $310,700.

SEAD-70

Based on the results of the investigation, the recommended remedy for SEAD-70 (Building T2110- Filled Area) is No Further Action, with release of the property for unrestricted use and unlimited exposure. This selection is based on the Army's determination that the AOCs do not pose a significant threat to human health or the environment. No costs are associated with this remedy.

Source 2

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

COST TO OWNER

Related Topics

- *Direct Costs*
- *Professional Labor Overhead / G&A*
- *Field Office Overhead / G&A*
- *Prime Contractor Profit*
- *Subcontractor Profit*
- *Contingency*
- *Markup Calculations*
- *Applying Markup Percentages*
- *Adjusting Markups for Each Technology*
- *Creating Custom Markup Templates*
- *Markups Report*

Source 3

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

DAIM-IS

5 MAR 2012

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database- Compliance-Related Cleanup (AEDB-CC) Data Calls

1. The official start of the FY12 Data Call for the semi-annual updates to AEDB-R and AEBD-CC was 12 Jan 12. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2 while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown in Enclosure 3. The Spring data submission covers the 1 Oct 11 – 31 Mar 12 period. The Fall data submission covers the 1 Apr 12 – 30 Sep 12 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations are responsible for updating the Army's database of record (AEDB-R) for all BRAC Installation Restoration [IR], Munitions Response [MR] and Compliance sites. The installations must update the cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 12. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. In addition, all CTC estimates must be released before the Spring data submission. BRACD performs Quality Control review of financial data for all BRAC. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

Duration LTM

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 12 for all BRAC installations.

c. BRAC Installation Action Plans (BIAP): Installations must update and finalize the BIAP for FY13 by 1 Oct 12 using the Installation Action Plan (IAP) tool located on Army Environmental Reporting Online (AERO).

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for updating the Army's database of record (AEDB-R and AEDB-CC) and preparing CTC estimates. The installations must update phase schedules, other non-cost data, CTC, cost requirements spread, and programmed funding spread for the Spring submission. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. The installation must update the phase schedules and other non-cost data for the Fall submission. Refer to Enclosure 2 for the schedule.

c. The Installation Action Plan (IAP) data gathering is the primary forum through which IR/MR site-level data, to include CTC estimates with requirements, and phase schedules are collected for input to AEDB-R and AEDB-CC. The IAP must accurately reflect the installation cleanup program. Installations must coordinate with AEC to establish validation dates and set process schedules. The AEDB-R and AEDB-CC must be updated and submitted within 20 working days following each installation's IAP validation call. The IAP, and therefore AEDB-R and AEDB-CC, must reflect supportable CTC requirements with proper supporting documentation. The IAP process schedule is located on AERO.

4. Partial BRAC installations update: The AEDB-R business process does not easily support the Partial BRAC installations. These BRAC sites must follow the same requirements as discussed in paragraph 2. Environmental Restoration, Army (ER,A) funded sites must follow the same requirements as outlined in paragraph 3. The BRAC and Active installation points of contact (POC) should coordinate installation submission for the Spring data submission. The installation must be aware of the schedule provided in Enclosure 3 for partial BRAC installations. The BRAC POC will update phase schedules during the Fall data call but Active POC will not need to perform any updates during the Fall data call.

DAIM-IS
SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database-Compliance-Related Cleanup (AEDB-CC) Data Calls

5. Suspense Dates:

Suspense	Action
08-Apr-12	Spring data Active, CC, non-BRAC Excess/BRAC Installation submit to Oversight level
15-Apr-12	Spring data Oversight level submit to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug 12	Fall data Active, CC, non-BRAC Excess Oversight level to USAEC Reviewing level (for CC submit to Command level for approval)
31-Aug-12	Fall data BRAC Installation submit to Oversight level
16-Sep-12	Fall data BRAC Oversight submit to BRACD Reviewing level
01-Oct-12	Final update to FY13 Installation Action Plan (IAP) via IAP tool

6. The USAEC will offer AEDB-R Refresher Training Workshops during the January-September 2012 timeframe. The FY12 Environmental Cleanup Reporting Workshop Training schedule to include course descriptions and scheduled sessions can be found on the AERO AEDB-R web page under the Documents portal at the following URL (https://www.us.army.mil/suite/page/587588).

7. The OACSIM POC for Active sites is Mr. Kevin Roughgarden, 571-256-9705; e-mail: Kevin.Roughgarden@us.army.mil. The OACSIM POC for BRAC sites is Ms. Karen Wilson, 703-545-2451, e-mail: Karen.s.Wilson38.civ@mail.mil. Enclosure 5 provides specific contacts for technical, reporting, and program management assistance.

Diane M. Randon

DIANE M. RANDON
Director, Installation Services

5 Encls
1. AEDB-R FY12 Data Call Schedule Legacy BRAC/BRAC05
2. AEDB-R and AEDB-CCFY12 Data Call Schedule Active, CC and Non-BRAC Excess
3. AEDB-R FY12 Data Call Schedule Partial BRAC
4. Developing and Updating Cost-to-Complete (CTC) Estimates
5. AEDB-R Specific Contracts for Technical, Reporting, and Program Management Assistance

SEAD 003-R-01

Phase	2013	2014	2015	2016	2017	2018		OOTYR	
LUC	12 ~~680~~	12, ~~494~~	12	~~0~~	12	12		~~228~~ ~~216~~	288
5 yr rev.				75,000				375	450
COE cost	3	3	3	~~5~~	3	3	30	~~61~~	81
	15	15	15	80	15	15		664	

819

Estimate Documentation Report

OK

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

No RACER NEEDED

Folder:

Folder Name: SEAD 003-R-01 FY12

Project:

Project ID: SEAD-003-R-01
Project Name: SEAD-003-R-01 SEAD 46,57
Project Category: Conservation

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
Report Option: Fiscal

Description

SEAD-003-R-01 Explosive Ordnanc Range (EOD) Range (alias SEAD-57) This site also includes the 3.5" Rocket Range (alias SEAD-46)

Since this site is a Military Munitions Rule site, OE costs reported for Land Use Controls is estimated using RACER.

Site: SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure: SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007
3. Professional judgment based on site knowledge.

Estimate Documentation Report

Phase: LTM will be an Institutional Control in perpetuity. Initial duration is 30 years for a recurring review every 2 years.

Additional site information:

RACER Assumptions:

Five year reviews and Long term mangement needed for MEC.

Well abaondonment and site closeout documentation needed for 13 wells, 15 feet deep, 2 inch diameter, unconsolidated fill, removal.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-57
Site Name: EOD Range
Site Type: None

Media/Waste Type
Primary: Soil
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-003-R-01 SEADs 46/57 The EOD Range and 3.5 inch rocket range will require HTRW contamination addressed in addition to the MEC during the removal action.

Five year reviews will be neededed for MEC.
Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure, SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007
3. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2012

Estimator Signature: **Date:**

Estimate Documentation Report

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 03/21/2012

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Five Year Reviews		$68,912	$171,992
LTM #2 Site Close-out Doc and well abandonment		$35,937	$79,810
	Total Cost:	$104,850	$251,801

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Reviews
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038.

Six 5-Year Reviews, first in 2016 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Total Marked-up Cost: $171,992

Technologies:

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Low	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		October-2016	n/a
No. Reviews		6	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		1	EA
Number of Days		2	EA
Air Fare Ticket Price		1,500	$
Need a rental car?		Yes	n/a

Comments:

$ 1000 ?

Be Consistant

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2 Site Close-out Doc and well abandonment
Description: Well abandonment assumed 13 wells, 2" diameter, 15 ft deep, unconsolidated, overdrill/removal.

Start Date: October, 2038
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $79,810

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		No	n/a

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		13	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for site SEAD-006-R-01 for the 2012 data call. This site also encompasses SEAD-023 (OB Grounds). The Remedial Action Cost Engineering and Requirements (RACER) 10.4 system was used to estimate the cost of Site Closeout, Well Abandonment, and Land Use controls. The SEAD-23 monitoring program, which was initiated in 2007 under this project, will be carried under the RI/FS phase until completion of the IRA at the end of FY14. In 2014 it is assumed six additional wells will be installed at SEAD 006-R-01 for additional GW monitoring at the site as part of a LTM plan. Monitoring for SEAD 006-R-01 will start in 2015. Contract DACA87-02-D-0005, Delivery Order # 36 (Source 5) provides the cost of the well installation because this effort is consistent with the work that was done at SEAD 23. The cost for the GW monitoring is provided by RFP W912DY-08-D-0003 Task Order 0008 task No. 1. (Source 6) and the requirement for testing is established in the ROD for the OB Grounds (Source 2). It is assumed that after the completion of the IRA, monitoring GW for SEAD-006-R-01 will require sampling at a quarterly interval for the first year and then annually in subsequent years. This assumption is based on the Long Term Plan from SEAD 23 (Source 3). It is further assumed that no change in the monitoring efforts at SEAD 23 will occur (Source 7). After the IRA is completed in 2014, the monitoring will be carried under the LTM phase. In FY 2016, the first 5-year review will occur.

Site: SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115). The Open Burning/ Open Detonation Grounds is an AOC that the Army used to demilitarize old, obsolete, or off spec ammunition and explosives. The site was a RCRA permitted facility. The clean up strategy included the removal of all munitions potentially posing an explosive hazard. Groundwater will require annual testing until results meet cleanup criteria.

Source:

1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004 (rationale for OE reviews)
2. Final Record of Decision Former Open Burning Grounds Site, January 1999
3. Final Long Term Monitoring Plan for Open Burning Grounds, January 2007
4. RACER Guidance for Cost to Owner
5. Contract DACA87-02-D-0005, Delivery Order # 36, DTD August 22, 2007
6. RFP W912DY-08-D-0003 Task Order 0008.
7. Draft 2011 Long Term Monitoring Annual Report for the Open Burning Grounds, February 2012.
8. ACSIM Data Call undated/ Escalation Factors.

RACER Assumptions:

Site Closeout Documentation (LTM):

1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports - all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):

1. Number of wells: 12
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/excavation

Five year MPPEH & CERCLA review

1. Review cycles (SEAD 006-R-01 and SEAD 23 combined)
2. Five year review cycle starts 2006 with first review 2011for SEAD 23
3. Five year review cycle starts 2016 for SEAD 006-R-01 and SEAD 23 combined
4. Site is moderate complexity
5. Reports, reviews, interviews and site inspections include all default parameters
6. UXO review included

Cost Summary **SEAD-006-R-01**
(SEAD-115)

RI/FS

Monitoring OB Grounds, SEAD-023
Years 2011- 2014 inclusive annually
(from contract RFP W912DY-08-D-0003 Task Order 0008 – Source 6)
$36,352 /event x 2 years = $72,704

Cost to Owner 72,704 x 0.11 (Source 4)=
7,997.44 (rounded to 7997) $7,997

RI/FS Cost Total (OB Grounds, SEAD-023) **$80,701**

LTM

Additional GW Monitoring at SEAD-006-R-01 in 2014
6 wells, 15 ft, 2-inch diameter screened entire length
Install 6 GW wells $26,759
(from contract DACA87-02-D-0005 – Source 5)

Monitor wells quarterly 1st year, annually thereafter
(See assumptions and Source 6)
Year 2015, $36,352/event x 4 events/yr $145,408
(SEAD-006-R-01) 6 wells x 4 event= 24 samples
Year 2016-2044, $36,352/event x 1 event/yr x 29 years $1,054,208
(SEAD-006-R-01) 6 wells x 29 events= 174 samples
Year 2015-2044, $36,352/event x 1 event/yr x 30 years $1,090,560
(for SEAD-23) 6 wells x 30 events= 180 samples
Sample total 24+174+180=378 samples

Assumption:
Owner Support for GW Monitoring (Source 4)
11% of total LTM Cost
$26,759+$145,408+$1,054,208+$1,090,560 x 11%=
2,3316,935 x 0.11= $254,863 $254,863

Monitoring subtotal $2,571,798

5-year Reviews for MPPEH and CERCLA Reviews (RACER) $171,992
Six five-year reviews for SEAD-23 and SEAD-006-R-01
(Starting in FY16)

Well Abandonment & Site Closeout $80,495

LTM Cost	**$2,824,285**
Total Site Cost	**$2,904,986**

Material Change: Yes. Change in guidance for LTM monitoring..

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/12
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012
Date

FINAL

Source 1

ORDNANCE AND EXPLOSIVES ENGINEERING EVALUATION/ COST ANALYSIS REPORT

SENECA ARMY DEPOT ROMULUS, SENECA COUNTY, NEW YORK

Prepared For:

SENECA ARMY DEPOT ACTIVITY
and
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
and
HUNTSVILLE CENTER

Contract No. DACA87-95-D-0018
Delivery Order No. 0052

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
100 SUMMER ST
BOSTON, MA 02110

JANUARY 2004

EXECUTIVE SUMMARY

ES1 The 10,587-acre Seneca Army Depot Activity (SEDA) facility was constructed in 1941 and has been owned by the United States Government and operated by the Department of the Army since that date. From its inception in 1941 until 1995, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items, including munitions and equipment. The Depot's mission changed in early 1995 when the Department of Defense (DOD) recommended closure of the Seneca Army Depot under its Base Realignment and Closure (BRAC) process. This recommendation to close Seneca Army Depot Activity was approved by Congress on September 28, 1995 and the Depot was officially closed in July 2000.

ES2 In accordance with the requirements of the BRAC process, the Seneca County Board of Supervisors established the Seneca Army Depot Local Redevelopment Authority (LRA) in October 1995. The primary responsibility assigned to the LRA was to plan and oversee the redevelopment of the Depot. The Reuse Plan and Implementation Strategy for Seneca Army Depot was adopted by the LRA and approved by the Seneca County Board of Supervisors on October 22, 1996. Under this plan and subsequent amendment, areas within the Depot were classified as to their most likely future use. These areas included: housing, institutional, industrial, an area for the existing navigational LORAN transmitter, recreational/conservation, and an area designated for a future prison.

ES3 In July of 1998, the U.S. Army Corps of Engineers (USACE) conducted a site visit and historical data collection effort. The findings are documented in the Archives Search Report (ASR). The ASR initially subdivided the depot into 27 Areas of Interest (AOIs) for ordnance contamination based on physical attributes, homogeneity, and current and historical land use. The ASR evaluated each AOI to determine whether the area should or should not be investigated for ordnance and explosives/ unexploded ordnance (OE/UXO). Each AOI was classified as requiring further investigation or not requiring further investigation based on a review of historical documents, aerial photography, and employee interviews. Most of the AOIs were also visited by USACE to determine whether any traces of OE were readily apparent.

ES4 The ASR classified 15 of the areas as uncontaminated. Subsequently, one of the areas recommended for further investigation, SEAD-43, was classified as a no further action site after a geophysical and intrusive investigation in 1999. The remaining 11 AOIs discussed in the ASR were classified as sites where OE might present a safety risk. This Engineering Evaluation and Cost Assessment project was undertaken in order to determine the nature and extent of possible OE contamination at these sites.

ES5 The EE/CA fieldwork used geophysical survey techniques and intrusive investigations to estimate the density of the ordnance in different areas, which was then compared with the current and future activities and anticipated users. Data collected from this characterization project were also used to develop alternatives designed to reduce the risk of possible exposure to UXO within AOIs. These alternatives were then evaluated to determine their effectiveness, implementability, and cost.

ES6 Results of this comparison indicate that there are portions of SEDA where alternatives requiring removal of UXO will be necessary to ensure public safety. The results also indicate that implementation of site-wide institutional controls will be necessary to manage residual risk. Several AOIs within SEDA will not require any OE removal operations to make the property safe for the proposed future uses.

ES7 OE response action alternatives were evaluated for each of the 11 AOIs at SEDA that were investigated during this EE/CA investigation. Each potential alternative was initially screened against the general evaluation criteria of effectiveness, implementability, and cost. The screening of alternatives was used to identify candidate OE response alternatives for further qualitative evaluation. Each of the alternatives remaining after this screening were then compared to each other as far as effectiveness, implementability, and cost. Once the remaining alternatives at each AOI had been compared, one alternative was chosen as the most appropriate response to the existing OE hazard.

ES8 The following response actions have been chosen for the AOIs investigated during the Seneca OE EE/CA:

- NFA – SEAD-53 (Igloo Area) ditches, Demo Range, Indian Creek Burial Area. These sites are no longer under consideration as ordnance sites
- Institutional Controls – Base wide, no individual areas
- Clearance to Depth of 6" – SEADs-16 and –17 (Deactivation Furnaces), EOD Area #2
- Clearance to Depth of Instrument Detection – EOD Area #3, SEAD-44A (QA Function Test Area), SEAD-46 (3.5" Rocket Range), Grenade Range
- Clearance to Depth by Means of Excavation and Mechanical Sorting – SEAD-45 (Open Detonation Area), SEAD-57 (Former EOD Range)

Complete descriptions of each of these alternatives are contained in Section 7.

SECTION 9

RECOMMEDATIONS AND RECURRING REVIEW

9.1 INTRODUCTION

The recommended response actions have been chosen based on the effectiveness and implementability for each of the alternatives considered at each of the AOIs. If two alternatives were equal according to effectiveness and implementability, then cost was used as the determining factor in choosing which alternative to recommend. Following implementation of the chosen response action alternative, the former Seneca Army Depot will be included in the USACE program for recurring reviews. Recurring reviews will be conducted every five years to evaluate the continued effectiveness of the response action to address public safety risk from UXO.

OE 5 year review

9.2 RECOMMENDED RESPONSE ACTIONS

9.2.1 INSTITUTIONAL CONTROLS

Institutional controls were not chosen for any of the individual AOIs. However, base wide controls should be implemented in order to properly educate the public about the potential residual hazards of OE that may exist on site. The Institutional Controls recommended in Section 5 are the ones that should be considered for implementation, and Appendix F analyses the effectiveness of all the institutional controls considered for SEDA. Although the Demo Range, the ditches in SEAD-53, and the rumored Indian Creek Burial area have been considered NFA sites, the base-wide Institutional Controls will cover these areas as well.

9.2.2 CLEARANCE TO DEPTH OF 6 INCHES

The Clearance to a Depth of 6 Inches Alternative has been chosen for two areas, SEADs-16 and –17 and EOD Area #2. At both of these areas, OE was found no deeper than 6 inches below the ground surface. Therefore, it is not considered necessary to investigate any deeper than this depth. A complete investigation of the area not cleared during the EE/CA for each AOI (Figures 9.1 and 9.2) using this alternative will be sufficient to remove the majority of the OE that is present in the areas. Should any OE be discovered after the initial survey, possibly due to natural occurrences (i.e. freeze/thaw), the survey may be repeated as part of the recurring reviews.

Source 2

FINAL RECORD OF DECISION (ROD)
FORMER OPEN BURNING (OB) GROUNDS SITE
SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NY

Prepared For:
United States Army Corps of Engineers

Prepared By:
Parsons Engineering Science, Inc.
30 Dan Road
Canton, MA 02021-2809
January 1999
CONTRACT NO. DACA87-92-D-0022

Delivery Order 0010

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy outlined in this ROD addresses potential exposure to elevated levels of metals, such as lead, in the on-site soils and sediment in Reeder Creek. The following describes the significant aspects of the remedy:

- The OB Grounds was used for surface burning of explosive trash and propellants. The concern for OE below the surface, at depth, at this site is small. Although OE is not expected to be found at depth at this site, through a combination geophysics, excavation, sifting, removal and soil cover, the Army will nevertheless remediate OE to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or put into place land use restrictions as may be required by the DDESB.
- Excavation of soils with lead concentrations above 500 mg/kg and sediments from Reeder Creek with concentrations of copper and lead above the NYSDEC criteria of the 16 mg/kg and 31 mg/kg, respectively.
- Treatment of soils exceeding the Toxicity Characteristic Leaching Procedure (TCLP), estimated to be approximately 3,800 CY of the excavated soil, via solidification /stabilization will be performed to remove the RCRA characteristic of toxicity. This will allow the soil to be landfilled, in accordance with the requirements of the Land Disposal Restrictions (LDR) of RCRA.
- Disposal of the excavated and solidified soil in an off-site Subtitle D landfill. The total quantity of soil to be disposed of is estimated to be 17,900 CY, including the 3,800 CY of solidified soil.
- Construction of a soil cover of at least 9 inches of compacted soils in the areas of the OB Grounds with soils remaining on the site with lead concentrations above 60 ppm. The area to be covered is estimated to be approximately 27.5 acres, which encompasses most of the area of the OB Grounds. The PRAP incorrectly identified the area to be covered as 43.8 acres. The cap will be vegetated with indigenous grasses to prevent erosion and to prevent direct contact and incidental soil ingestion by terrestrial wildlife. The monitoring program will ensure that the 9-inch soil/vegetative cover is maintained after the remedy is complete.
- Control of surface water runoff, as necessary, to prevent erosion of the vegetative cover and solids loading to the creek. This will be accomplished with vegetation, regrading of site topography and drainage swales.
- Conducting a monitoring program for site groundwater and sediment in Reeder Creek. This program will monitor metals. For groundwater, the level of detection will be to below 15 ug/L, the federal action level for lead in groundwater. For sediment, the detection limit for lead will be to 10 mg/kg. Should a significant exceedance be noted, the exceedance will be

confirmed through additional sampling and, if confirmed, appropriate corrective measures will be implemented to eliminate the threat posed by the exceedance. For groundwater, this action may include metals removal via filtering. A similar process will apply for a sediment exceedance observed in Reeder Creek. First, the source of the exceedance will be identified and confirmed. If the exceedance is determined to originate from the OB Grounds site, then maintenance of or improvements to the existing erosion control systems will be instituted to reduce the threat due to erosion of on-site soils to the Creek. This may include revegatation or the construction of drainage control swales or structures.

STATE CONCURRENCE

NYSDEC has concurred with the selected remedy. **Appendix B** of this Record of Decision contains a copy of the Declaration of Concurrence.

DECLARATION

The selected remedy is consistent with CERCLA and to the extent practicable the NCP, is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. The remedy uses a permanent solution for soil contamination. This remedy will not result in hazardous substances, above cleanup goals, remaining at SEDA. Because these alternatives would result in hazardous substances, pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, CERCLA requires that the lead agency review the remedial action no less than every five years after its initiation. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

5

FINAL

LONG-TERM MONITORING PLAN FOR OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Source 3

Prepared for

U.S. Army, Engineering & Support Center, Huntsville

4820 University Square

Huntsville, AL 35816

and

Seneca Army Depot Activity

5786 State Route 96

PO Box 9

Romulus, New York 14541

Prepared by

PARSONS
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Contract DACA87-02-D-0005, Delivery Order 29
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

January 2007

7.0 SUMMARY OF MONITORING PROGRAM

This section presents a brief summary of the activities to be performed and requirements of the groundwater and vegetated soil cap monitoring program. This section has been prepared to serve as a brief summary of the Plan requirements for current and future field crews and office personnel who will conduct the work associated with the OB Grounds monitoring program. This section is only intended to provide a brief summary for staff personnel. Supervisory and management personnel are expected to review the entire Plan.

7.1 WATER LEVEL MONITORING

Water levels will be obtained from all wells at the OB Grounds during groundwater sampling events. Levels will be collected on a quarterly basis during the baseline period, which will last for at least the first year. Groundwater level monitoring may be reduced after the first year if the wells are shown to be in compliance with the ROD requirements. The locations of the wells to be installed at the OB Grounds are shown on **Figure 5-1**. All water level measurements will be obtained in accordance with the procedures identified in the SOPs included in the Sampling and Analysis Plan (Parsons 2005, included by reference only).

7.2 WATER QUALITY MONITORING

Number of wells = 6

sampling freq quarterly f the firs

Water quality monitoring will be performed at six wells. These wells are shown on **Figure 5-1**. Samples will be obtained on a quarterly basis for at least the first year and analyzed for the parameters listed on **Table 5-1**. Sampling frequency after the first year may be revised depending on the results and evaluation of data collected during the first year.

Samples will be collected in accordance with the procedures described in the SOPs contained the Sampling and Analysis Plan. Quality control samples will be obtained in accordance with the requirements set forth in the QAPP, which is included in the Sampling and Analysis Plan. Laboratory analyses and data validation will be performed in accordance with the procedures set forth in the QAPP.

7.3 VEGETATED SOIL CAP AND DRAINAGE SWALE INSPECTIONS

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter for one year, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any significant

breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted.. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

7.4 DATA EVALUATION AND REPORTING

All of the water quality and water level monitoring data obtained pursuant to this plan will be reported in OB Grounds Monitoring Program Reports. During the period of baseline (initial four samples) data collection, Monitoring Reports will be prepared quarterly.

During the baseline reporting period, each quarterly report will present new data and information developed during the most recent monitoring event (as is identified in **Section 5.6**, above), and will provide summary presentations of the data developed to date. Summary presentations will include:

1. trend plots of groundwater elevation data for each of the monitoring wells;
2. trend plots for all chemical concentration data developed for each of the monitoring wells;
3. trend plots for key indicator parameter data developed for each of the monitoring wells; and,
4. a chronological listing of any noted vegetated, soil cap breach or erosion and an indication of the correction action taken to alleviate the identified condition.

All data from the first year of monitoring will be reported in the annual OB Grounds Long-Term Monitoring Report. Upon completion of baseline monitoring, data will be reported in annual reports. Reports will be prepared and submitted to USEPA and NYSDEC on or before the first day of the second month after the end of the monitoring period (quarter or 12-month period) from which the data were obtained (i.e., the Groundwater Monitoring Report for data obtained in the fall quarter is to be submitted by February 1st of the following year). The contents of the annual report will include:

1. Complete tabulations, including the identification of maximum and minimum levels, of all groundwater elevation data developed to date;
2. Trend plots of groundwater elevation data for each of the monitoring wells;
3. A potentiometric map of site groundwater;
4. Complete tabulations of all chemical concentration data developed to date;
5. Complete tabulations of all indicator parameter data developed to date;

6. Summary presentations (e.g., sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc.) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria value;
7. Trend plots for all chemical concentration data developed for each of the monitoring wells;
8. Trend plots for key indicator parameter data developed for each of the monitoring wells;
9. A chronological listing of any noted vegetated, soil cap breach or erosion and an indication of the correction action taken to alleviate the identified condition; and,
10. A recommendation of any changes (e.g., changing frequency of data collection to semi-annual or annual, development of a sediment monitoring program, etc.) that are proposed to be implemented for the OB Grounds LTM Plan.

Groundwater data collected during the RI also indicated that, with the possible exception of two monitoring well locations, groundwater had not been impacted by metal contamination that was then present in the soil. Groundwater data from all but the two well locations indicated lead concentrations ranging from non-detectable to less than the 15 µg/L limit stipulated in the ROD. The two exceptions showed lead concentrations higher than 15 µg/L; however, these samples were highly turbid and results from filtered samples collected at these locations showed lead concentrations below 15 µg/L. Based on these findings, the Army indicated that the turbid nature of the samples resulted in the elevated concentrations of lead identified.

Based on the flow direction of groundwater, the existence of a groundwater divide, the lack of widespread metals contamination in groundwater at the OB Grounds, and the ROD requirement to prevent future degradation of Reeder Creek, the monitoring well network will consist of six wells, all of which will need to be constructed at the site. New wells are required due to abandonment of 32 historic wells during the OB Grounds remedial action (Weston Solutions, June 2005) and due to the lack of maintenance applied to the three remaining well installations at the OB Grounds. The locations of the six new proposed wells are shown on **Figure 5-1**, and they will be positioned as follows:

6 new wells

- Three wells will be installed on the east side of the OB Grounds, between the former grounds, the location of the buried lead contaminated soil, and Reeder Creek. These wells will be used to monitor the groundwater for possible future impacts to Reeder Creek.
- Two wells will be installed on the west side of the OB Grounds, west of the groundwater divide. These wells will be used to monitor groundwater flowing off the OB Grounds to the west southwest.
- One well will be installed south of the OB Grounds, outside the area that formerly contained contaminated soil. This well will serve as a background well for comparison to the five other wells installed at the site.

These wells will adequately monitor the OB Grounds to assess future degradation of groundwater in the area of the former OB Grounds and potential migration of affected groundwater towards Reeder Creek. Collection of groundwater levels and generation of potentiometric maps will be used to check the direction of groundwater flow and be used to evaluate the need for additional wells should the groundwater flow directions alter from that currently anticipated.

The exact details of the final monitoring well installations will be determined and documented once they are installed, and will be contingent on conditions found at the OB Grounds. However, based on details of the historic monitoring well network previously located at the OB Grounds, it is expected that all new wells placed at the former AOC will be installed in the till with the screen top set at a depth of 4 to 5 feet below grade surface (bgs), with the screen length extending down

into the underlying weathered shale horizon. Setting the top of the screen 4 to 5 feet bgs will allow for the construction of a permanent well installation consisting of a 2 foot thick concrete collar, overlying a 1 - 2 foot thick bentonite seal and a minimum of 1 foot of sand pack above the top of the screen. The screen length at each monitoring well location will be set to maximize coverage across the till and weathered shale horizons, and as such screen lengths may vary from 2 feet to 10 feet in length. All wells in the historic monitoring network at the OB Grounds had screen lengths of 5 feet.

5.3 MONITORING ANALYTE LIST

year one is quarterly, annual a

The ROD stipulated that groundwater at the OB Grounds is required to contain less than 15 µg/L lead, and the sediment in Reeder Creek found to contain more that 16 mg/Kg copper and 31 mg/Kg lead was to be excavated. The ROD also required that these media be analyzed for metals. In accordance with these requirements, the samples of groundwater from the OB Grounds will be analyzed initially for total lead and total copper. If preliminary results suggest that turbidity is potentially affecting the sample results, groundwater analyses will also include the determination of total and dissolved lead and copper in the samples. The State of New York Contract Required Quantitation Limits for lead and copper are shown in **Table 5-1** below.

5.4 MONITORING FREQUENCY

As is indicated above, all wells proposed for monitoring groundwater at the OB Grounds will be new; therefore, the initial sampling frequency will be once per quarter for at least one year until it can be established that the wells meet or exceed the required concentrations limits, within the acceptable error tolerances specified in **Section 4.2** After collection of this initial data set and the decision regarding whether the wells meet the ROD-specified concentration limits, the Army anticipates that the sampling frequency will be reduced to once per year. After a total of five years of sampling, a decision will be made whether the sampling should be terminated or continued into the next five-year period.

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any identified breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

Source 3

Source 3

FINAL

LONG-TERM MONITORING PLAN FOR OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Site
SEAD 23
OB Groun

Prepared for

U.S. Army, Engineering & Support Center, Huntsville

4820 University Square

Huntsville, AL 35816

and

Seneca Army Depot Activity

5786 State Route 96

PO Box 9

Romulus, New York 14541

Prepared by

PARSONS
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Contract DACA87-02-D-0005, Delivery Order 29
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

January 2007

into the underlying weathered shale horizon. Setting the top of the screen 4 to 5 feet bgs will allow for the construction of a permanent well installation consisting of a 2 foot thick concrete collar, overlying a 1 - 2 foot thick bentonite seal and a minimum of 1 foot of sand pack above the top of the screen. The screen length at each monitoring well location will be set to maximize coverage across the till and weathered shale horizons, and as such screen lengths may vary from 2 feet to 10 feet in length. All wells in the historic monitoring network at the OB Grounds had screen lengths of 5 feet.

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1st year frequency

year 2-30 frequency

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any identified breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Cost to OWNER

Source 4

Related Topics

- *Direct Costs*
- *Professional Labor Overhead / G&A*
- *Field Office Overhead / G&A*
- *Prime Contractor Profit*
- *Subcontractor Profit*
- *Contingency*
- *Markup Calculations*
- *Applying Markup Percentages*
- *Adjusting Markups for Each Technology*
- *Creating Custom Markup Templates*
- *Markups Report*

ORDER FOR SUPPLIES OR SERVICES

Source

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO.	2. DELIVERY ORDER/CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQ./PURCH. REQUEST NO.	5. PRIORITY
DACA87-02-D-0005	0036	2007 Aug 22	W31RYO71375791	5

6. ISSUED BY	CODE W912DY	7. ADMINISTERED BY (if other than 6)	CODE W912DY	8. DELIVERY FOB
US ARMY ENGINEERING & SUPPORT CENTER CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822		CT-P/ACQUISITION SUPPORT TEAM ATTN: DEMETRA HILL 256-895-1165 HUNTSVILLE AL		[X] DESTINATION [ ] OTHER (See Schedule if other)

9. CONTRACTOR	CODE 1BVK6	FACILITY	10. DELIVER TO FOB POINT BY (Date) (YYYYMMMDD)	11. MARK IF BUSINESS IS
NAME AND ADDRESS PARSONS INFRASTRUCTURE & TECHNOLOGY GROU CHARLES TERHUNE 100 W WALNUT STREET PASADENA CA 91124			SEE SCHEDULE 12. DISCOUNT TERMS	[ ] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED
			13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15	

14. SHIP TO	CODE W912DY	15. PAYMENT WILL BE MADE BY	CODE 964145	
US ARMY ENGINEERING & SUPPORT CENTER NO CONTACT SPECIFIED CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822		US ARMY ENG & SUP CENTER - FINANCE OFFIC US ARMY CORPS OF ENGRS FINANCE CTR 5722 INTEGRITY DRIVE MILLINGTON TN 38054-5005		MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER			
	DELIVERY/CALL	X	This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
	PURCHASE		Reference your quote dated Furnish the following on terms specified herein. REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR	SIGNATURE	TYPED NAME AND TITLE	DATE SIGNED (YYYYMMMDD)

[X] If this box is marked, supplier must sign Acceptance and return the following number of copies: 1

17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE

See Schedule

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	SEE SCHEDULE				

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
TEL: 256-895-1163
EMAIL: K
BY: KATHERINE H. ATKINS — Katherina H. Atkins — CONTRACTING / ORDERING OFFICER

25. TOTAL $116,181.00
26. DIFFERENCES

27a. QUANTITY IN COLUMN 20 HAS BEEN
[ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	c. DATE (YYYYMMMDD)	d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	28. SHIP NO.	29. DO VOUCHER NO.	30. INITIALS
	[ ] PARTIAL [ ] FINAL	32. PAID BY	33. AMOUNT VERIFIED CORRECT FOR
f. TELEPHONE NUMBER / g. E-MAIL ADDRESS	31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL		34. CHECK NUMBER
36. I certify this account is correct and proper for payment. a. DATE (YYYYMMMDD) / b. SIGNATURE AND TITLE OF CERTIFYING OFFICER			35. BILL OF LADING NO.

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED (YYYYMMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO	42. S/R VOUCHER NO.

Section C - Descriptions and Specifications

SOW

ADDENDUM

IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLANFOR THE OPEN BURNING (OB) GROUNDS AND
FIRE TRAINING AREASSENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

FUNDING OPTIONS SUMMARY

OPTION 1

3.1 Long Term Monitoring at the OB Grounds
- 3.1.1 (Task 1) Vegetative Cap and Drainage Swale Inspections.....$2,729
- 3.1.2 (Task 2) Perform Monitoring Well Installation.....$24,864
- 3.1.3 Quarterly Groundwater Monitoring
  - 3.1.3.1 (Task 3) Initial Quarterly Groundwater Monitoring Event.$16,908
    - 3.1.3.1.1 (Task 3.1) Water Level Monitoring
    - 3.1.3.1.2 (Task 3.2) Water Quality Monitoring
    - 3.1.3.1.3 (Task 3.3) Preparation of Quarterly Reports

Well INSTALLA- cost FY 0-

3.2 Long Term Monitoring at the Fire Training Areas
- 3.2.1 Quarterly Groundwater Monitoring
  - 3.2.1.1 (Task 7) Initial Quarterly Groundwater Monitoring Event...$23,474
    - 3.2.1.1.1 (Task 7.1) Water Level Monitoring
    - 3.2.1.1.2 (Task 7.2) Water Quality Monitoring
    - 3.2.1.1.3 (Task 7.3) Preparation of Quarterly Reports

3.4 (Task 12) PROJECT MANAGEMENT.....$48,206

OPTION 1 TOTAL	$116,181

OPTION 2

Long Term Monitoring at the OB Grounds
3.1.3.2 (Task 4.0) Second Quarterly Groundwater Monitoring Event.....$16,908
- 3.1.3.2.1 (Task 4.1) Water Level Monitoring
- 3.1.3.2.2 (Task 4.2) Water Quality Monitoring
- 3.1.3.2.3 (Task 4.3) Preparation of Quarterly Reports

Long Term Monitoring at the Fire Training Areas
3.2.1.2 (Task 8.0) Second Quarterly Groundwater Monitoring Event.....$23,474
- 3.2.1.2.1 (Task 8.1) Water Level Monitoring
- 3.2.1.2.2 (Task 8.2) Water Quality Monitoring
- 3.2.1.2.3 (Task 8.3) Preparation of Quarterly Reports

OPTION 2 TOTAL	$40,382

OPTION 3

$24,864 COST FY07,
1.0762 ESCALATION FACTOR SOURCE 8
26,759 COST FY. 12

DEPARTMENT OF THE ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
4820 University Square
HUNTSVILLE, AL 35816

Source 6

Contract Task Or request

December 21, 2009

REPLY TO ATTENTION OF

SUBJECT: Request for Proposal for Contract **W912DY-08-D-0003**, New Task Order (0008), Implementation of The Long-Term Monitoring Plan for The Open Burning (OB) Grounds And Fire Training Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment Of Existing Monitoring Wells At Various Sites, Seneca Army Depot Activity Romulus, New York

Mr. Jeff Adams
Parsons Infastructure & Technology Group
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Dear Mr. Adams:

Please submit a firm fixed price proposal for the subject requirement in accordance with the attached Performance Work Statement (PWS), dated 4 December 2009.

Your firm's priced proposal must be submitted in writing and shall include but not be limited to the following: 1) All the labor categories, number of labor hours and labor hour rates, 2) Any Other Direct Costs that may be associated with this Task Order.

It is requested that your proposal be received by this office, no later than 2:00 p.m., local time, on December 28, 2009. This Request for Proposal (RFP) does not in any manner imply or authorize your firm to begin any actions listed or referenced in the PWS. The point of contact for this action is Laura Stiegler, Contract Specialist, (256) 895-1171; Email: Laura.M.Stiegler@usace.army.mil

Sincerely,

/s/
Van E. Pinion
Contracting Officer

RFP

OB Grounds

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S6, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment, S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, 56	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8 - Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S-119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

OB Cost

F.Y. 2010 COSTS $35,389.01

ESCALATION FACTOR ~~1.0272~~ 1.0272

FY 2012 COST $36,352

DRAFT

Source 7

2011 LONG-TERM MONITORING ANNUAL REPORT

FOR THE OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY, CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

HUNTSVILLE, ALABAMA

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

PARSONS
100 High Street
Boston, MA 02110

Contract Number W912DY-08-D-0003
Task Order No. 0008
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

February 2012

6.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be made based on the results of the sixth round of LTM at the OB Grounds:

- Residual lead and copper concentrations remaining in the soils have not impacted groundwater at, or in the immediate vicinity of, the Site above the applicable action levels.

- The integrity of the vegetated soil cover overlying interred contaminated soils at the Site was intact and there was no evidence that terrestrial wildlife are exposed or will be exposed to the lead-contaminated soils interred below the 9-inch soil cover.

- The washout area noted during in Grid Cell L7 in (identified as L8 in 2008 Report) during the February and May 2008 inspections and in the August 2010 inspection was observed again during the 2011 soil cover inspection. As discussed in Section 4.2 the washout area is outside of the areas where contaminated soils were interred beneath clean soil; this area therefore will not be repaired by the Army at this time. If subsequent inspections suggest that this area is becoming larger, the Army will evaluate the need for a permanent repair.

- An approximately 21-ft long area of minor erosion was observed in Grid Cell K6, outside of the area where lead-contaminated soil is interred beneath clean soil. Grid Cell K6 is located adjacent to Grid Cell J6, which is part of the soil cover, and therefore the condition of this location will be reassessed during the next inspection event to determine if corrective measures are needed.

- The Army will continue to monitor soil cover erosion, and will note any instance of cover erosion or exposed native or interred soil.

- Based on evaluation of the groundwater data and the results of the cover inspection, there is no evidence to suggest that the OB Grounds may be contributing to the degradation of sediment quality in Reeder Creek.

- The Army will continue to inspect Reeder Creek for evidence of sediment deposition and if it is observed, a sediment sampling and analysis program plan will be prepared, submitted for approval, and implemented for Reeder Creek at locations adjacent to the OB Grounds.

Based on the result of the LTM events conducted at the OB Grounds, the Army recommends continuing the monitoring frequency of once per year. As presented and summarized above, available monitoring data shows no evidence of lead or copper in the groundwater above the cleanup goals subsequent to the completion of the remedial action for the Site. These findings are consistent with the groundwater analytical results obtained during the remedial investigation stage (1990s) of work at the Site, indicating that there is no evidence of groundwater quality deterioration over approximately 15 years. Further, the annual inspections of the soil cover have shown minimal evidence of erosion or animal breaching of the

Source 8

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

S: 8 Apr 12
15 Apr 12
31 Aug 12
16 Sep 12
1 Oct 12

DAIM-IS

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY12 Army Environmental Database-Restoration (AEDB-R) and Army Environmental Database- Compliance-Related Cleanup (AEDB-CC) Data Calls

1. The official start of the FY12 Data Call for AEDB-R and AEBD-CC is 12 Jan 12. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2 while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown in Enclosure 3. The Spring data submission covers the 1 Oct 11 – 31 Mar 12 period. The Fall data submission covers the 1 Apr 12 – 30 Sep 12 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations are responsible for updating the Army's database of record (AEDB-R) for all BRAC Installation Restoration [IR], Munitions Response [MR] and Compliance sites. The installations must update the cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 12. Starting with the Spring 2012 data submission, CTC estimates must include, where required, remedial action operation and long term management requirements for up to thirty years. In addition, all CTC estimates must be released before the Spring data submission. BRACD performs QC review of financial data for all BRAC. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

Comment [A1]: What does this mean???

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 12 for all BRAC installations.

c. BRAC Installation Action Plans (BIAP): Installations must update and finalize the BIAP for FY123 by 1 Oct 12 using the Installation Action Plan (IAP) tool located on Army Environmental Reporting Online (AERO).

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
FY11	1.014
FY10	1.0272
FY09	1.0354
FY08	1.0509
FY07	1.0762

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

SEAD 006-R-01

Phase	2013	2014	2015	2016	2017	2018		OUTYR	
RI/FS monitor	41	40							91
LTM INSTALL GW		27							27
Monitor 1/4LY OMR			145	34	34	36		946	145 1054
SEAD 23			36	36	36	36		947 ~~1040~~	1091
CTO	48 ~~84~~	~~84~~	8	8	8	8	~~44~~	215 ~~300~~	255
5yr				29				143	172
Well Decom.								80	80
	45 ~~49~~	71 ~~95~~	189	109	80	80	~~88~~ 574	2331 ~~2335~~	2,905

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 006-R-01 FY12

Project:

Project ID: SEAD-006-R-01 ODG
Project Name: SEAD-006-R-01 Open Detonation Grounds
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
Report Option: Fiscal

Description

SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Groundwater Monitoring and Site Closeout Documentation costs.

Site: SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Final Record of Decision Former Open Burning Grounds Site, January 1999
3. Professional judgment based on site knowledge.

Estimate Documentation Report

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 12
2. Depth of wells: 15 ft
3. Diameter of wells: 2"
4. Unconsolidated
5. Overdrill/removal

Five-Year Review (LTM)
1. 6 review cycles
2. Review period continues starting in 2016
3. Moderate complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters
6. Included MMR review.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-006-R-01
Site Name: Open Detonation Grounds
Site Type: None

Media/Waste Type

Primary: Groundwater
Secondary: Sediment/Sludge

Contaminant

Primary: Metals
Secondary: None

Phase Element Names

SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation

Description: RCRA Closure of OB/OD Grounds and OB Grounds (SEAD-23) are combined. The OBOD Grounds is an AOC that the Army used to demilitarize old, obsolete, or off spec ammunition and explosives. This was a RCRA permitted facility. The cleanup strategy included the removal of all munitions potentially posing an explosive hazard. Groundwater will require annual testing until it meets cleanup criteria.

Site closeout documentation OB/OD- Includes MMR site visits. Five year reviews included one for SEAD 23 in 2011, and six Five Year Reviews in outyears starting in 2016 for combined SEAD 23 and SEAD 006-R-01.

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia - US Army Corps of Engineers, Project Manager

References:
1. Concept Plan, Ordnance and Explosives for A RCRA Closure of the OB/OD Grounds at Seneca Army Depot Activity, Sept. 2002
2. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
3. Draft RCRA Closure Plan Open Burn Tray in SWMU Unit -23 (SEAD-23, OB Grounds), December 2004
4 Professional judgment based on site knowledge.

Estimator Information

Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District

Estimate Documentation Report

Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/27/2012

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 03/27/2012

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM Five Year Reviews		$68,912	$171,992
LTM Site Closeout and Well Abandonment		$36,394	$80,495
	Total Cost:	$105,307	$252,487

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM Five Year Reviews
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038.

Six 5-Year Reviews, first in 2016 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Total Marked-up Cost: $171,992

Technologies:

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Low	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		October-2016	n/a
No. Reviews		6	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		1	EA
Number of Days		2	EA
Air Fare Ticket Price		1,500	$
Need a rental car?		Yes	n/a

Comments:

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM Site Closeout and Well Abandonment
Description: Site closeout documentation OB/OD- Includes UXO site visits. Six 5 year reviews starting in outyear 2016 for combined SEAD 23 and SEAD 006-R-01.

Start Date: December, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $80,495

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		Yes	n/a
Number of Boxes		6	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group OBG	n/a
Number of Wells		6	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a
Technology/Group Name		Well Group ODG	n/a
Number of Wells		6	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments: 12 wells total to be abandoned.

SEAD 025

Phase	2013	2014	2015	2016	2017	2018		OUTYR
TESTING LUC; MNGT;	61	61	60	[illegible]	[illegible]			
5YR; GW TEST				62				
WELL ABAN/								

MEMORANDUM FOR RECORD

Date: 08 March 2012

SUBJECT: Environmental Liabilities for site SEAD-006, Ash Landfill Site (SEAD-3, 6, 8, 14, 15) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2012 data call. Future monitoring cost is based on task order pricing for monitoring. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 system was used to estimate the cost of the Well Abandonment costs including site closeout. RA(O) in the form of groundwater monitoring costs were obtained from the current task order (Source 2). The ROD implementation was initiated in 2007. Of the 15 years of monitoring expected per the ROD (Source 1), 10 years remain. The required Land Use Control management of this AOC is included in SEAD 009. The cost of the potential requirement to recharge the BioWall (Source 3) has been included (Source 5).

Site: SEAD-006, Ash Landfill Site (SEAD-3, 6, 8,14,15). AOC is a former Municipal Incinerator where ash and other debris from the operation where disposed of. Treatment of ground water and management of LUCs is required until ground water and soil meet cleanup standards.

Source:

1. Final Record of Decision, Ash Landfill, January 2005
2. Contract #: W912DY-08-D-0003, new D.O. proposal dated June 5, 2011.
3. Annual Report and Year 4 Review for the Ash Landfill dated September 2011
4. RACER Guidance Cost to Owner
5. Draft Memorandum, Replenishment Options for the Ash Landfill BioWall System.

RACER Assumptions:

Well Abandonment (LTM)

1. Three well groups: Group 1 (19 wells), Biowall (11 wells), Trench (11 wells)
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Site Closeout Documentation (LTM phase):

1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports-- all RACER default values
4. Documents (16 Boxes) will be stored for 30 years

Owner Support Assumptions:
Procurement, S&A, and Contract Closeout for non-RACER estimates are set at 11% of estimated cost and consistent with RACER guidance.

Cost Summary SEAD-6, 3, 8, 14, 15

RA(O)

GW Monitoring / year:		
Sampling events (Optional Tasks 7 and 8)	$69,421	
2 events per year (Source 3)		
Inspection (Optional Task 6)	$3,467	
Annual Report (Optional Task 9)	$17,910	
Project Management (Optional Task 10)	$35,097	
	$125,895	
$125,895/yr x 10 years		$1,258,950
Recharge of BioWall (Source 5)		$415,300
Owner Support Cost (Source 4)		
Cost of GW Monitoring and recharge		
$1,258,980 + $415,300 x 0.11		
$1,674,250 x 0.11		$184,168

LTM

Well Abandonment/Site Close-out (RACER)	$128,859

Total Site Cost **$1,987,277**

Material Change: No

Prepared by: Randall Battaglia
Cost Estimator

Signature 3/27/2012 Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/27/2012 Date

Source 1

FINAL

RECORD OF DECISION

FOR

ASH LANDFILL

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
150 Federal St, 4th Floor
Boston, Massachusetts

Contract Number: DACA87-95-D-0031
Delivery Order 0022

January 2005

natural biodegradation, since the chemical and biological reactions in the reactive wall release hydrogen, a substance that is used up in microbial dechlorination. This would decrease contaminant levels, which can be expected to significantly reduce the time to achieve ARAR compliance compared to Alternatives MC-3, MC-5 and MC-6.

Alternatives MC-5 and MC-6 include surface water discharge of treated groundwater. Discharge requirements are generally the federal and State AWQC. The discharge from the groundwater treatment system would be designed to meet the federal AWQC and the anti-degradation limits.

Alternatives MC-5 and MC-6 are expected to achieve other ARARs including the RCRA requirements for treatment facilities, the Department of Transportation (DOT) requirements for off-site transportation of any residual materials, and the New York Solid and Hazardous Waste Regulations and the Occupational Safety and Health Act (OSHA). In addition, the operation of the treatment system in Alternative MC-4 would comply with federal and state air standards.

10.2.3 Long- Term Effectiveness and Permanence

Alternatives SC-1, MC-1 and MC-2 would not remove or contain contaminants in the groundwater in a continuous or active manner, with the exception of what would be removed by the reactive barrier wall that is currently in place and operating. Contaminants would continue to migrate and the volume of contaminated groundwater would increase. The No-Action alternative, MC-1, and the alternative water supply alternative, MC-2, are not considered to be effective over the long-term because contaminated groundwater, other than that captured via the reactive barrier wall, remains on-site and some migration off of the property would occur. This condition currently does not affect the drinking water of off-site residents and groundwater modeling has indicated that the concentrations of contaminants would be below drinking water standards by the time the groundwater reaches these wells. These alternatives would require long-term monitoring and sampling.

Alternatives MC-3, MC-5 and MC-6 are all expected to be equal in providing long-term permanence, since each alternative would operate until the desired concentration levels are achieved. The limiting factor in achieving this goal is the rate at which contaminants can be flushed out of the soil matrix. Since the aquifer matrix is glacial till and is high in clay content, diffusion is likely to play an important role in releasing contamination from the aquifer. This means the time for cleanup would be long, estimated to be approximately 45 years. MC 3a is expected to take 15 years. ? Time - GW Mon.

Alternative SC-2 is ranked high for long-term effectiveness and permanence since all materials would be excavated and disposed of in an off-site landfill. Once in the landfill, the contaminated materials are permanently entombed. However, since this alternative does not permanently fix the contaminants and involves such large volume of soil, these wastes may not be as permanently entombed as Alternative SC-4. Therefore, although SC-2 is ranked high for permanence, Alternative

11.0 SELECTED REMEDY

Based on an evaluation of the various options, the selected remedy is Alternative SC-5 for source control and Alternative MC-3a for migration control (Figure 11-1). The elements that compose the selected remedy include the following:

- Excavation and off-site disposal of debris piles and establishment and maintenance of a vegetative soil cover for the Ash Landfill and the Non-Combustion Fill Landfill (NCFL) for source control;
- Installation of three in-situ permeable reactive barrier walls, and maintenance of the proposed walls and the existing wall for migration control of the groundwater plume;
- A Contingency Plan will be developed to include one of the following options; provision of an alternative water supply for potential downgradient receptors (farmhouse) or air sparging of the plume in the event that groundwater conditions downgradient of the recommended remedial action described above exceed trigger values;
- Land Use Controls (LUCs) to attain the remedial action objectives; and,
- Completion of a review of the selected remedy every five-years (at minimum), in accordance with Section 121(c) of the CERCLA. If a wall material other than iron is selected, the Army will conduct a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews will be performed until the first five year review. The typical five year review schedule will be followed thereafter.

Land Use Control Performance Objectives

The LUC performance objectives for the Ash Landfill are to:

- Prevent access or use of the groundwater until cleanup levels are met.
- Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells and impermeable reactive barriers.
- Prohibit excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume.
- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact.

The groundwater LUCs will be continued until such time that the concentration of hazardous substances in the groundwater have been reduced to levels that allow for unlimited exposure and unrestricted use. Intrusive restrictions for those areas requiring a vegetative soil cover will continue indefinitely. These land use controls will be implemented over the area of the groundwater plume,

NCFL, and the Ash Landfill, as shown on **Figure 1-1.**

LUC Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Ash Landfill will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the Ash Landfill, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft Ash Landfill LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity. Should the Army transfer these responsibilities, the Army shall provide timely written notice to the regulators of the transferee which shall include the entity's name, address, and general remedial responsibility.

During the excavation of the Debris Piles, the Incinerator Cooling Water Pond area will be re-graded to fill the pond.

The five-year reviews are intended to evaluate whether the response actions remain protective of public health and the environment, and they will consist of document review, ARAR review, interviews, inspection/technology review, and reporting.

A contingency plan will be developed as part of this preferred alternative. The contingency plan will include additional monitoring and air sparging, as necessary, and implementation of an alternative water supply for potential downgradient receptor (farmhouse), if required based on trigger criteria. Following installation of the reactive walls, groundwater from monitoring well MW-56 will be analyzed, and the VOC results will be compared to the Class GA groundwater standards (trigger criteria). If a statistical analysis of the data for this well shows exceedances of Class GA standards, additional remedial action would be required. Temporary wells will be installed in the vicinity of MW-56, and the results will be used to develop an approach for air sparging. A description of the air sparging process is summarized in Alternative MC-3. If concentrations at MW-56 continue to exceed the trigger values following air sparging, an activated carbon system for the farmhouse water supply system would be installed or public water would be delivered to the house. More extensive air sparging would be performed until trigger values are no longer exceeded.

Alternative SC-5 was selected as the preferred source control alternative because the vegetative cover will be an effective barrier against exposure and is therefore one of the highest ranked alternatives for protectiveness to human and ecological receptors. The alternative minimizes the negative short-term effects, such as truck traffic and dust problems, that a large excavation would cause. SC-5 will be compliant with all ARARs. This alternative also minimizes the amount of off-site land filling that will be required. SC-5 is the easiest to implement and has the lowest cost.

Alternative MC-3a was selected as the preferred management of migration alternative because it will achieve substantial risk reduction by chemically destroying the dissolved chlorinated ethene compounds in groundwater. This alternative is effective in achieving these reductions. The alternative will be protective of human health and the environment by preventing off-site migration of the VOC plume. Monitoring of the plume will ensure that downgradient receptors are protected. The monitoring plan will provide adequate warning should monitoring data indicate that the plume is threatening the drinking water supply wells of site neighbors, i.e., the farmhouse wells.

GW Monitoring

Source 2

Proposal for New Task Order

Prepared by:

Parsons Infrastructure & Technology Group, Inc

For:

Proposed New Task Order
USACE Contract No. W912DY-08-D-0003
Implementation of the Post Closure Monitoring and Maintenance Plan for the Ash Landfill Operable Unit, Seneca Army Depot Activity, Seneca County, New York

June 05, 2011

Client: U.S. Army Corps of Engineers

Contract : W912DY-08-D-0003

Project: Implementation of PCMMP for Ash LF OU, SEDA

Parsons

Summary Sheet - Base (LTM YR2)
Supporting Data Format

Printed: 05-Jun-11

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Task 1	Annual Remedy Inspections	$3,100	$0	$3,100	$310	$1	$3,412
Task 2	Ash Initial GW Monit. Event	$31,241	$3,815	$27,426	$3,124	$9	$34,374
Task 3	Ash Second GW Monit. Event	$30,498	$3,815	$26,683	$3,050	$9	$33,556
Task 4	Prep. Of Annual Report	$16,543	$0	$16,543	$1,654	$9	$18,206
Task 5	Project Management	$31,371	$0	$31,371	$3,137	$13	$34,521
TOTAL		$112,753	$7,630	$105,123	$11,275	$40	
PROJECT TOTAL							$124,069

Client: U.S. Army Corps of Engineers

Contract : W912DY-08-D-0003

Project: Implementation of PCMMP for Ash LF OU, SEDA

Parsons

Summary Sheet - LTM YR3 (Optional)
Supporting Data Format

FY13

Printed: 05-Jun-11

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Optional Task 6	Annual Remedy Inspections	$3,152	$0	$3,152	$315	$1	$3,467
Optional Task 7	Ash Initial GW Monit. Event	$31,926	$4,300	$27,626	$3,193	$5	$35,124
Optional Task 8	Ash Second GW Monit. Event	$31,175	$4,300	$26,875	$3,118	$5	$34,297
Optional Task 9	Prep. Of Annual Report	$16,278	$0	$16,278	$1,628	$4	$17,910
Optional Task 10	Project Management	$31,900	$0	$31,900	$3,190	$7	$35,097
TOTAL		$114,431	$8,600	$105,831	$11,443	$21	
PROJECT TOTAL							$125,895

Client: U.S. Army Corps of Engineers

Contract : W912DY-08-D-0003

Project: Implementation of PCMMP for Ash LF OU, SEDA

Parsons

Summary Sheet - LTM YR4 (Optional)
Supporting Data Format

Printed: 05-Jun-11

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Optional Task 11	Annual Remedy Inspection	$3,855	$0	$3,855	$385	$0	$4,240
Optional Task 12	Ash Initial GW Monit. Event	$32,506	$4,500	$28,006	$3,251	$3	$35,759
Optional Task 13	Ash Second GW Monit. Event	$31,740	$4,500	$27,240	$3,174	$3	$34,916
Optional Task 14	Prep. Of Yr 4 Annual Report	$16,621	$0	$16,621	$1,662	$3	$18,285
Optional Task 15	Project Management	$32,706	$0	$32,706	$3,271	$4	$35,980
TOTAL		$117,427	$9,000	$108,427	$11,743	$12	
PROJECT TOTAL							$129,182

Source 3

FINAL
ANNUAL REPORT AND YEAR 4 REVIEW
FOR THE
ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Site

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

PARSONS
100 High Street
Boston, MA 02110

Contract Number W912DY-08-D-0003
Task Order No. 0001
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

September 2011

- The remedial action continues to meets the requirements of the USEPA's "operating properly and successfully" designation; and

- The Army will continue to monitor the performance of the biowall system, including semi-annual periodic evaluations of the potential need to recharge the biowalls.

4.2 Recommendations

Based on the first four years of long-term monitoring at the Ash Landfill OU, the Army recommends continuing the semi-annual frequency of monitoring based on the process shown in **Figure 12** (which is also Figure 7-3 of the RDR). The recommendations for LTM during year four of monitoring are as follows:

- Biowall process monitoring wells (MWT-26, MWT-27, MWT-28, MWT-29, and MWT-23) will be monitored on a semi-annual basis. Each year a recharge evaluation will be completed. As stated in the RDR (Parsons, 2006b), if a recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in **Figure 12**. MWT-28 and MWT-23 will continue to be monitored as part of the performance monitoring wells to supplement data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-28 and MWT-23, and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion.

- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the four years of LTM events at the Ash Landfill OU, the concentrations of COCs, specifically TCE, in the wells downgradient of the source area (near PT-18A) have decreased.

- The off-site performance monitoring well (MW-56) will continue to be monitored on a semi-annual basis.

- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors.

- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the fifth year of LTM, based on the process outlined in **Figure 12**.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Draft Annual Report and Year 4 Review
Ash Landfill Operable Unit
Seneca Army Depot
Romulus, New York

Comments Dated: June 28, 2011

Date of Comment Response: October 5, 2011

Army's Response to Comments

GENERAL COMMENTS

Comment 1: The first bullet in Section 3.5, Biowall Recharge Evaluation, states that "A specific, absolute set of conditions or parameter values are not appropriate to determine the need to recharge (the Biowall);" however, a general set of guidelines is presented. Based on the general guidelines for oxidation reduction potential (ORP), total organic carbon (TOC), and dissolved oxygen (DO), some parameters appear to be outside the ideal range of values in recent sampling events. For example, in MWT-28, the ORP value of -100 millivolts (mV) is at the ideal range limit of <-100mV and the TOC value of 12 milligrams per liter (mg/L) is outside the ideal range of >20 mg/L. In MWT-23, the last several quarters of sampling yielded low TOC values, decreasing from 20 mg/L in Round 6, at the ideal range of >20 mg/L, to 5.9 mg/L in Round 10.

Additionally, analytical results are considered for trichloroethene (TCE), cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC) and "If COC concentrations have rebounded by greater than 50% for any single sampling event, this will indicate that recharge should be considered." The baseline comparison for the 50% rebound criteria is not identified; however, in some instances, it appears that an increase of more than 50% was observed from one sampling event to the next. In MWT-27, during Rounds 9 and 10, the cDCE concentration increased from 0.18J ug/L to 1.1 ug/L, and in MWT-23, during rounds 9 and 10, the cDCE concentration increased from 0.41 J ug/L to 4.6 ug/L. While the concentrations may not exceed the groundwater standard, the 50% increase threshold is surpassed in these samples.

While these values in and of themselves may not necessitate a recharge of the biowalls at the current time, the trends displayed in the geochemical parameters (i.e., falling outside the "ideal" ranges) coupled with the increase in constituent of concern (COC) concentrations (especially during Round 10) suggest that recharge of the biowalls may be necessary during the next evaluation period. Revise the Annual Report to discuss and quantify, as much as possible, how much further the referenced parameters must change before recharge for the biowalls will be considered.

Response 1: As discussed in Section 3.5, the recharge evaluation is based on a lines-of-evidence approach; as such, the conclusion that recharge is needed is based on a comprehensive evaluation of multiple factors. There is no singular value that can be specified for any one parameter where crossing that value would indicate the need to recharge; similarly, the evaluation does not lend itself to quantifying how much further a reference parameter must change for recharge to be considered. Based on experience with biowalls at other DoD sites (such as Altus AFB) in the past five years since the RDR was prepared, there is a more advanced understanding of when it may be necessary to recharge a biowall. In these evaluations, the geochemical parameters are used to explain why an increasing trend in contaminant concentrations is observed, and to confirm that the trend is due to substrate depletion rather than relatively slight changes due to natural variation or limits of analytical accuracy. Therefore, both an increasing trend in VOC concentrations and consistent trends in multiple geochemical parameters demonstrating that substrate depletion is the cause of VOC trends should be observed.

A measurement of the percent rebound of concentrations comparing values that are below the detection limit, are estimated concentrations (J-flags), or are below the GA Standard challenges our ability to state with confidence that an increase in concentrations is due to depletion of organic substrate. Given that concentrations are at the lower limits of the analytical method, evaluating concentrations when as increase in consecutive rounds rises above the GA Standard is considered a more practical approach than considering an absolute 50% rebound metric. The current data do not show a consistent increase in VOC concentrations over multiple events and therefore do not constitute an increasing trend. For example, concentrations of cis-DCE at MWT-27 have varied from below detection to 11 µg/L from March 2007 to December 2010. A singular increase from 0.41 J µg/L in June 2010 to 4.6 µg/L in December 2010 is notable; however, given the variation in concentration over time at this location (and that the initial concentration of cis-DCE was 60 µg/L) it is advisable to wait for additional monitoring data to confirm that a trend is occurring that it is due to substrate depletion. Overall, TCE and DCE have not been detected above the GA standard of 5 µg/L and the detections are not consistent or in an increasing pattern.

The concentrations of vinyl chloride have been vacillating between levels below and just above the detection limit. In addition, vinyl chloride is a product of reductive dechlorination, and an increase in vinyl chloride may be an indication that the process is operating properly. Since the concentrations of DCE and TCE remain below the GA standard, the slight increases in concentrations are not a current concern; rather they indicate that further monitoring and evaluation are warranted.

In summary, some of the geochemical parameters have not been as strong in the last couple of monitoring rounds and there is some relatively low variations in VOC concentrations. However, recharge should be considered when conditions are such that consistent trends develop that show the geochemical parameters continue to weaken and that concentrations of TCE and DCE are increasing above the GA standard over more than a single event.

recharge potential

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

OWNER COST

Related Topics

SOURCE 4

- *Direct Costs*
- *Professional Labor Overhead / G&A*
- *Field Office Overhead / G&A*
- *Prime Contractor Profit*
- *Subcontractor Profit*
- *Contingency*
- *Markup Calculations*
- *Applying Markup Percentages*
- *Adjusting Markups for Each Technology*
- *Creating Custom Markup Templates*
- *Markups Report*

Source 5

DRAFT MEMORANDUM

1 February 2012

To: Steve Absolom, Seneca Army Depot Activity

From: Beth Wasserman, Bruce Henry (Parsons)

cc: Todd Heino (Parsons)

Subject: Replenishment Options for the Ash landfill Biowall System at Seneca Army Depot Activity, New York

Site

The permeable mulch biowalls at the Ash Landfill were installed in 2006. In past Ash Landfill Annual Reports, a biowall recharge evaluation was performed using a lines-of-evidence approach based on a review of analytical and geochemical data. The Army maintains that the recharge evaluations demonstrate that the biowalls continue to operate as designed, and a replenishment of the biowalls is not required.

The EPA has provided comments on the past two years of Annual Reports, and noted concern that some of the trends in the geochemical parameters and constituent of concern (COC) concentrations may indicate that biowall recharge may be necessary in the future. The Army continues to respond to EPA with an explanation of the biowalls strong performance and achievement of the long-term monitoring objectives. Although replenishment is not necessary at this time, Parsons has prepared a cost estimate for the replenishment of the biowalls, should it be required in the future.

BACKGROUND

The effectiveness and longevity of permeable mulch biowalls primarily depends on sustaining adequate levels of bioavailable organic substrate in the biowall reactive zone. Even though biowalls are intended as passive, long-term remedies, bioavailable substrate may decrease over time to levels that cannot support effective degradation. Therefore it may be necessary to determine when, and how, the substrate should be replenished.

Mulch and compost are mostly cellulose, hemi-cellulose, and lignin, which are slowly degraded under anaerobic conditions in the subsurface. Physically the mulch may be expected to last up to 29 years (Shen et al., 2010). Other investigators have installed biowalls filled with a variety of waste cellulose solids (e.g., sawdust and mulch) for the treatment of nitrate-contaminated water and have found little reduction in performance over periods of 7 to 15 yrs of operation (Robertson et al., 2008).

However, as the mulch degrades, the more readily degraded components (e.g., cellulose) are depleted relative to the most recalcitrant components (e.g., lignin). Therefore, the ability of the mulch mixture to sustain biological activity also decreases over time. The amount of bioavailable substrate necessary to sustain performance will be highly site-specific depending on 1) the rate of groundwater flow, 2) the flux of native electron acceptors (for example dissolved oxygen and sulfate), 3) the type and concentration of contaminants present, and 4) the reducing conditions necessary for contaminant degradation to occur. For example, the reduction of nitrate and perchlorate require much less reducing conditions than chlorinated solvents.

Data over periods up to eight years are available to determine the longevity or long-term effectiveness of permeable mulch biowalls. Four examples include the following (ITRC, 2011):

- The OU-1 biowall installed by the Air Force at Altus AFB showed little reduction in percent TCE removal through 2009, over eight years after installation. However, data collected by the USEPA in 2010 shows an increase in TCE within the biowall (unpublished data), and the Air Force has replenished portions of the biowall in 2011.
- The SS-17 biowall system at Altus AFB was replenished in 2008 at 3 years after installation. Improved performance has been observed for over 2 years of post-replenishment monitoring.
- The B301 biowall at Offutt AFB was monitored over a 5 year period and showed no reduction in effectiveness in reducing concentrations of TCE.
- Full-scale biowalls at the former Naval Weapons Industrial Reserve Plant (NWIRP) in McGregor, Texas have been operating since 2002 to 2005, with select biowalls replenished every 3 to 6 years, but not all biowalls have required replenishment.

Based on these observations, it appears that permeable mulch biowalls may require replenishment every 4 to 6 years.

TECHNICAL APPROACH

Two options for substrate distribution were evaluated for the Ash Landfill biowall system.

Option 1. Injection by Recirculation – All Biowall Segments

The first option is to install 8-inch diameter recirculation wells and inject by recirculation along each section of biowall. The use of large diameter wells installed within the biowall allows for extraction from one location in the biowall, amendment in-line with EVO, and re-injection into another large diameter well. Since the permeability of the biowall is much higher than the surrounding native sediments, flow is primarily along the length of the biowall. For costing purposes it was assumed the well are installed at intervals of approximately 100 to 120 feet, including wells at the ends of the biowalls. In addition, it was assumed that neat vegetable oil pre-mixed with emulsifiers would be purchased and mixed in the field. This is a practical approach given the relatively high permeability of the biowall.

Option 2. Hot Spot Treatment by Direct-Push Injection

An additional option evaluated for hot spot treatment using a pre-mixed EVO product into temporary direct-push injection points. A premixed EVO product was selected due to the fine-grained nature and relatively low permeability of native sediments compared to the biowalls. It was assumed that an area of approximately 2500 square feet (50 feet by 50 feet) could be treated using 36 direct push points on 8-foot centers in about 4 days of injection. Some additional hours were included for work plan and reporting revisions to add a hot-spot treatment.

ROUGH ORDER-OF-MAGNITUDE COSTS

Rough order-of-magnitude (ROM) costs for the distribution option summarized below. All costs are present day costs.

Option 1. Injection by Recirculation – All Biowall Segments

Under this scenario, it was assumed that the full length and volume of each trench would be replenished using a field-mixed emulsified oil applied at a rate of 6% oil by volume of the biowall pore space. Given an effective operating rate of 30 gpm at 7 hours per day, the injection could be completed within 36 days. The primary reduction in cost for this option are cost of the substrate ($165K) and a driller to install recirculation wells ($26K). The cost estimate for this option is summarized below, and includes project management for one year, a work plan, installation, and a construction summary report.

PM & Procurement	$30,000
Report	$20,000
Work plan	$22,000
Field work (labor)	$100,000
Labor	**$172,000**
Material (i.e. oil)	$165,000
Travel	$19,800
Subcontractor	$26,000
Other ODCs	$32,500
Subcontractors/ODCs:	**$243,300**
Total Cost:	**$415,300**

COST

Option 2. Hot Spot Treatment by Direct-Push Injection

Under this scenario, it was assumed that an area of 2,500 square feet (50 feet by 50 feet) would be treated using 36 direct-push injection points. Well points would be placed on 8-foot centers and a pre-mixed EVO product applied at a rate of 3.7% oil by volume of the treatment zone pore space. The cost estimate for this option is summarized below, and includes some extra hours for work plan and reporting of the hot-spot injection. There is an economy of scale with this approach. For example, to double the size of the hot-spot treatment might increase cost by an additional $40K.

PM & Procurement	$2,000
Report	$3,500
Work plan	$3,500
Field work (labor)	$16,000
Labor	**$25,000**
Material (i.e. oil)	$18,000
Travel	$4,000
Subcontractor	$12,000

Other ODCs	$300
Subcontractors/ODCs:	**$34,300**
Total Cost:	**$59,300**

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Phase	2013	2014	2015	2016	2017	2018		OUTYR	Total
GW Monitor	126	126	126	126	126	126		503	1259
recharge well								415	415
CTO	14	14	14	14	14	14	/84	100	184
Well ABAND								129	179
	140	140	140	140	140	140		1147	1987