SUPERFUND

From Discovery to Cleanup

1. Site Discovery
2. Site Evaluation
3. NPL Listing
4. Remedial Investigation
5. Feasibility Study
6. Proposed Plan
7. Remedy Selection
8. Remedial Design
9. Remedial Action
10. Operation and Maintenance ← *WE ARE HERE*
11. NPL Deletion
12. Reuse

Want to learn more about these steps?
Please visit: **http://go.usa.gov/M7RY**

NEXT STEPS

The United States Environmental Protection Agency (EPA) is overseeing an ecological assessment for the ongoing cleanup at the U.S. Titanium Superfund Site. The purpose of this assessment is to learn more about the surrounding ecosystem and its conditions. The work was conducted by the Potentially Responsible Party's (PRP's) contractor. Results of this assessment will help better determine any future steps that must be taken to continue the protection of human health and the environment.

RESOURCES (case sensitive)

- EPA U.S. Titanium Superfund Site Website:
  http://go.usa.gov/xKtDr
- 2015 Five-Year Review of the U.S. Titanium Superfund Site:
  http://go.usa.gov/xKYxB
- To learn more about Superfund:
  https://www.epa.gov/superfund

QUESTIONS? CONTACT US!

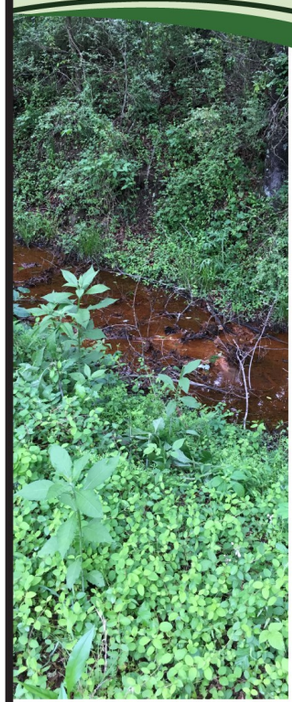
Lisa Denmark
EPA Remedial Project Manager
215-814-3314
denmark.lisa@epa.gov

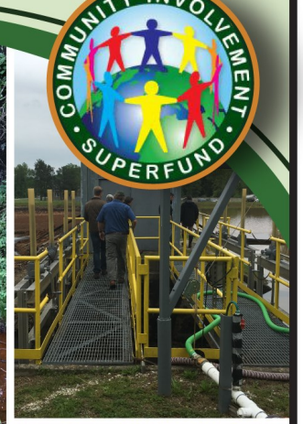
Alexander Mandell
EPA Community Involvement Coordinator
215-814-5517
mandell.alexander@epa.gov

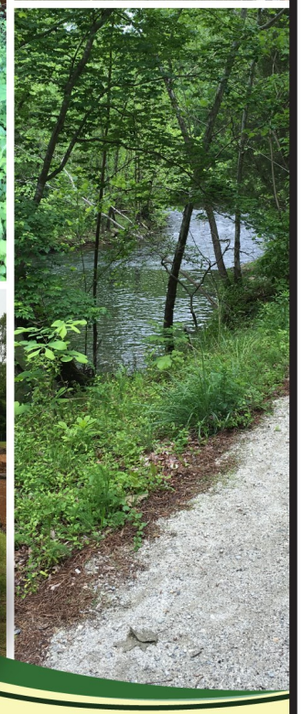
U.S Environmental Protection Agency, Region 3

Serving Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District Of Columbia

U.S. TITANIUM SUPERFUND SITE







Community Update

SPRING 2017

EPA OVERSEEING CLEANUP EFFORT AT THE U.S. TITANUIM SUPERFUND SITE:

The United States Environmental Protection Agency (EPA) is overseeing an assessment on the U.S. Titanium Superfund Site where radium material and buried drums were recently discovered on a 0.25 acre portion of a 50 acre Site. Current surface sampling efforts have determined that the radium levels detected at the surface are within the naturally occurring limits, also known as background. At this time, the area has been fenced and the public remain protected. EPA is working closely with the Potentially Responsible Partys' (PRP's), as well as The Virginia Department of Environmental Quality (VDEQ), to put a plan in place for additional sampling and to determine the best remedial option for eventual removal of the waste. If you have any questions regarding this effort, please do not hesitate to contact us.

WHAT YOU MAY HAVE NOTICED RECENTLY:

While walking on the portion of the Virginia Blue Ridge Railway Trail that is located near the Site, you may have noticed discoloration of the water in the nearby drainage ditch (see image below). The cause of this color change is ferrous iron from historical mining. Current monitoring of this water indicate that pH levels are around 3.5, making it moderately acidic. As cleanup efforts continue, EPA recommends that you and your pets stay on the trail in this area, and do not to come in contact with the water at this time.

PAST CLEANUP EFFORTS:

The U.S. Titanium Superfund Site cleanup is comprised of seven areas in which a remedy had been selected for a long-term cleanup in the original Record of Decision (ROD) in 1989. Also, this ROD included other areas of focus. They are as follows:

- **AREA ONE:** In-situ dissolution of buried copperas (mining waste) and above ground treatment of water that has been mixed with the contaminants, also known as leachate

To learn more about in-situ, please visit: **http://go.usa.gov/xKrH5** (case sensitive)

- **AREA TWO:** Surface repair of un-vegetated areas
- **AREA THREE:** Improve surface drainage
- **AREA FOUR:** Drainage control and re-vegetation
- **AREA FIVE:** Drainage control and re-vegetation
- **AREA SIX:** No action needed
- **AREA SEVEN:** Lime used to neutralize any leachate, in combination with wetland construction
- **GROUNDWATER:** Passive collection, with passive treatment, in a constructed wetland
- **SITE WIDE:** Environmental monitoring to ensure the effectiveness of the remedial actions above

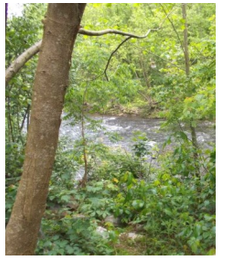
Throughout the history of the cleanup, there have been several changes to the above areas of focus. To view an in-depth look at these changes, as well as other information on this Site, please visit: **http://go.usa.gov/xKYxB** (case sensitive)

SITE BACKGROUND:

- The U.S. Titanium Superfund Site located in Nelson County, Virginia is a 50-acre site formerly occupied by an American Cyanamid Company plant. The plant refined titanium ore and manufactured titanium dioxide for paint pigments from 1931 until 1971. Following plant closure, the processing plant, settling ponds, tailings ponds, wastewater lagoons, and a waste disposal area remained on-site. Acidic storm water runoff from the waste piles and ponds, as well as acidic ground water seeps/springs contributed to six major fish kills in the Piney and Tye Rivers. These events occurred from 1977 to 1981.
- The fish kill in August 1979 prompted the Virginia Water Control Board to request the Circuit Court of Nelson County to order the U.S. Titanium Corporation to bury the mining waste, also known as copperas, from a designated certain area by December 31, 1980. In response to the court order, the U.S. Titanium Corporation secured a contractor to remove the copperas waste from the storage pile and bury it in another pre-approved area. This work was completed in December 1980. However, the ultimate failure of the cap placed over the waste and the lack of source controls in other areas resulted in continued acidic discharge into surface water and groundwater. Elevated concentrations of metals, including iron, aluminum, cadmium, chromium, nickel, and zinc were detected. In December 1982, the site was proposed for inclusion on the National Priorities List (NPL). The Site was listed on the NPL in September of 1983. The NPL is a national list of hazardous waste sites that are eligible for federal funds. These funds are used in the long-term cleanup of Sites, which are commonly known as Superfund Sites.

RECENT SITE PHOTOS

Above and Bottom Left: Images showing vegetation of on-site caps. Bottom Right: Viewpoint of the Piney River from on-site.



Bottom: Outdoor and indoor images of the on-site pump and treat system. This system, which has been operating since 1996, treats acidic groundwater, which is then discharged into the Piney River.