Minutes of the USACE Public Meeting

Presentation of the Proposed Plan for Soils - TNT Area A Plum Brook Ordnance Works

November 30, 2009

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Meeting Attendees

Rick Meadows, USACE Huntington
Lisa Humphreys, USACE Huntington
Lannae Long, USACE Nashville
Peg Kingsley, RAB Member
Richard Pitsinger, RAB Member
David Speer, RAB Member
Paul Jayko, Ohio EPA NWDO
Archie Lunsey, Ohio EPA NWDO
Steve Downey, Shaw Environmental
Mike Gunderson, Shaw Environmental
Tom Siard, Shaw Environmental
Eric Dodrill, Erie Soil and Water Conservation
Connie Livchak, Eco-Geological
Helen Owens, Stillwater Environmental

Meeting Agenda

The agenda for the meeting was to present to the public the Proposed Plan for Soils – TNT area A at Plum Brook Ordnance Works in Sandusky, Ohio.

Presentation of the Proposed Plan

Rick Meadows outlined the meeting process and explained that the public meeting initiated the public comment period which runs through January 13, 2010. The public comment period was extended until after the first of the year to account for holidays. Copies of the Proposed Plan were made available at the BGSU Firelands Library and on the Huntington District's FUDS Website (www.lrh.usace.army.mil/projects/current/derp-fuds/pbow). Documents supporting the Proposed Plan were also available on the website. The comments received from the public review will be evaluated and addressed in a Responsiveness Summary which is incorporated into the Decision Document. If any of the comments drive a significant change, the Proposed Plan will be reevaluated.

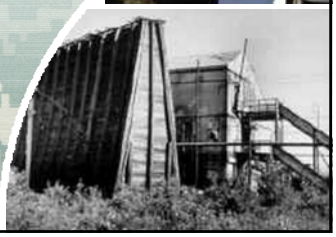
Steve Downey, Shaw Environmental presented the Proposed Plan for Soils – TNT Area A at Plum Brook Ordnance Works. The presentation is included as part of these minutes.

Rick Meadows adjourned the public meeting.

Proposed Plan for Soils, TNT Area A Former Plum Brook Ordnance Works, Sandusky, OH

Public Meeting

Steve Downey, PE, PMP
Project Manager
Shaw Environmental, Inc., Knoxville, TN
30 November 2009



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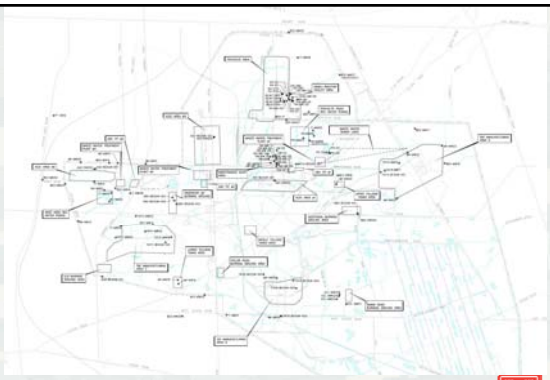
Purpose of the TNT Area A Proposed Plan

- Present the Preferred Alternative proposed for cleanup of contaminated soils
  - Based on results of remedial investigation / feasibility study (RI/FS) completed for TNTA soils
  - Prevents human exposure to soil containing constituents of concern (COCs) at concentrations above remediation goals
  - Reduces potential ecological hazards
- Provide for public comment

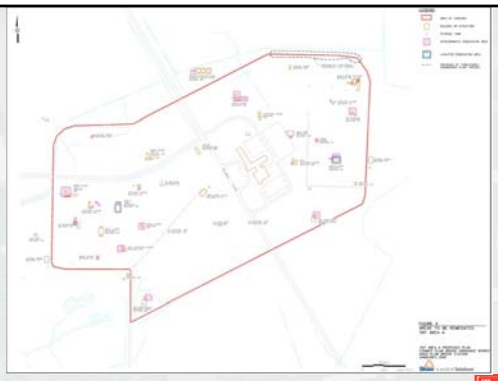
Community Involvement

- The Proposed Plan is made available to the public for a 30-day review and comment period (extended to account for holidays; 13 Jan 2010)
- At the end of the 30-day review period, all comments will be:
  - documented in the administrative record (AR),
  - evaluated and incorporated into the overall remediation plans, if deemed feasible by USACE,
  - and included in the Responsiveness Summary of the Decision Document



Summary of Preferred Remedial Alternative

- USACE to complete remedial action at TNTA consisting of:
  - Excavation of approx. 17,200 CY of site soils and sediment
  - Alkaline Hydrolysis treatment of approx. 3,800 CY
  - Windrow composting of approx. 800 CY
  - Chemical stabilization of approx. 1,300 CY lead-contaminated soil
  - Backfill with treated soil (2,500 CY) supplemented with imported clean fill
  - Surface restoration with compost (2,100 CY)
  - Off-site disposal of approx. 20,400 tons
- The selected response action will be documented in a Decision Document for TNTA by the USACE



Summary of TNTA RI

- Remedial investigation (RI) fieldwork
  - Field investigation conducted in 2000
  - 238 surface and 202 subsurface (up to 10' deep) soil samples collected for screening laboratory analysis
  - 8 surface and 31 subsurface soil samples collected for laboratory analysis using standard SW-846 Method 8330
- Human Health Risk Assessment (HHRA) results
  - Total soil (on-site resident and construction worker)
    - OEPA ILCR criterion (1E-5) was exceeded for on-site resident (3E-2) and construction worker (4E-4)
    - OEPA HI criterion (1) was exceeded for on-site resident (219) and construction worker (60)

Summary of TNTA RI (continued)

- HHRA Results (continued)
  - Total soil (continued)
    - 2,4-DNT/2,6-DNT account for 99% of the total ILCRs and 91% of the HIs
    - Additionally, TNT and Aroclor 1260 contributed appreciably to ILCRs
    - Additionally, TNT and 2-ADNT/4-ADNT contributed appreciably to HIs
  - Surface soil (groundskeeper, indoor worker, hunter, and child venison consumer)
    - ILCRs for groundskeeper (6E-6) and indoor worker (3E-6) are less than OEPA ILCR criterion (1E-5)
    - *De minimis* cancer risk (<1E-6) for hunter and child venison consumer
    - HI for groundkeeper (0.65) and indoor worker (0.28) are less than OEPA criterion (1)
    - *De minimis* noncancer hazard (<0.1) for hunter and child venison consumer

Summary of TNTA RI (continued)

- HHRA Results (continued)
  - Surface water (resident and construction worker)
    - *De minimus* cancer risk and noncancer hazard for on-site resident and construction worker
  - Sediment (resident and construction worker)
    - *De minimus* cancer risk and noncancer hazard for on-site resident and construction worker

Summary of TNTA RI (continued)

- Screening Level Ecological Risk Assessment (SLERA) results
  - Surface soil ecological HIs using food chain modeling
    - NOAEL-based HIs ranged from 6 (hawk) to 1,420 (marsh wren)
    - The most significant "risk drivers" were TNT, Aroclor-1260, and lead
  - Sediment and surface water ecological HIs using food chain modeling
    - NOAEL-based HIs were 86 (raccoon) and 51 (duck)
    - Depending on receptor, the most significant "risk drivers" in sediment were (in general order, depending on receptor): Aroclor-1260, TNT, and 2-ADNT
    - Potential ecological risks associated with surface water were *de minimis*

Summary of Evaluated Alternatives

- Alternative 1 – No Action
- Alternative 2 – Excavation, Windrow Composting, and Off-Site Disposal
- Alternative 3 – Excavation and Off-Site Treatment/ Disposal
- Alternative 4 – Excavation, Windrow Composting, Chemical Stabilization, and Off-Site Disposal
- Alternative 5 – Excavation, Alkaline Hydrolysis, Windrow Composting, Chemical Stabilization, and Off-Site Disposal/On-Site Placement

Alternative 1 Details

- No Action
  - Required by NCP as baseline for comparing other alternatives
  - Does not reduce human health risks to levels considered acceptable by US EPA (threshold criterion)
  - Does not employ removal, containment, or treatment actions that mitigate impact of source areas on receptors or other media
  - Thus, No Action was not recommended

Alternative 2 Details

- Excavation, Windrow Composting, and Off-Site Disposal
  - Excavate approximately 17,200 CY of contaminated soil
  - Backfill excavation with clean material
  - Windrow composting of excavated material
  - Off-site disposal of composted soil and untreated soil at a non-hazardous landfill
  - Off-site disposal of soil contaminated with lead in a RCRA Subtitle C TSDF
  - Off-site disposal of PCB waste at a TSCA approved landfill

Alternative 3 Details

- Excavation and Off-Site Treatment/Disposal
  - Excavate approximately 17,200 CY of contaminated soil
  - Backfill excavation with clean material
  - Off-site disposal of soil that passes TCLP test and meets LDR requirements (estimated to be 72%) at a non-hazardous landfill
  - Off-site disposal of soil classified as hazardous due to 2,4-DNT and lead concentrations (estimated to be 28%) in a RCRA Subtitle C TSDF
  - Off-site disposal of PCB waste at a TSCA approved landfill

Alternative 4 Details

- Excavation, Windrow Composting, Chemical Stabilization, and Off-Site Disposal
  - Excavate approximately 17,200 CY of contaminated soil
  - Backfill excavation with clean material
  - Windrow composting of excavated material
  - Off-site disposal of composted soil and untreated soil at a non-hazardous landfill
  - Chemical stabilization and off-site disposal of soil contaminated with lead
  - Off-site disposal of PCB waste at a TSCA approved landfill

Alternative 5 Details

- Excavation, Alkaline Hydrolysis, Windrow Composting, Chemical Stabilization, and Off-Site Disposal/On-Site Placement
  - Excavate approximately 17,200 CY of contaminated soil
  - Alkaline Hydrolysis of soil classified as hazardous due to 2,4-DNT
  - Windrow composting if required as a polishing step to further reduce 2,4-DNT concentration and to meet RGs for on-site disposal
  - Off-site disposal of untreated non-hazardous soil at a non-hazardous landfill
  - Chemical stabilization and off-site disposal of soil contaminated with lead
  - Off-site disposal of PCB waste at a TSCA approved landfill
  - Backfill with soil treated only by alkaline hydrolysis as structural backfill supplemented by clean imported fill
  - Use treated compost as topsoil for site restoration

Proposed Action Description – Alternative 5

- Excavate areas where RG concentrations (Table 4 of the PP) are exceeded (approx. 17,200 CY consolidated; 22,300 CY unconsolidated)
- Segregate soil contaminated with lead greater than 400 mg/kg for chemical stabilization and disposal at a nonhazardous landfill
- Perform Alkaline Hydrolysis treatment of soil classified as hazardous due to 2,4-DNT
  - Establish treatment area at TNTA
  - Alkaline chemical mixture (e.g., caustic soda and ferric chloride) blended into soil using an excavator or wheel loader
  - Further treat with windrow composting as required to allow on-site placement or to meet TCLP criteria
  - Windrow composting will be performed in an outdoor area within TNTA

Proposed Action Description – Alternative 5 (cont'd)

- Off-site disposal of untreated non-hazardous soil at a non-hazardous landfill
- Off-site disposal of PCB waste at a TSCA approved landfill
- Backfill with soil treated only by alkaline hydrolysis as structural backfill supplemented by clean imported fill
- Use treated compost as topsoil for site restoration

Remedial Performance of Proposed Action

- Alternative 5 is protective of human health and the environment
- Complies with Applicable or Relevant and Appropriate Requirements (ARARs)
- Permanently removes COCs from TNTA at concentrations above RGs
- Permanently reduces toxicity and mobility of contaminants
- Introduces no risk to the community or environment during implementation
- Is technically & administratively implementable
  - No engineering or regulatory restrictions prevent implementation
  - Amendments and equipment required are readily available

Proposed Action Schedule

- Alternative 5 can be implemented in 21 to 27 months
  - Work plan development
  - Mobilization and excavation of 17,200 CY of contaminated soil
  - Pre-compliance testing
  - Alkaline Hydrolysis treatment of excavated soil
  - Neutralization as required
  - Windrow Composting as required
  - Confirmatory sampling
  - Disposal of treated and untreated nonhazardous soil and sediment
  - Disposal of PCB waste at a TSCA approved landfill
  - Backfill with clean soil (treated and imported)
  - Surface placement of composted material and site restoration
  - Demobilization

Proposed Action Costs

- The total projected construction cost for the entire scope of TNTA, as identified in the FFS Addendum for TNT Area A is $4.0 million.
- A detailed cost estimate is presented in Table 4-7 of the FFS Addendum.
- A general summary of the cost estimate is as follows:

1. Work Plans, Reports and Procurement	$25,000
2. Mobilization/Demobilization	$6,000
3. Excavation (17,157 CY)	$602,532
4. Alkaline Hydrolysis and neutralization (3,803 CY)	$478,184
5. Windrow Composting (761 CY)	$371,621
6. Chemical Stabilization of Lead-Contaminated Soil (1,339 CY)	$24,017
7. On-Site Disposal (compost 2,100 CY, soil 2,460 CY)	$46,179
8. Off-Site Disposal (20,400 tons)	$693,571
9. Site Restoration	$480,857
Subtotal	$2,727,961
Contingency (30%)	$818,388
PM Multiplier (7.5%)	$204,597
Fee/Profit (10%)	$272,796
Total Cost	$4,023,742