East Tennessee Technology Park
Zone 1 Final Soils Proposed Plan Status

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SSAB Meeting
January 14, 2015
ETTP Site Location

East Tennessee Technology Park
East Tennessee Technology Park

ETTP End State: Achieving reuse as a Commercial Industrial Park
Regulatory Background

- ETTP was split into two areas to address soil remediation to protect humans
  - Zone 1 – 1,400 acres surrounding the industrial portion of the site.
  - Zone 2 – 800 acres in the main plant industrial areas.
- Original Sitewide RI/FS included all of ETTP (Zone 1 & Zone 2) and addressed all media
  - Sitewide ROD project was postponed in 2008 to conduct a groundwater treatability study
  - Agreement in 2010 to proceed with an accelerated Zone 1 Final ROD for all media
CERCLA PROCESS

- Preliminary Assessment
- Site Investigation Work Plan & Site Investigation
- Remedial Investigation Work Plan (RIWP)
- Remedial Investigation/Feasibility Study (RI/FS)
- Proposed Plan (PP)
- Record of Decision (ROD)
- Remedial Design Work Plan (RDWP)
- Remedial Design Report (RDR)
- Remedial Action Work Plan (RAWP)
- Post Construction Report

Regulatory Background

- 2013
  - EPA invoked informal dispute on the D2 RI/FS
  - Agreement to defer Zone 1 surface water and groundwater to the Sitewide ROD and proceed with Zone 1 Final Soils ROD
- 2014
  - D3 RI/FS issued and approved by TDEC
  - D1 Zone 1 Final Soils Proposed Plan issued
  - D2 Zone 1 Final Soils PP issued in November
Previous Zone 1 Actions

- K-1070-A Burial Grounds
- K-1085 Old Firehouse Burn Area
- Duct Bank Remediation
- K-720 Fly Ash Pile
- K-901-A Holding Pond Fish Kill/Cylinder Removal
- Demolition of Powerhouse Cooling Towers and Buildings
- Zone 1 Interim Soils ROD Remediation
- K-1007-P1 Pond Ecological Enhancement
- Voluntary Ecological Soils Remediation
Zone 1 Interim ROD

- Interim ROD (IROD) signed in 2002
- Established soil cleanup goals for worker protection and protection of groundwater
- Goal was unrestricted Industrial use in upper 10 feet soil
  - Identified 80 exposure units (EUs)
  - No maximum remediation level exceedance
  - No average remediation level exceedance across EU
  - Cumulative risk $<1 \times 10^{-4}$ incremental life-time cancer risk (ICLR) and Hazard Index (HI) of 1
- Identify and remove sources of groundwater contamination
Zone 1 IROD Remediation

Interim ROD goals met in most areas
- 1,396 soil sample locations
- 80,037 yd$^3$ soil removed, 61,400 yd$^3$ scrap/debris removed
- 1,269 acres released (71 EUs) for industrial use

Areas not meeting interim ROD Goals
- Contractors Spoil Area
- K-720 Fly Ash Pile
- K-770 Scrap Yard Area
- Duct Bank Corridor

Deferred to Zone 1 Final RI/FS for additional evaluation
Zone 1 Final RI/FS

- Builds on Sitewide Remedial Investigation
- Incorporates Zone 1 Interim ROD remedial actions
- Evaluates results of voluntary soil remediation for ecological protection
- Performed risk assessments for industrial workers, recreational users and terrestrial wildlife
- Developed alternatives for areas not meeting Zone 1 Interim ROD goals and to protect terrestrial wildlife
RI Conclusions

- Unrestricted industrial use is also protective of recreational use; therefore cleanup levels for unrestricted industrial use are also protective of recreational use.
- Potential risks:

<table>
<thead>
<tr>
<th>Site</th>
<th>Contamination</th>
<th>Site Risk Summary</th>
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</thead>
<tbody>
<tr>
<td>Contractors Spoil Area</td>
<td>PAHs, metals, VOCs currently capped</td>
<td>Potential risk to industrial users and terrestrial wildlife if cap fails</td>
</tr>
<tr>
<td>K-770 Area</td>
<td>Only contamination is asbestos</td>
<td>Potential risk to industrial and recreation users</td>
</tr>
<tr>
<td>K-720 Fly Ash Pile</td>
<td>Metals</td>
<td>Potential risk to adjacent surface water if cap fails</td>
</tr>
<tr>
<td>Duct Bank Corridor</td>
<td>Metal sludges were grouted in place</td>
<td>Potential risk to industrial user</td>
</tr>
<tr>
<td>Duct Island East &amp; West capped areas</td>
<td>Metals and PCBs currently covered</td>
<td>Potential risk to terrestrial wildlife if cover fails</td>
</tr>
<tr>
<td>K-901 Drainage Area</td>
<td>Chromium</td>
<td>Potential risk to terrestrial wildlife</td>
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Key Issues to be Addressed by ETTP Zone 1 Soils ROD

- Remedy for areas not meeting the interim ROD goals
- Selection of Final Land Use Controls for Zone 1
- Path forward for areas of ecological interest
Remedial Action Objectives

- Future industrial use (at a minimum of 10 feet of depth) of the majority of Zone 1 by protecting future industrial workers from exposure to contamination in soils (same as interim goal); alternatively protect future recreational users from exposure to contaminants in soils.
- Protect local-level terrestrial wildlife receptors populations from contamination in surface soils over habitat areas.
- Protect underlying groundwater and nearby surface water from contamination in soils (same as interim goal).
Soil Remediation Alternatives

1. No Action

2. Additional Land Use Controls (LUCs)/Cover for K-770, Contractors Spoil Area (CSA), K-720 and Duct Bank Areas, and removal of small ecological risk areas

3. Additional LUCs/Cover for CSA, K-720 and Duct Bank Areas, removal of K-770 and small ecological risk areas

4. Additional LUCs/Cover for CSA and Duct Bank Area, removal of K-770, K-720, and small ecological risk areas.
Preferred Alternative (2)

- Cover K-770 Area to prevent exposure to asbestos
- Remove small ecological risk areas to protect terrestrial wildlife; additional characterization
- Land Use Controls
  - Prevent residential use
  - Control use of waste management areas: Contractors Spoils Area and K-720 Fly Ash Pile
  - Control access below 10 ft (below 2 ft in Duct Bank Corridor and K-770 Area)
- Groundwater use restrictions
Rationale for Preferred Alternative

- Provides best trade-off of cost ($3.9 M capital), effort and level of protection and permanence
- Effectively controls access to areas of residual contamination
- Provides cost-effective permanence by not relying on covers for protection of ecological receptors at Duct Island
ETTP Site Transformation

• Transferred assets (to date)
  – Over 700 acres
  – 14 buildings (332,000 ft$^2$)
  – Site infrastructure, roads and services transfer to City of Oak Ridge

• Leased assets:
  – 530 acres leased to five Private Companies

• 20 private companies operating at ETTP along-side UCOR

• Over 400 acres planned for disposition by 2017
Former Powerhouse Area

- Largest parcel at over 400 acres
- 44 Acres have been requested by CROET (ED-15)
- Access to, Highway 58, rail, and Clinch River make it desirable
Powerhouse Area

1945

- Oil storage tanks
- S-50 Process Bldg.
- Powerhouse Bldgs.
- Coal storage yard

Poplar Creek

Clinch River
Powerhouse Area Transfer Footprint

Today
Path Forward

- Address Regulator comments and revise Zone 1 Final Soils Proposed Plan (February 2015)
- Regulator approval of the Zone 1 Final Soils Proposed Plan (April)
- Public comment period/public meeting (April - May)
- Continue working with regulators to develop and test process for lifting land use controls for incorporation into the ROD for future use to facilitate reindustrialization
- Regulator approval of the Zone 1 Final Soils ROD (December)
- Implement selected remedial action (January 2016)
- Future ETTP Sitewide ROD to address all groundwater and surface water