



**US Army Corps
of Engineers**

Huntington District

Formerly Used Defense Sites Newsletter



September 2000 Edition

Pond Expansions Completed as Part of West Virginia Ordnance Works Restoration

Three expansions on existing ponds 7A, 7B and 11, providing over 30 acres of aquatic habitat, are finished at McClintic Wildlife Management Area. The area is located five miles north of Point Pleasant, or eight miles south of Mason off State Route 62. McClintic contains the greatest variety of wildlife habitats to be found on any of West Virginia's Wildlife Management Areas. Approximately 600 acres of farmland, 900 acres of brush land, 160 acres of wetland and 1,100 acres of mixed hardwood forest combine to provide excellent hunting for deer, waterfowl, turkey, squirrel, rabbit, grouse, mourning dove and woodcock. Warm water fishing is allowed in 35 of the 39 ponds, with bass and bluegill anglers enjoying the greatest success. Channel catfish and Northern pike are stocked in several of the ponds.

The ponds are designed as multiple use areas for the sustenance of fish and waterfowl.



Aerial view of pond 7 and 11 expansion

The ponds mitigate the loss of approximately 30 acres of aquatic habitat within the former West Virginia Ordnance Works (WVOW). Pond 16, located within the former red water reservoir area, was destroyed during remediation efforts. An active partnering environment with the West Virginia Division of Natural Resources (DNR) provided the necessary ingredients to en-



Site clearing for pond expansion

sure that the design of the site was in the best interest of the intended wildlife habitat. Pond 16 has since been restored to prime wetland habitat. Additionally, three existing ponds, identified as Pond 7A, Pond 7B and Pond 11, were expanded. The expanded ponds range from shallow depths to seven feet. The ponds are designed as multiple use areas for the sustenance of fish and waterfowl. The DNR will stock fingerlings of bass, catfish, and bluegill. Waterfowl will migrate to the area as soon as water is maintained in ponds. It will take approximately three seasons for the fish to grow large enough for productive fishing.

The site is accessible for the sportsman off paved County Route 12 (Dixie Road), within the McClintic Wildlife Management Area. Parking is available in a gravel lot and the banks of the ponds will be mowed and maintained. The ponds are currently being filled.



Pond expansions details



Pond 7 ready for water

The commitment of the principal parties ensured a quality and sustainable product that will provide West Virginia more protected wildlife habitat. Principle parties involved included the West Virginia DNR, U.S. Army Corps of Engineers, West Virginia Division of Environmental Protection, Chester Engineering, and S. Powell Construction.

Public Awareness: The Next Step (Dolly Sods Ordnance Removal Project)

Background

Dolly Sods is located within the Monongahela National Forest in the counties of Grant, Tucker and Randolph, West Virginia. It is a rugged mountainous area set atop the Allegheny Mountains at the 4100-foot level. For management purposes it has been broken down into two areas. Dolly Sods Wilderness Area, 10,215 acres, and Dolly Sods North, 6,169.5 acres. The Dolly Sods Wilderness Area was created by an act of Congress in 1975 to preserve and protect the area with special opportunities for solitude, primitive recreation and other scientific, educational, scenic and historical values. Management efforts within the Wilderness

Area focus on allowing the forces of nature to reclaim the area, returning it to a natural appearing state.

Between 45,000 and 76,000 people visit Dolly Sods annually

The area was farmed in the early 1800's, logged in the late 1800's until 1913, and was purchased by the Forest Service in 1930. Military maneuvering and training were performed in the Dolly Sods area during World War II from 1943 to 1944 and the land was returned to the Forest Service in 1950. During the military maneuvers both live and inert 81 mm, 60 mm, and 4.2 inch mortars were fired. Records of the targets and firing points were either destroyed or more than likely never recorded.

Public Impact

It is estimated that between 45,000 and 76,000 people visit Dolly Sods annually. The remoteness, back to nature experience, and limited human influences attract the adventurous hiker, mountain biker, hunter, berry picker, and spelunker. The environment, which is pristine in appearance, does not give the visitor the perception that dangerous ordnance exists. The actual amount of ordnance is undetermined but the risk is illustrated by the sporadic but continuous discovery. Through the years several removal efforts have successfully removed ordnance from areas seeing the most use, particularly the Red Creek Valley area, higher density camp sites, and trails.

The reduction of public risk is the driving force behind the remediation of Dolly Sods. The risk to the public due to unexploded ordnance is dependent upon the density of ordnance, the number of visitors and the terrain. It is readily apparent that the chances for injury to the public are increased by the number of persons passing over or by a piece of ordnance. Therefore, operations have concentrated in locations frequented by visitors to the wilderness area such as trails and other easily accessible and

scenic areas. It also seems reasonable that public safety is a greater risk at locations where people spend a greater amount of time and perform activities that could disturb ordnance. For this reason, it has been sensible for ordnance clearance operations to place a greater emphasis upon clearing public areas, which are used as campsites or for other activities in addition to hiking.

All designated and maintained trails, plus their adjoining, known campsites were cleared of ordnance to the depth and width designated during a removal project conducted May 97 through November 98. This remedial action was the most feasible based on the influencing factors of cost, environmental impact, and reduction of public risk and has significantly reduced the amount of ordnance posing a hazard to the public in the most widely used areas. However, it should be noted that the following factors dampen the overall effect: (1) The course of these trails change over time due to the effects of erosion and public movement. (2) Campsites are not permanently marked and there is little restriction upon where camping can occur. (3) Through-



Field investigations have been based on known past site usage

out the North Area there exists numerous trails which are undocumented but are used regularly. (4) Hunters and adventurous explorers are apt to roam without regard to known trails. (5) Heavy rains could dislodge ordnance which coupled with the mountain slopes will cause migration. (6) Sites were chosen based on speculation of past military maneuvers and locations of targets and firing position.

The Next Step

In 1990, the first step of a 10-step process, as seen on the flow chart, began by confirming that the area fulfills the requirements of the Defense Environmental Restoration Plan - Formerly Used Defense

Public Awareness: The Next Step (Continued) (Dolly Sods Ordnance Removal Project)

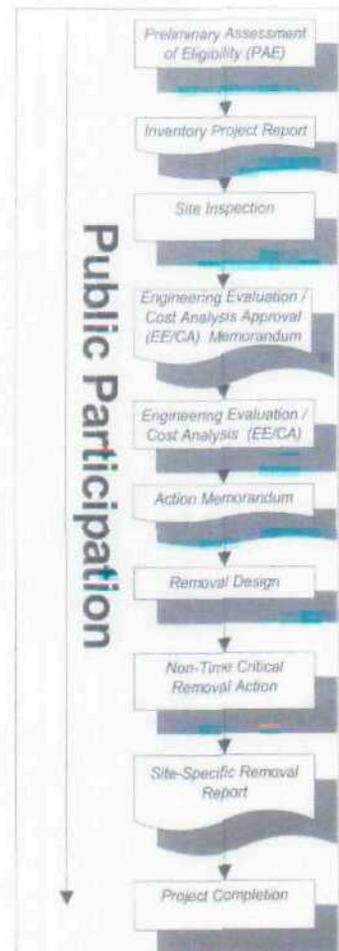
Sites, DERP-FUDS. During the past 10 years all but one of the steps, "Project Completion" has been to some degree accomplished. The removal projects on and around the most used areas have been completed but it cannot be said that Dolly Sods is free of ordnance. The "Next Step" is a Public Awareness and Action Plan that when instituted will act as a perpetual removal action requiring the partnership between the public and involved agencies. It is an inexpensive, environmentally sound approach that will have the greatest impact on sustained public safety.

The objective of the plan is to provide concrete details on the process to ensure public awareness of ordnance and actions to be taken. A strategy is developed for communicating with each specific public stakeholder in the pursuit of the established goals. To be effective, the community awareness program must be gauged according to the public's need for information and its interest and willingness to participate in the remedial process.

An effective and efficient Public Awareness and Action Plan will:

- i) Make the public aware without alarming.
- ii) Develop an understood, accessible, and easily used process for ordnance avoidance and reporting.
- iii) Ensure that stakeholders understand that personal and property safety is the paramount concern during HTRW and OE response actions.
- iv) Serve the public's information needs by keeping local residents, officials, and other stakeholders informed in a timely manner of HTRW/OE response actions. Post findings.
- v) Foster and maintain a climate of understanding and trust between stakeholders.

The Plan is in the initial stages and is expected to be published and in use within the next year. A strong partnership between the Forest Service and the Huntington District, Corps of Engineers is ensuring that the plan makes sense, is useable and sustainable, and reaches out to all users and stakeholders of Dolly Sods.



Wellhead Protection Program In Place for City of Point Pleasant

The Army has installed nine monitoring wells for the City of Point Pleasant public water supply well field, which is located southeast of the West Virginia Ordnance Works (WVOW) site. The purpose of these wells, called "sentry" wells, is to monitor groundwater conditions in the area of the well field. Since the sentry wells are located between the WVOW property and the well field, they provide an "early warning" in the event of possible contaminant migration from the WVOW site toward the well field. Four of these wells monitor the intermediate to deep wa-

ter-bearing zone. The remaining five wells monitor the deep water-bearing zone. Initially, sampling was conducted every three months on the eight original wells. One additional monitor well was installed at a later date.

Currently, all nine wells are sampled every year as part of the WVOW long-term monitoring program. This program is operating to ensure that the Army protects

the water quality for the people of Point Pleasant and surrounding area.



View of City of Point Pleasant Wellfield

Plum Brook Ordnance Works and U. S. Army Corps of Engineers Move Towards Restoration

Background

The former Plum Brook Ordnance Works (PBOW) encompasses over 9000 acres in Erie County Ohio. In the 1940s, under contract to the U.S. Army, the Trojan Powder Company manufactured 2,4,6 trinitrotoluene (TNT), dinitrotoluene (DNT), and pentolite. Approximately 1 billion pounds of these materials were produced between 1941 and 1944. In 1945 PBOW was placed on standby status while the Department of the Army conducted decommissioning and decontamination activities. In September 1945 the property was transferred to the Ordnance Department, the War Assets Department, and the General Services Administration. The National Aeronautics and Space Administration (NASA) purchased 6,500 acres from the former owner.

Site Investigations

The USACE Huntington District, in cooperation with the Nashville and Louisville Districts, has identified Areas of Concern (AOC) at PBOW. AOCs

that have been identified to date include the following: TNT Areas A, B, and C; Red Water Ponds Area; Reservoir No. 2 and Additional Burn Grounds; Ash Pit Nos. 1 and 3; Powerhouse 2 Ash Pits; Lower Toluene Tank Area; Acid Areas 1 and 2; Pentolite Area Waste Lagoons; Garage Maintenance Area; TNT Rail Car Loading Area; Wastewater Treatment Plants 1, 2, and 3 and Site-wide Groundwater. Since project inception, investigative activities have been initiated at TNT Areas A, B, and C and the Redwater Ponds Area, and most recently (since July 2000) data has been obtained and presented on the Remedial Investigation (RI) of TNT Area B.

TNT Area A

The Work Plan for the TNT Area A Remedial Investigation/Feasibility Study (RI/FS) was submitted in May 2000. Fieldwork began in June 2000.

TNT Area B

IT Corporation (IT), the USACE Technical Support Contractor, presented the findings of the RI at TNT Area B during the Restoration Advisory Board (RAB) meeting on September 22, 1999. The objectives of the RI included the following:

- Define physical features and characteristics of the site,
- Determine the nature and extent of the source areas,
- Determine whether contaminant distribution was consistent with past DOD site activities, and
- Characterize risk to current and future human and/or ecological receptors.

IT developed a grid layout to establish sampling locations based on historical detections and locations of potential source areas. Surface and subsurface samples were collected and analyzed to determine concentrations of nitroaromatic compounds, volatile organic compounds (VOCs), semi-volatile compounds (SVOC), polychlorinated biphenyls (PCBs), and metals (lead, copper, and beryllium). In addition to sample collection and analytical activities, IT also conducted a Human Health Ecological Risk Assessment. The draft report on the findings was submitted in July 1999. The Final Report is scheduled for delivery in October 2000.

TNT Area C

The Work Plan for the TNT Area C RI/FS was submitted in May 2000. Fieldwork began in June 2000.

Red Water Ponds Area

IT Corporation (IT) presented findings from Red Water Ponds Investigation at the May 1999 Restoration Advisory Board meeting. IT reviewed the physical data such as overburden and groundwater elevation information as well as pollutant concentrations at each sample location. The documents have been incorporated into the Administrative Record for public review.



Aerial view of PBOW



Former Power House at PBOW

Limited Site Investigations

Limited Site Investigations (LSI) were conducted for the following sites: Ash Pits Nos. 1 and 3; Garage Maintenance Area; TNT Loading Area; Wastewater Treatment Plant (WWTP) Nos. 1 and 3; Lower Toluene Tank Area; and Pentolite Waste Area Lagoons. Final Reports on the LSIs were received in September 2000.

Plum Brook Ordnance Works and U. S. Army Corps of Engineers Move Towards Restoration (Continued)

Community Relations Plan

The Community Relations Plan (CRP) outlines procedures to involve the community with the site restoration process at PBOW. The objective of the CRP is to provide a mechanism for communication and exchange of information between the interested parties, including military and government agencies as well as the general public. International Consultants, Inc., the Administrative Support Contractor to the Restoration Advisory Board (RAB), developed the Plum Brook Ordnance Works Community Relations Plan (CRP), which was submitted in August 1999. The CRP was distributed to the RAB at the December 1999 meeting for review.



Restoration Advisory Board members, USACE personnel, and regulatory agencies meeting to discuss recent activities and plans at PBOW

As part of the CRP, USACE Huntington has established a website dedicated to keeping the public informed about the PBOW activities. The website is located at the following address:

<http://www.lrh.usace.army.mil/pm/pbow>

USACE is interested in hearing from community members who may have knowledge of activities at PBOW, which may include personal experience, photographs or newspaper articles that may provide additional insight into historical activities at the site. The public is invited to contact Ms. Lisa Humphreys or Mr. Frank Albert at the Huntington District with any information. The Huntington District PBOW Hotline is 1-800-822-8413.

*The PBOW information hotline is
1-800-822-8413*

Restoration Advisory Board

The Restoration Advisory Board (RAB) is intended to serve as a forum for the early and continued exchange of restoration related information between regulatory agencies, USACE, NASA, and the local community. RAB members are involved with several aspects concerning PBOW activities: review of documents related to environmental restoration activities, advise various agencies concerning project priorities, work with local and regional land planning agencies involving future land use issues, and act on behalf of community interests.

Most recently, RAB members were invited to participate in an ecological walk-through of PBOW. Mr. John

Blakeman, RAB member, retired teacher and expert on grasses that are native to the PBOW environment, represented the RAB at the walk-through. Captain John Osborn of USACE Huntington District and Mr. Mark Weisberg of IT Corporation coordinated walk-through activities.



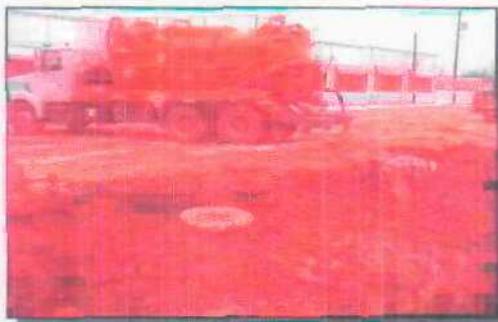
Pictured from left to right: Captain John Osborn (USACE), Mark Weisberg (IT Corporation), and John Blakeman (RAB member)

PBOW Point of Contact

Questions regarding PBOW activities may be directed to Mr. Richard Meadows, USACE Huntington District, telephone (304) 529-5388. Mr. Meadows can also be contacted by email at rickme@lrh.usace.army.mil.

Underground Storage Tank Removed from County Fairgrounds

In May of 1999, The Corps of Engineers conducted underground storage tank (UST) investigations in the former maintenance area within the West Virginia Ordnance Works (WVOW), located near Pt. Pleasant, WV. The investigation confirmed the existence of one 12,000-gallon UST southeast of the former Maintenance Shop, identified as Building 717. UST investigations conducted at the former Gasoline Station, identified as Building 724P, were inconclusive. The UST site is located off County Route 12 (Wadsworth Road), at the Mason County Fairgrounds. This is the location of the former locomotive repair shop utilized by the Department of Defense (DOD) from 1942 - 1945. The repair shop building no longer exists.



Tank fluids being removed by "vac" truck

Between January 31, 2000, and February 4, 2000, WasteTron, Inc., the Huntington District's contractor, removed the 12,000-gallon steel UST and 25 feet of associated piping. During initial uncovering of



UST removed from excavation

the UST, an undetermined amount of the tank's liquid contents leaked from a hole near the top of the tank. The West Virginia Division of Environmental Protection (WVDEP) issued a *Confirmed Release Notice to Comply* to the Corps on February 4, 2000, which required submittal of an Initial Site Characterization Report and a Corrective Action Plan.

Soil was excavated from the UST pit and the fuel line trenches and placed on 6-mil plastic sheeting. Representative soil samples were collected and forwarded to a laboratory for analysis. The pit and trenches were lined with additional plastic sheeting, and backfilled with the excavated soil and additional clean fill material. All analysis results, except those from one fuel line trench, were within allowable state regulatory limits for petroleum contaminants.

The Huntington District performed a field investigation March 6, 2000, to gather information for the Initial Site Characterization Report. No evidence of environmental damage due to a release from the UST site was observed during this investigation. That report was submitted to the WVDEP on March 15, 2000, with no comments received.

In accordance with the Corrective Action Plan that the Corps prepared, WasteTron removed the petroleum-contaminated soil from the UST site on May 25, 2000. This action was taken because the site is a public use area, and restoration was desired prior to the Mason County fair, which is conducted each year in mid August.

Petroleum-contaminated soil was excavated and placed on

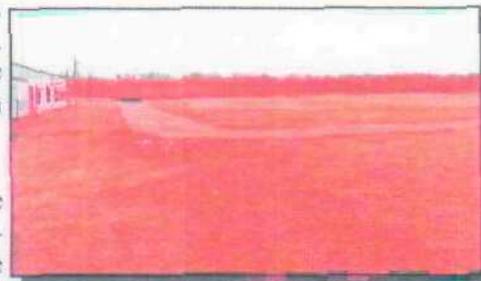
plastic sheeting until it was disposed later that day. Soil samples were analyzed to confirm that no contaminated soil remained on site.



UST ready for transport for off-site disposal

An estimated 31 tons (20 cubic yards) of petroleum-contaminated soil was removed and disposed off-site at a licensed landfill. The excavated area was backfilled with clean, compacted soil, graded to match the existing ground surface, and seeded and mulched.

A Closure Report, documenting soil removal corrective actions, was submitted to the WVDEP on August 8, 2000. A Notice of No Further Action was provided by the WVDEP on August 14, 2000.

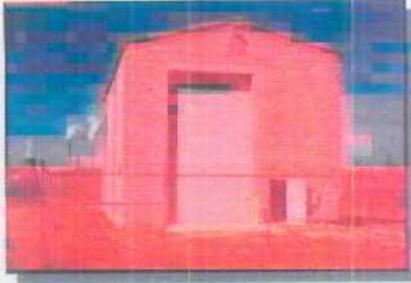


Site restored after UST removal

Additional information on current WVOW activities can be obtained by contacting Richard Meadows, Project Manager, in the Huntington District Corps office. Phone 304/ 529-5388.

Groundwater Pump and Treat System Upgraded

Production of trinitrotoluene (TNT) at the West Virginia Ordnance Works (WVOW) led to the contamination of soil and water in the area. Operable Unit 4 (OU-4) was designed to treat groundwater contamination at the former Red Water Reservoir, Yellow Water Reservoir, and Pond 13 areas. Previous investigations revealed that groundwater in these areas is contaminated with TNT compounds at levels that require cleanup for protection of human health and the environment. In the Record of Decision (ROD), signed in 1988, the Army agreed to design and construct a groundwater extraction and treatment system and to operate the system until groundwater meets cleanup levels established by the En-

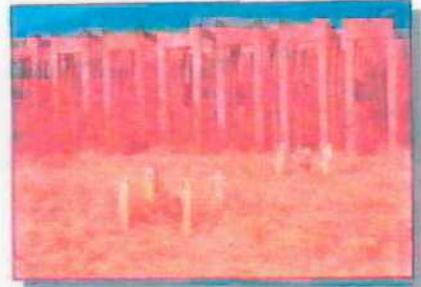


Groundwater treatment building

vironmental Protection Agency (EPA) and the West Virginia Division of Environmental Protection (WVDEP).

Construction of the groundwater extraction and treatment system began in the summer of 1995 and was completed in February 1997. Two plants were built, one near the Red Water Reservoir and one near the Yellow Water Reservoir to treat groundwater from that area and the Pond 13 area. The two plants operated from February 6, 1997 until July 31, 1997, when the WVDEP determined that the water being discharged into Mill Run Creek was not being adequately treated for lead and zinc. Since then, the Army, DEP, and EPA have worked together to find an acceptable solu-

tion to treat the groundwater without contaminating the creek. It was determined that extracted water would be treated, then discharged into existing wetlands for additional treatment.



Groundwater extraction wells

WasteTron, Inc., an Army contractor, has upgraded the treatment facilities to prepare them for operation. A 12-week pilot test started at the Red Water plant on September 5th, 2000 to determine if the wetlands discharge technique is providing adequate treatment. A similar pilot test is scheduled to begin at the Yellow Water plant in October, 2000.

Asbestos Removed and Covered with Protective Cap

During a 1994 site walkover by personnel from Region 3 U.S. Environmental Protection Agency, the West Virginia Division of Environmental Protection (WVDEP), and the U.S. Army Corps of Engineers, friable asbestos, mixed with automotive parts and household waste debris, was discovered. The area was approximately one-half acre in size, and was located on the McClintic Wildlife Management Area property. The area is within the southernmost part of the former West Virginia Ordnance Works, south of the former TNT Manufacturing Area.

During the fall of 1995, an Expanded Site Investigation was performed and soil and debris samples were analyzed for volatile organics, semi-volatile organics, metals, pesticides/PCB's, explosives, and asbestos. Surface water samples were also taken from the creek at the northern site boundary. Sample results indicated trace amounts of metals were present in all soil samples; no explosives were detected. Asbestos was detected in weathered product and shingle samples, and in the underlying soils.

A human health risk assessment was prepared for site contaminants which determined no risk to human health was present. Asbestos removal was required due to public access (hunting, hiking, etc.) in the area. From September 22nd to September 30th, 1999, the Corps' contrac-

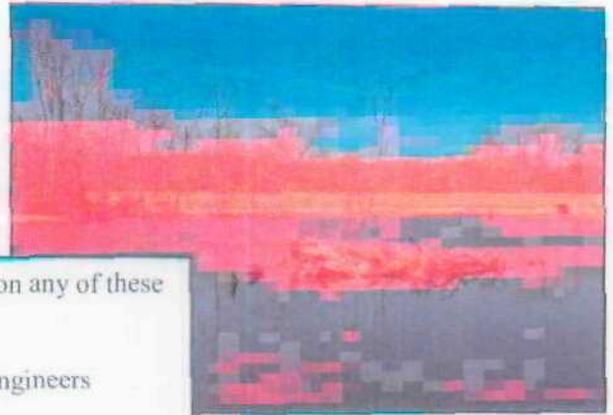
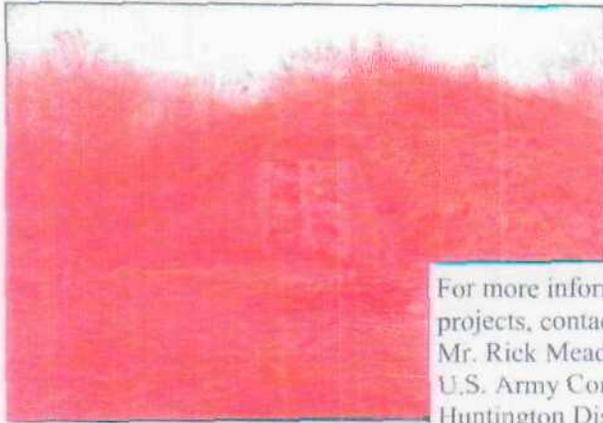
tor, Chippewa Hazardous Waste, Inc., removed 51 cubic yards of friable asbestos mixed with waste from the ground surface and placed a 3-foot thick protective soil cover over the remaining asbestos materials that had been dumped on the slope at the site. All work was performed in accordance with the Corps' plan that had been approved by the WVDEP. Other work in support of this action involved placement of a silt fence and hay bales for



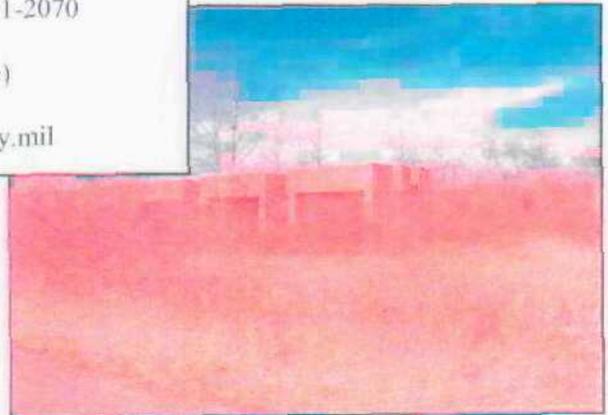
View of reclaimed area

erosion control, a site walkover to remove miscellaneous asbestos siding and shingles, and clearing trees and brush for soil cover placement. The soil cover was seeded and asbestos warning signs were placed around the site. The Huntington District inspects the soil cover quarterly and maintains its condition.

A site restoration report was submitted to the WVDEP in October 1999. The only comment received was to incorporate the soil cover boundary on the property's deed, which was completed in September 2000.



For more information on any of these projects, contact:
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