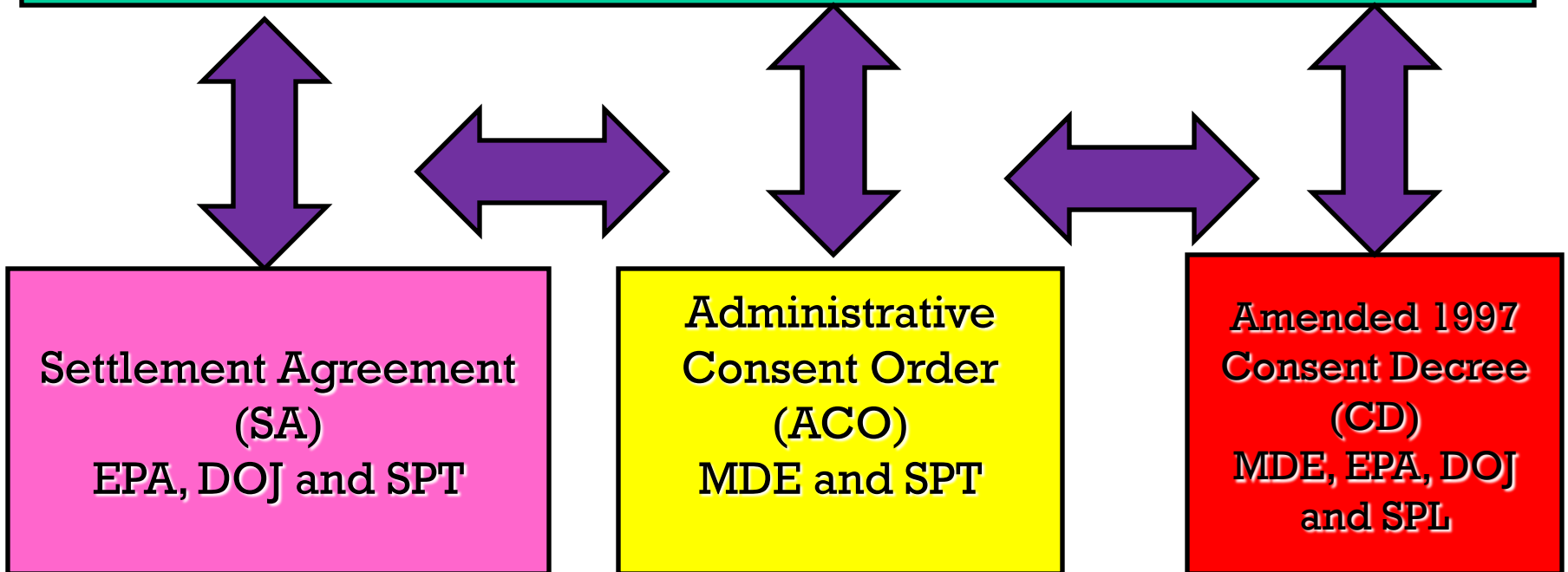


Environmental Work On the Entire Site For MDE and EPA

MDE will assume primary responsibility for overseeing implementation of the onshore work in consultation and cooperation with EPA

EPA will assume primary responsibility for implementation of the offshore work in consultation and cooperation with MDE





Administrative Milestones



- **ACO Effective Date September 18, 2014.**
- **SPT provided a copy of the Trust Agreement and documentation that the Trust has been funded with \$48 million to MDE.**
- **SPT provided \$5 million bond to MDE.**
- **SA Signed by EPA, DOJ and Sparrows Point Terminal, LLC in September 2014.**
- **After 30-day public comment period and EPA review of public comments, EPA finalized SA on November 25, 2014.**
- **SPT provided \$3 million to EPA to conduct offshore investigation and remediation.**



Technical Milestones

January 23, 2015 – Required SA and ACO work plans submitted to the Agencies for the following areas:

- **Area A**
- **Coke Oven Area**
- **Rod and Wire Mill**

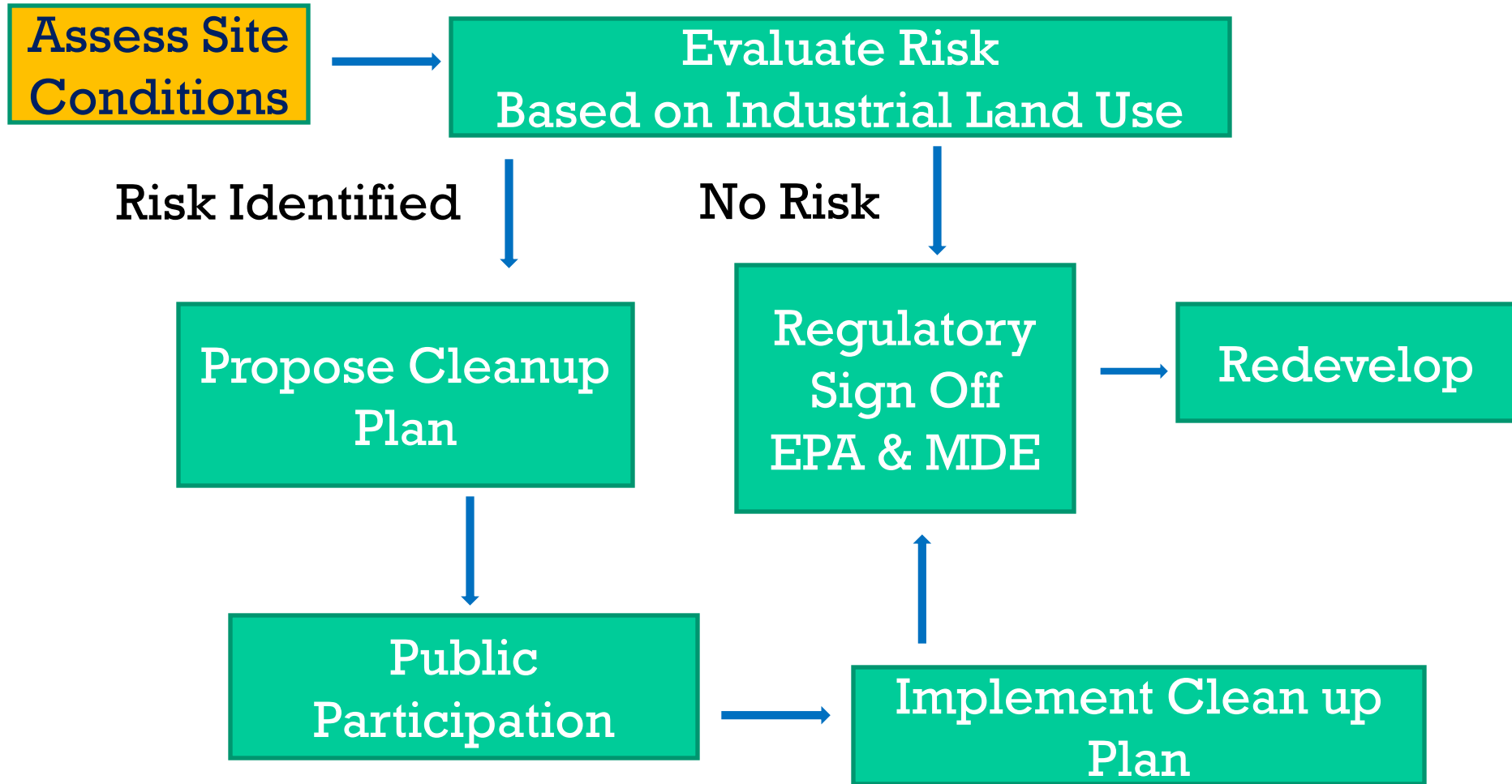
January 23, 2015 – Required Area B Work Plan submittal schedule provided to Agencies

February 2, 2015 - Area A1 Revised Work Plan Approved

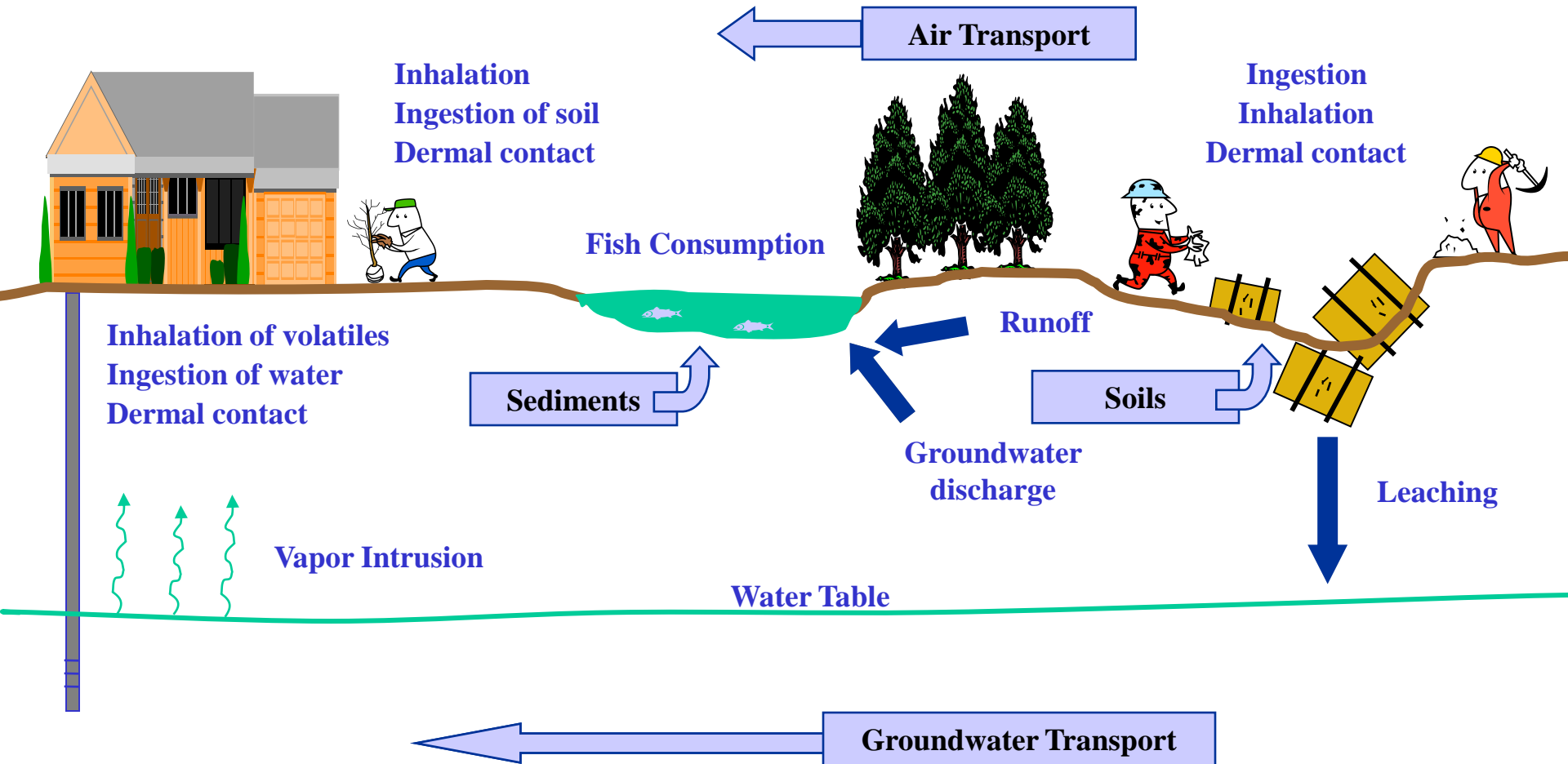
February 5, 2015 – Area A1 field work began

February 9, 2015 - Central Receiving Warehouse Work Plan approved

February 19, 2015 - Revised Tin Mill Canal Sediment Sampling and Analysis Plan received



Sampling Data for Risk Assessment

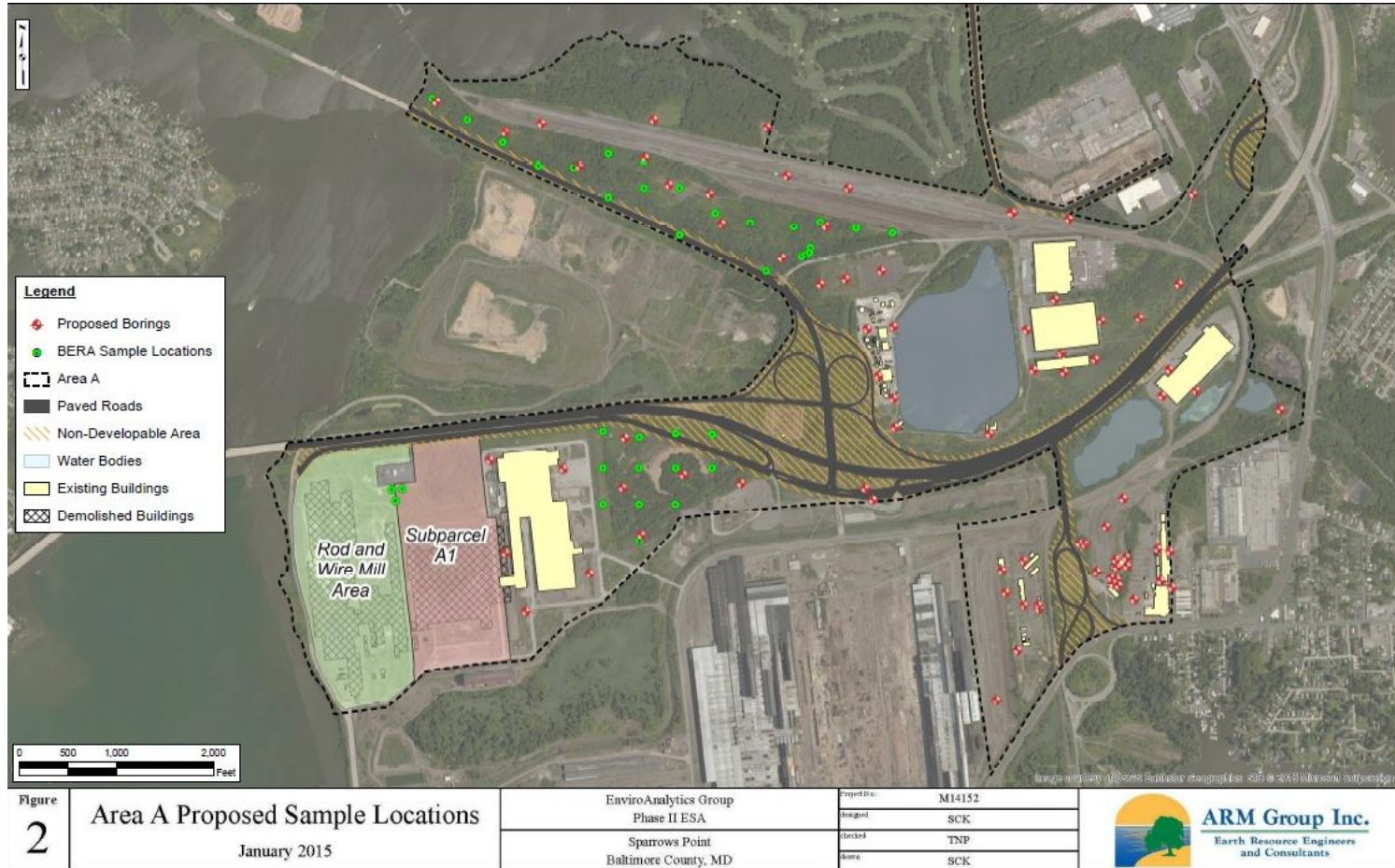


Area A



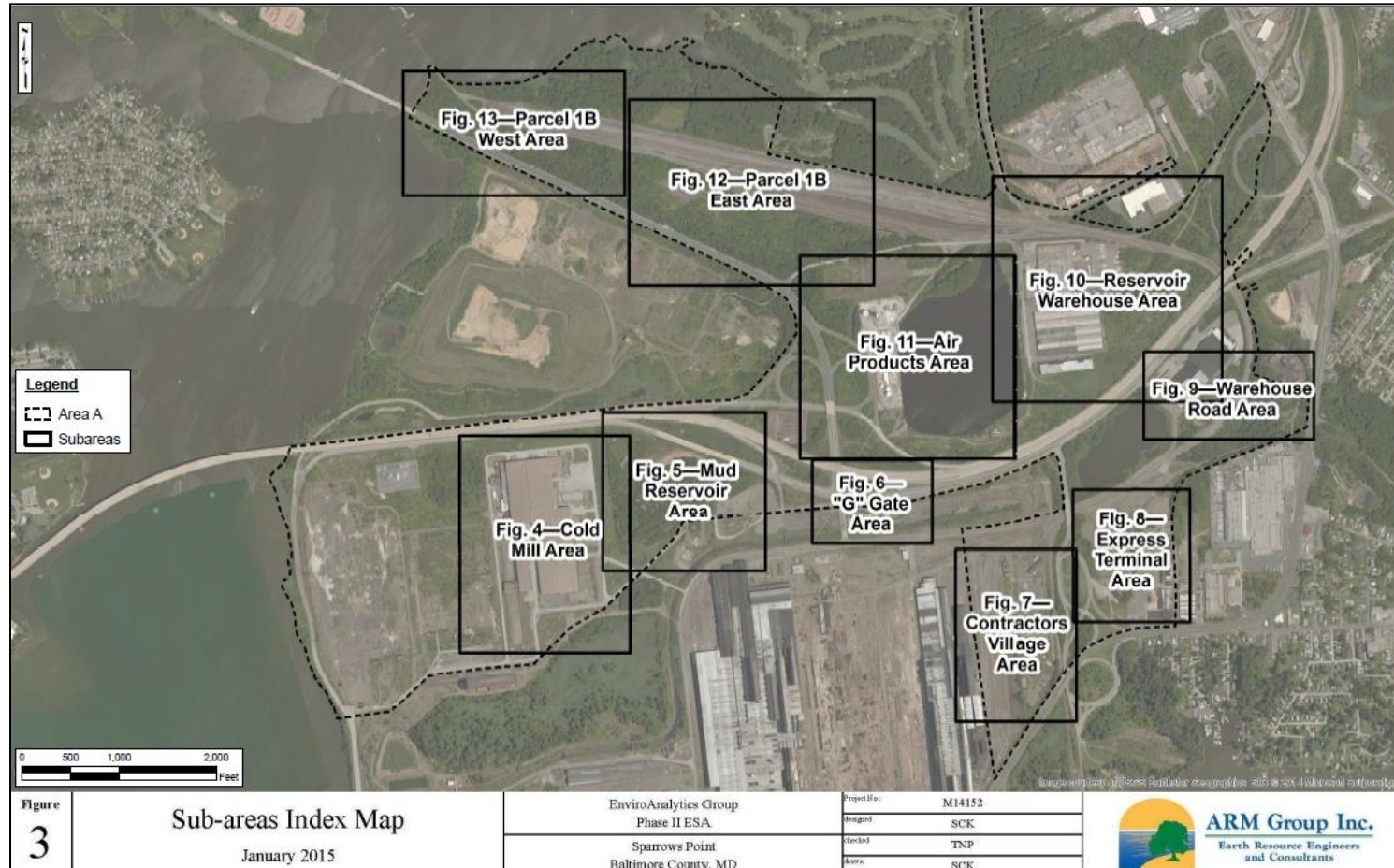
Development Area A - Exhibit A

789 Acres

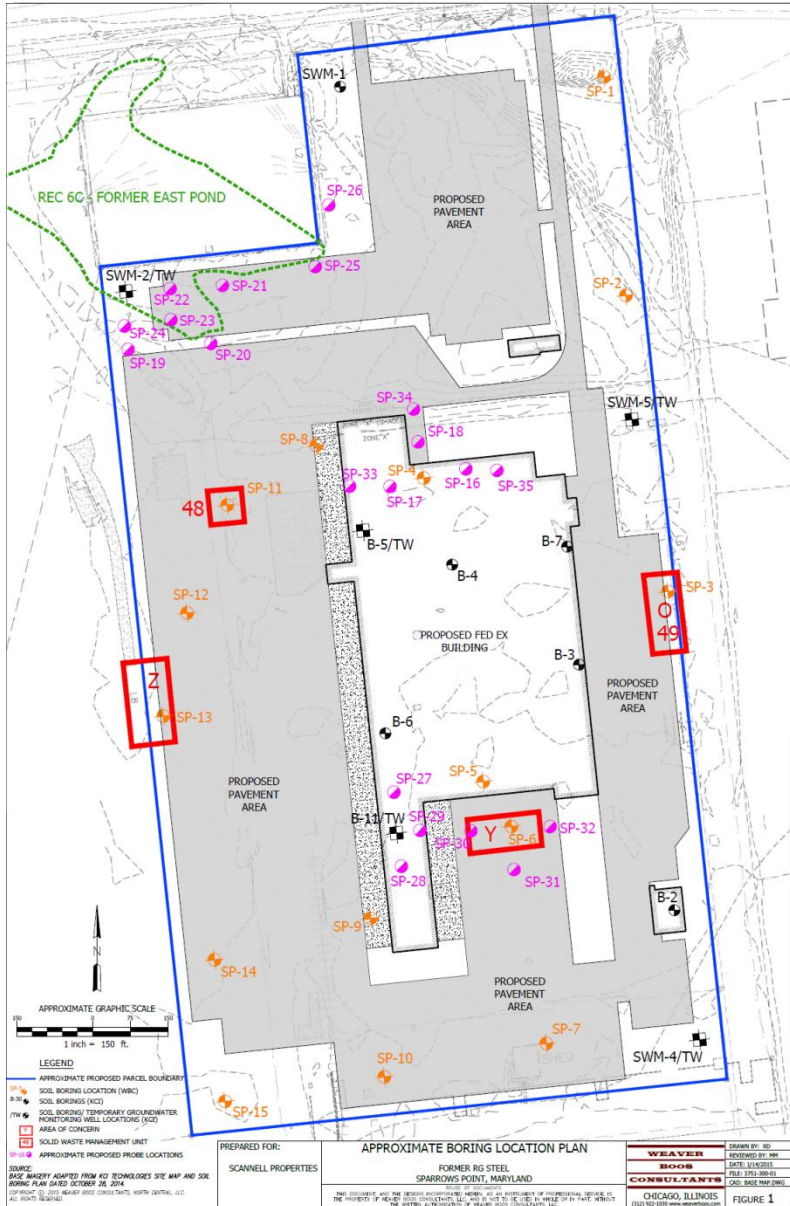


Work plan includes collecting samples of soil, soil gas and ground water

Draft Work Plan Area A



Area A Can be Divided into Subareas based on Previous and Future Use



Current Master Cleanup Plan



Rod and Wire Mill

The former mill produced rod and wire products from 1940's to early 1980's

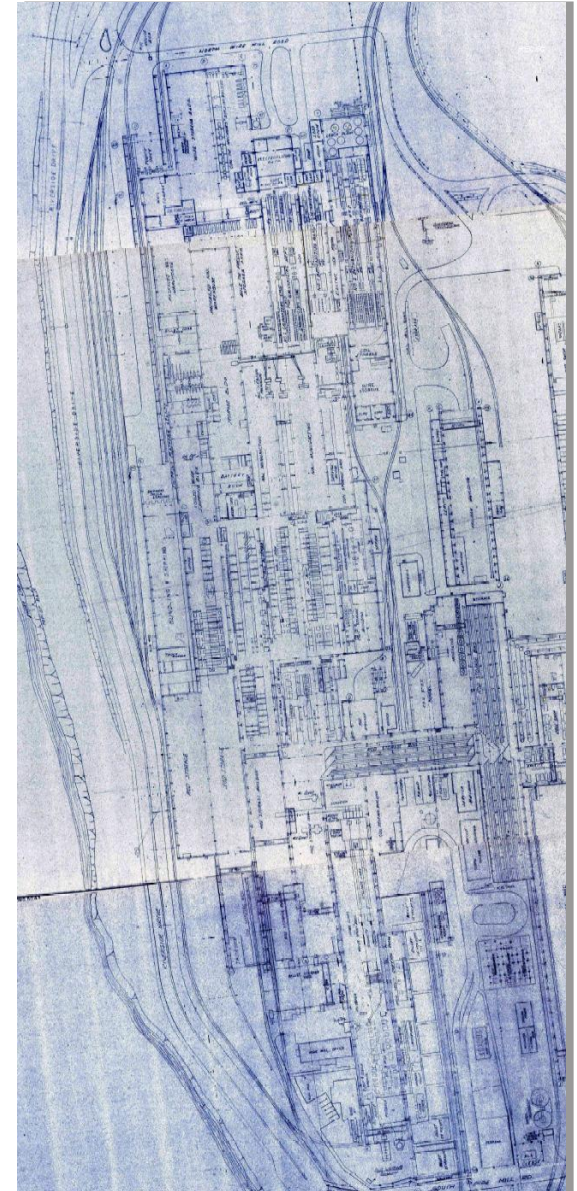
Approximately 60 acres of the former mill have been demolished.

Manufacturing process included leaching of zinc ore and treatment to remove cadmium impurities.

Storage of leach residue, dewatered sludge and excess filtrate resulted in soil and ground water contamination with zinc and cadmium.



Aerial View 1982







Rod and Wire Mill Interim Measure



Dissolved cadmium and zinc plumes in sandy aquifers.

31 existing monitoring wells in shallow and intermediate zones, and 2 recovery wells in intermediate zone

Ground water pumped to Humphreys Creek Waste Water Treatment Plant for treatment



From 1987 to the end of 2014 the groundwater pumping system has removed:

10,745 lbs of cadmium and
345,896 lbs of zinc

Goals:

Further delineation of cadmium and zinc in soil and groundwater

Investigate the presence of other potential contaminants

Feasibility studies by bench and field scale testing of clean up alternatives including passive reactive walls and soil stabilization



Phase II and Pre-Design Investigation Work Plan
Former Rod and Wire Mill Area

Approximately 7,500 feet in length.

30-50 feet wide and 15 feet below grade.

Constructed in 1960's from slag



Conveyance for stormwater runoff and groundwater baseflow from 800 acres of the Sparrows Point site.

During active steel making operation received wastewater discharges from numerous manufacturing facilities associated with steelmaking and steel finishing operations.

Under current conditions average flow during dry weather 3,000 to 4,000 gallons per minute (gpm) but can increase to 50,000 gpm during storm events.

Water collected from Tin Mill Canal routed to Humphrey's Creek Waste Water Treatment Plant for treatment prior to discharge under NPDES permit to outfall 14.

Cleanout goal to remove sediments, provide erosion and sediment control, stabilization of canal floor and sidewalls and subsequently improve quality of water discharge from site.

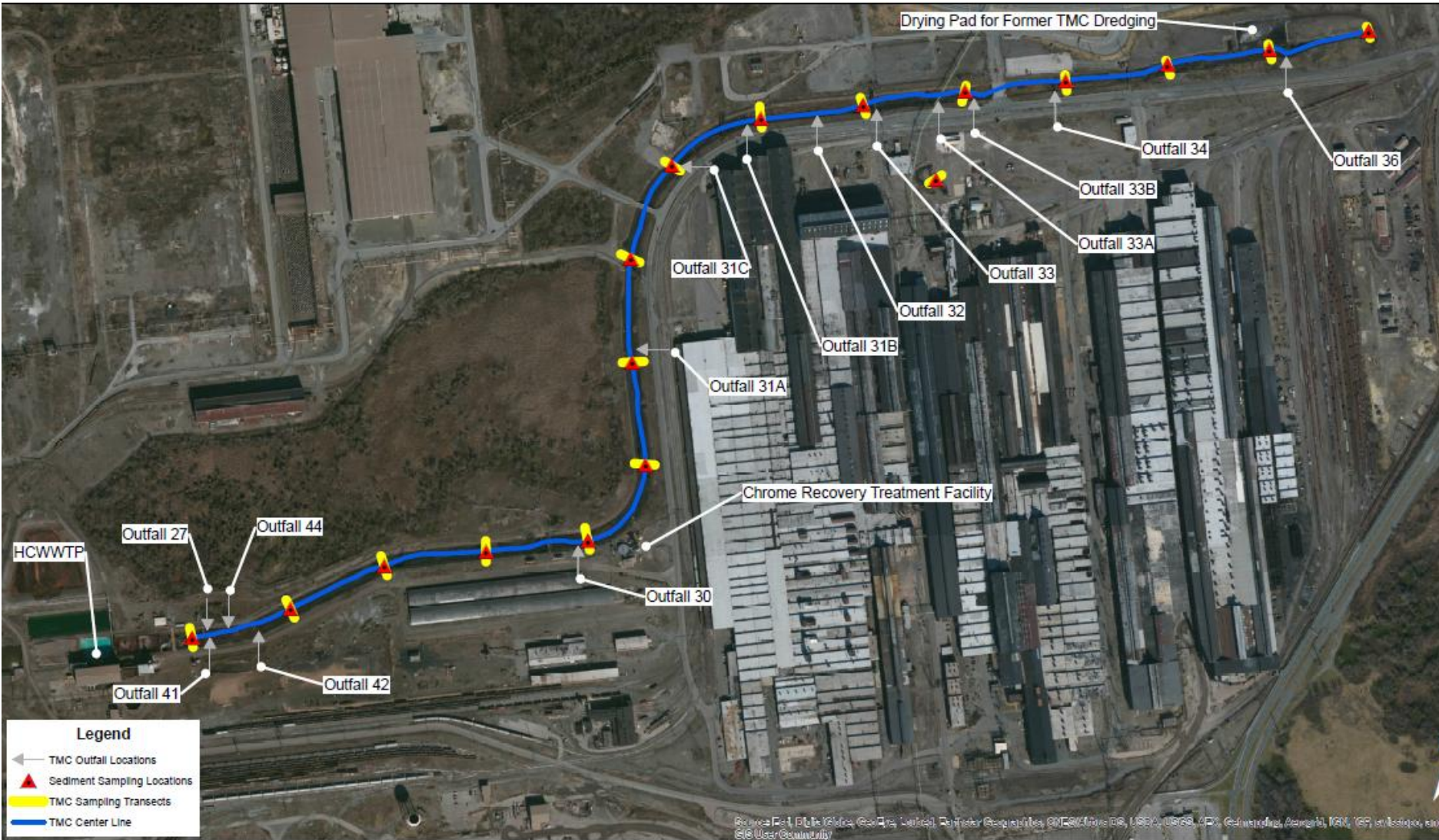


Work plan to determine volume of sediments to be removed and disposal options

Collect samples of sediments for physical and chemical properties at 17 transect locations



Draft Tin Mill Canal Work Plan Sediment Sampling Locations



Coke Oven Area Historic Operations



Coke Oven Area Interim Measures



Conduct feasibility studies of alternatives including enhanced vacuum recovery, passive containment walls, and bioremediation for incorporation into final remedy

Delineate lateral extent of free phase product in Cell 2 and Cell 6 areas and evaluate potential communication.

Delineate lateral and vertical extent of DNAPL in Cell 4/5 Area.

Evaluate effectiveness of Cell 1 and Cell 3 treatment systems.

Define Area-Wide groundwater elevations, flow directions and gradients.

Define Area-Wide dissolved phase constituent concentrations in the shallow and intermediate groundwater zones.





Coke Oven Interim Measures Progress



- **Cell 1- Shallow zone air sparging and soil vapor extraction.**
Destroyed approximately 12,445 lbs of hydrocarbons in 4 years
- **Cell 2-Intermediate zone groundwater extraction and shallow zone air sparging and soil vapor extraction**
Pumping began in September 2014 and removed approximately 3,424 lbs of hydrocarbons in 5 months
- **Cell 3-Shallow zone air sparging and soil vapor extraction.**
Destroyed approximately 1,444 lbs of hydrocarbons in 3 years
- **Cell 4-Anaerobic bioremediation abandoned due to ineffectiveness**
- **Cell 5 Shallow zone dual phase extraction of naphthalene**
Pumping began September 2014 and destroyed approximately 44 lbs of hydrocarbons in 5 months
- **Cell 6 Shallow zone product recovery of benzene.**
Recovered approximately 88,649 lbs of hydrocarbons in 5 years.
Three new skimmer pumps added in October 2014 recovered 685 gallons this quarter



Sparrows Point Offshore Investigation

- Phase 1 Northwest Shoreline
- Phase 2 Southeast Shoreline





Figure 11
Proposed Sampling Locations for the Second Round of the Offshore Investigation Phase I Northwest Shoreline Baltimore, Maryland

Legend

- Phase I Northwest Shoreline
- Perennial Creek/Stream
- Boundary between Sand and Fine Grained Sediment
- Round 1 Sediment Sampling Location
- Proposed Surface Sediment Sampling Location
- Proposed Sediment Coring Location
- Proposed Sediment Coring Contingency Location
- Proposed Pore Water Sampling Location
- Greys Landfill Well
- Groundwater Well Sampled in June 2014
- Approximate Location of Active Stormwater Outfall
- Approximate Location of Inactive Stormwater Outfall

Map Date: January 2015
 Image Source: ESRI 2011
 Projection: NAD 1983 StatePlane Maryland FIPS 1900 (US Feet)

0 300 600 1,200
 Feet
 1 inch = 1,200 feet

First round sampling included collection of surface sediment from 20 locations, along eight transects.

Surface sediments (6 inch) show elevated metals and high concentrations of oil and grease.

Second round sampling work plan approved by Agencies on January 14, 2014.

Second round sampling plan includes sediment cores (-5 to -6 feet), pore water samples and additional surface sediment samples at co-locations.

Off-Shore Sampling



Photo credit EA Engineering **Will Begin as soon as Weather Permits**

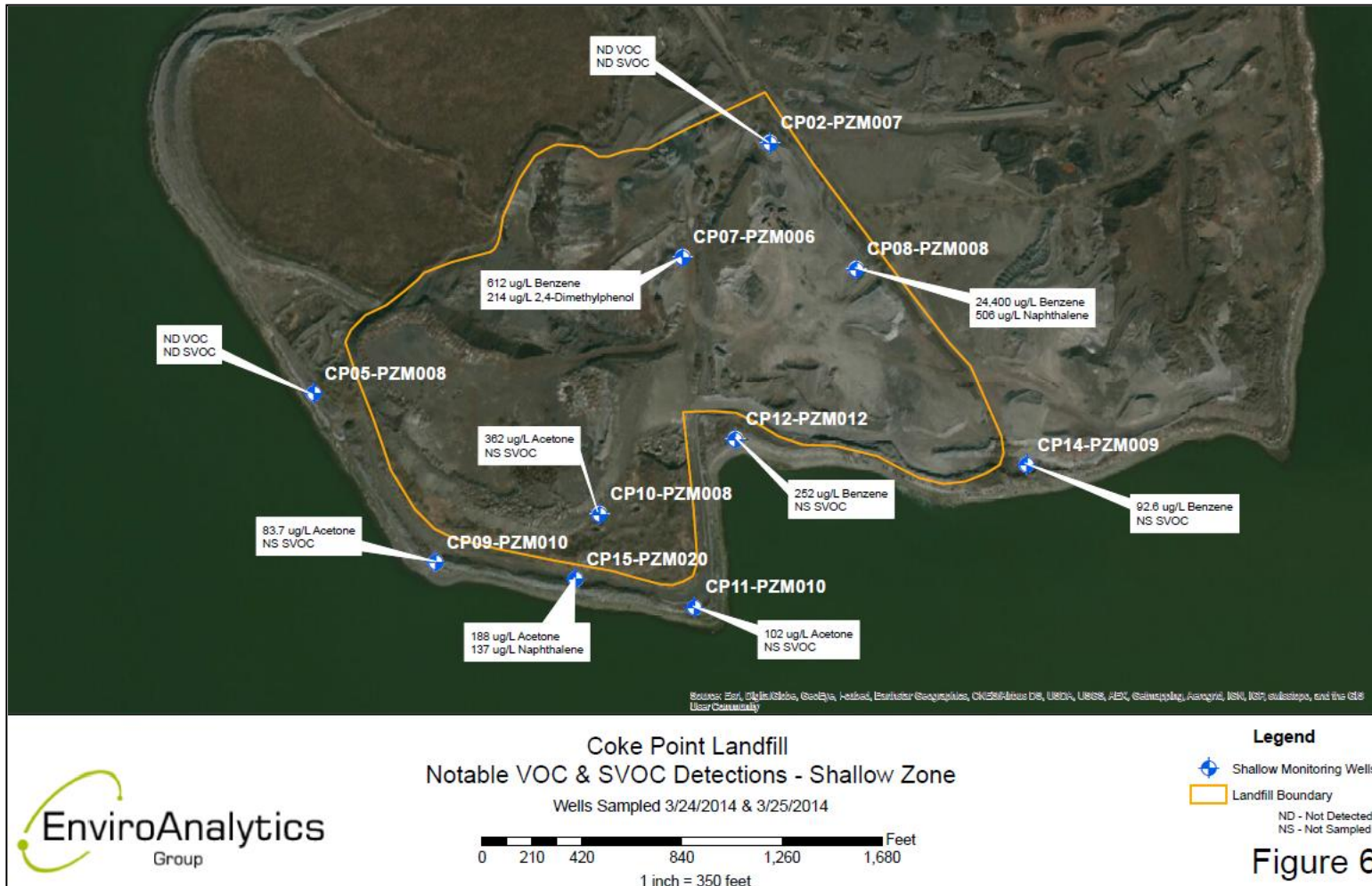
Greys Landfill

After an MDE Inspection in December 2014 the following work is being performed as required at Greys Landfill :

- Placement of intermediate cover on side slopes of the landfill above elevation 85' to 110'.
- Repair of erosion on slopes from 60' to 100' elevation of the landfill.
- Repair of the 85' bench elevation of the landfill and placement of storm water control systems on the 85' to 110' elevation side slopes.

Grading and stabilization construction work for the side slopes was initiated on January 20, 2015 and is expected to be complete by the end of March 2015.







Coke Point Land Fill Proposed Monitoring Wells



Coke Point Landfill - Proposed Monitoring Wells

July :

Legend

-  Proposed Monitoring Wells Shallow
-  Landfill Boundary

Additional Wells Approved February 12, 2015

Dust Control Plans for Demolition submitted to MDE-Air and Radiation Management Administration (ARMA) for review and approval

Specific plans cover implosion of structures such as the Blast Furnace.

Dust control measures implemented during demolition



Asbestos material removed from buildings prior to demolition

MDE ARMA Performs Periodic Inspections

Demolition materials sorted and recycled

Demolition

Although most of the metal structures can be demolished with “Snips” some metal items must be cut with a torch to a manageable size

Cutting conducted under a MDE – ARMA Approved Plan



Demolition



Demolition





In Summary



Sparrows Point Terminal LLC In Compliance with ACO and SA Requirements

Per ACO-First Review of Trust Funding will be completed in March 2015

Work Plans have been Submitted for Rod and Wire Mill, Tin Mill Canal, Coke Oven Area, and Area A

Work proceeding on Area A1

Agencies are reviewing information on other sites for occupancy by potential tenants.

Work Plan for portions of Area B to be submitted to Agencies in April 2015

Work plan for round 2 off-shore samples approved-slight delay due to weather-Final report to be submitted to Agencies in 2015

Compliance work at Greys and Coke Point Landfill proceeding
Revised Stormwater pollution prevention plan (SWPPP) approved February 11, 2015

Site Demolition work is proceeding

In Summary



Photo
Credit
Andrew
Fan

Sparrows Point site work is proceeding at a much faster pace...



For Additional Information From EPA:

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Visit the MDE Website!

<http://www.mde.maryland.gov>

Questions?

