

MARYLAND DEPARTMENT OF THE ENVIRONMENT

WASTE MANAGEMENT ADMINISTRATION



ENVIRONMENTAL RESTORATION
AND REDEVELOPMENT PROGRAM

ACTIVITY REPORT

JULY 2001

Director's Message

As Director of the Waste Management Administration for the Maryland Department of the Environment, I am proud to present the achievements of the Environmental Restoration & Redevelopment Program (ERRP) over the past year.

As the program's name suggests, the focus of the ERRP is on the cleanup and redevelopment of contaminated properties. This past year, through the efforts of our dedicated staff, numerous site cleanups were completed and areas of the state that were once left fallow and underutilized will now provide opportunities for business development and job creation. Our accomplishments this past year have included:



Rick Collins

Director
Waste Management Administration

- Finalizing our Soil and Groundwater Cleanup Standards Guidance Document
- Completion of more than 39 cleanups to date under the Voluntary Cleanup Program
- Supporting the growth of thousands of new jobs at Brownfield sites that have been remediated and redeveloped
- Receiving a \$1,000,000 Brownfields Revolving Loan Grant from EPA to support cleanup activities for Baltimore and Prince George's Counties
- Receiving the first installment of \$400,000 in a seven year grant program from EPA to conduct Targeted Brownfield Assessments in Baltimore City

Through our standardized approaches to investigating and cleaning up sites, the limitation in liability that is afforded from the Voluntary Cleanup Program, and our customer first approach to addressing site issues, the ERRP is helping communities return Brownfields back to productive uses.

I invite you to learn more about the many and varied successes of the ERRP. The sites and activities featured in this report represent activities conducted by staff—from the cleanup and reuse of Department of Defense sites to the investigation of State Superfund sites.

We thank you for your support of our program and look forward to finding creative solutions to environmental pollution problems throughout the state of Maryland.

A handwritten signature in black ink that reads "Rick Collins".



TABLE OF CONTENTS

INTRODUCTION	1
ERRP	1
FEDERAL FACILITIES DIVISION	4
FEDERAL FACILITIES SECTION	4
NATIONAL PRIORITIES LIST SECTION.....	11
VOLUNTARY CLEANUP DIVISION.....	14
STATE SUPERFUND DIVISION	22
BALTIMORE CITY BROWNFIELDS INITIATIVE.....	22
STATEWIDE BROWNFIELDS ASSESSMENTS	24
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES.....	28
STATE SUPERFUND POTENTIALLY RESPONSIBLE PARTY SITES.....	29
STATE SUPERFUND (FUND LEAD) SITES.....	31
APPENDIX I - Maryland's Federal Facilities Currently Under Investigation	
APPENDIX II - Voluntary Cleanup Program Statistics	
APPENDIX III - State Superfund Division Site Lists	



ENVIRONMENTAL RESTORATION AND REDEVELOPMENT PROGRAM (ERRP)

INTRODUCTION

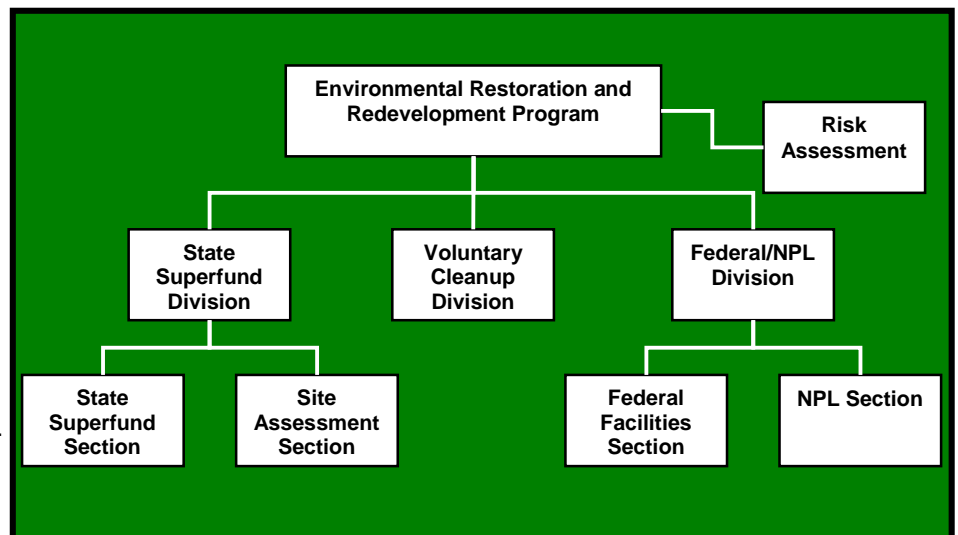
The Environmental Restoration and Redevelopment Program (ERRP) of the Maryland Department of the Environment (MDE) is responsible for managing the investigation and cleanup of uncontrolled hazardous substance releases at sites throughout the State of Maryland. The program seeks to eliminate threats to public health from exposure to soils, groundwater, and surface waters contaminated by controlled hazardous substances.

Maryland's rich industrial history has resulted in a significant number of properties where investigation and cleanup of contamination are necessary to ensure public health and the environment are protected. Cleanup of these properties also has secondary positive impacts, including supporting Governor Parris Glendening's Smart Growth Initiative by revitalizing formerly used properties, removing blighted properties from community landscapes, increasing the tax base, and, in some cases, supporting economic development efforts.

ERRP

The ERRP implements "Superfund" Programs. Superfund is the common term for programs that investigate and cleanup abandoned or uncontrolled hazardous waste sites to protect public health and the environment. The term Superfund originated with the Federal Superfund program established in 1980 and amended in 1986. Many states, including Maryland, enacted similar State programs. These programs strive to cleanup private and publicly owned sites containing hazardous substances.

In 1997, Maryland joined many other states by creating a Voluntary Cleanup Program which, in part, addresses Brownfields – vacant and underutilized industrial and commercial properties – where environmental cleanup is perceived to be an obstacle to redevelopment. All of these programs support the State of Maryland's Smart Growth Program by cleaning up properties for redevelopment in areas where infrastructure already exists.



The ERRP is comprised of three Divisions that oversee and conduct investigations and cleanups at controlled hazardous substance release sites. The **State Superfund Division** oversees cleanups of historically

contaminated hazardous substances at sites that are not on the United States Environmental Protection Agency's (EPA) National Priorities List (NPL), and also conducts cost recovery of State funded activities from parties considered responsible for the contamination. Oversight of environmental remediation at sites throughout Maryland is provided with primary emphasis on the State Master List, a list of sites known or reported to be contaminated by controlled hazardous substances. Currently, this part of the Program oversees investigation or cleanup at 19 sites.

SITES CURRENTLY UNDER INVESTIGATION BY THE STATE SUPERFUND PROGRAM	
SITE	COUNTY
Koppers CSX Hagerstown	Washington
Chevron—Salisbury	Wicomico
Cutronics	Baltimore
Atotech	Baltimore City
AK Steel	Baltimore City
Vectrol	Montgomery
Cambridge Town Gas	Dorchester
Centerville Fertilization Plant	Queen Annes
Old Fort Road	Prince George's
Thurmont	Frederick
Contee Sand & Gravel	Prince George's
Skipjack	Caroline
Iron Hill Road	Cecil
A.J. Pearmon	Anne Arundel
Blue Chip	Cecil
Dwyer	Cecil
Montgomery Brothers	Cecil
Smuck Dump	Baltimore
Sauer Dump	Baltimore

The State Superfund Division also oversees the investigation and remediation of sites where a viable responsible person does not exist to pay for site assessment activities. State capital funds referred to as "PAYGO" – pay as you go – are used by this Division to remediate these "orphan" sites.

The Site Assessment Section of the State Superfund Division is responsible for conducting federally-funded assessments of eligible Brownfields properties. These assessments are undertaken to determine whether there are environmental cleanup requirements at these sites. Brownfields are abandoned or under-utilized industrial or commercial properties where real or perceived environmental contamination hinders redevelopment. In addition to the Brownfield Assessments, the Division also prepares Site Surveys, Preliminary Assessments and Site Investigation reports for EPA Region III under a Superfund Pre-Remedial Cooperative Agreement.

The **Federal Facilities/NPL Superfund Division** oversees the investigation and remediation of sites that are either listed on the NPL, or sites where the Department of Defense (DOD) is a responsible party to the contamination at sites. The Division is configured into two sections. The Federal Facilities Section participates with the EPA and DOD in the decision-making in all phases of environmental investigations and oversight of cleanups of hazardous waste at the DOD sites. The Federal Facilities Section places emphasis on Base Realignment and Closure sites and other military facilities scheduled to close to facilitate reuse of these properties. Through partnering efforts with these facilities and the EPA, the Section is able to expedite assessment, evaluation and, where necessary, remediation of environmental conditions at these sites. See Appendix I for a listing of Maryland's Federal facilities currently under investigation.

The NPL Superfund Section oversees, with the EPA Region III, the remedial activities at NPL sites not owned by the federal government. At these sites, where a responsible party to the contamination at a site conducts both the investigation and remediation, MDE's role is to work with EPA at all phases of environmental investigation and cleanup to ensure that State environmental laws and regulations are being met. If no viable responsible party is available to address the contamination at a site, then the EPA, with the support of the MDE, conducts the required environmental studies and remedial requirements. At these orphan sites, the EPA pays for 90% of the investigation and cleanup costs and the MDE pays 10% of the costs. The NPL Section currently is overseeing work at five NPL sites.

The **Voluntary Cleanup/Brownfields Division** encourages the voluntary cleanup and redevelopment of contaminated properties through a streamlined regulatory process. The program, which was established in 1997 with the enactment of Voluntary Cleanup Program Act, Title 7, Subtitle 5 of the Environmental Article, Annotated Code of Maryland enables eligible purchasers of property to substantially limit liability for past contamination prior to purchase of the property by following a defined process of investigation and if necessary site cleanup. The Voluntary Cleanup Program (VCP) works closely with the Brownfields Revitalization Incentive Program, administered by the Maryland Department of Business and Economic Development, to provide financial incentives in the form of tax credits, grants and loans for redevelopment of eligible brownfields properties. See Appendix II for Voluntary Cleanup Program property statistics.



FEDERAL FACILITIES/NPL SUPERFUND DIVISION

Federal Facilities Section

This Section provides oversight and support to Department of Defense (DOD) efforts to mitigate, control or remove contamination at their facilities that pose a potential threat to human health or the environment. The Maryland Department of the Environment (MDE) has a Memorandum of Agreement with the DOD, commonly referred to as the DSMOA, that governs and supports the MDE's role in the remedial actions performed at the various military service facilities in the State. Currently, the MDE has DOD's approval to provide oversight and support at 13 Army facilities, 20 Navy facilities, 2 Air Force facilities, 1 Defense Logistics Agency facility and 20 Formerly Used Defense Sites (FUDS).

Seven DOD facilities in the State have been placed on the U.S. Environmental Protection Agency's (EPA) National Priorities List (NPL). These DOD NPL sites are:

- 1) Aberdeen Proving Ground (Aberdeen Area)
- 2) Aberdeen Proving Ground (Edgewood Area)
- 3) Naval Air Station, Patuxent River
- 4) Naval Surface Warfare Center (NSWC), Indian Head
- 5) Ft. George G. Meade
- 6) Andrews Air Force Base
- 7) Brandywine Defense Reutilization and Marketing Office

The NPL is a list of sites that the EPA considers, on a national basis, to be so contaminated that they pose a significant potential risk to human health and the environment.

Significant actions, which were taken at Maryland's DOD facilities during FY 2001 include:

Naval Air Station, Patuxent River, St. Mary's County– A soil cover and shoreline stabilization was completed at the Fishing Point Landfill. This Record of Decision (ROD) was signed in February, 2000 and covers an area of approximately 65 acres of shoreline at the mouth of the Patuxent River. When the site is fully stabilized with vegetation the Navy plans to use the restored area for recreational activities.

Naval Surface Warfare Center (NSWC), Indian Head, Prince George's County – The facility signed its first and second ROD during FY 2001. One decision addresses a former landfill known as Town Gut while the other address the remediation of contaminated soil at a former scrap yard. The Navy, EPA and the State have developed an effective partnership at the facility which is rapidly moving to assess other portions of the facility and take necessary removal or remedial actions or assessments.

Andrews Air Force Base, Prince George's County – As a result of active partnering with EPA and the Air Force, the facility was able to obtain significant increase in funding for FY 2001. Currently, two areas of the facility have been assigned a high priority. The Brandywine Defense Reutilization and Marketing Office (DRMO) and the LeRoy's Lane Landfill are both areas where offsite migration of contamination requires expanded investigation and cleanup. While the Air Force executed a removal action to address groundwater at the Brandywine site, the effectiveness of this response has not been fully demonstrated.

Fort Ritchie, Washington County – Work on all of the non-Unexplored Ordinance (UXO) contaminated areas was completed and a Finding of Suitability to Transfer document was finalized in 2001. Currently, approximately one half of the facility is available for tenant leases through the reuse authority. The former Fort Ritchie property now has three tenants, one of which is Role Models America, which is a school that provides a second chance for high school dropouts. Work on the UXO removal action areas began in June, 2001 and is expected to be complete during FY 2004. The first stages of the removal will focus on those portions of the facility nearest to the former cantonment area of Fort Ritchie.

Fort Detrick, Frederick County – A Decision Document (DD) for all of Fort Detrick's Area A sites was completed in 2001. The completion of the DD for Area A closes the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) investigation of the Installation Restoration Program sites identified by the Army on Area A. The Army, EPA and the MDE have formed an environmental partnership to expedite the privatization of Fort Detrick's Waste Water Treatment facility, which is referred to as Area C. Work on Area B is also continuing. The partnering team is screening sites and the adequacy of the existing investigations all of the Area B sites. The Army is currently conducting a Remedial Action to remove buried chemical waste at Fort Detrick's Area B (Site B-11). Once the waste pits have been accurately delineated, the Army's contractor will freeze the soil around and beneath the waste prior to excavation. Excavation will be performed initially at Pit 1 and the process will be done completely within an enclosed structure.

(Continued on page 6)

White Oak redevelopment project finishes landfill cleanup

By Jeff Thornburg

Maryland has long been an advocate of Smart Growth and redevelopment within urban and suburban areas. The efforts of the state to effectively control growth and preserve rural environments have been recognized as a national model for progressive development. However, few people are aware that the federal government has also recognized the benefits of smart growth strategies. The Base Realignment and Closure (BRAC) program was established as a means to close excess military installations and facilitate reuse of the formerly used defense parcels. The program bears a resemblance to Maryland's Smart Growth polices in many ways. Redevelopment is paramount to the success of the initiative. This program has been particularly successful inside the Capital Beltway.

The closing of the Naval Surface Warfare Center (NSWC WO) has afforded the General Services Administration ample property within the congested Washington D.C. corridor to accommodate the growing needs of many federal agencies headquartered in the district. The Food and Drug Administration has acquired congressional funding to consolidate all its research and development offices within the former Navy property. A \$650 million state-of-the-art office and lab compound will be erected over the next seven years. The Maryland Department of the Environment's (MDE) efforts to assist with the expeditious environmental restoration of the base in order to allow the Food and Drug Administration to commence relocation proceedings have been pivotal to the success of the project.

Located in Silver Spring, Maryland, the former NSWC WO operated as a principle weapons research and development laboratory from the mid 1940s through 1997, when naval operations ceased. The former facility encompasses approximately 800 acres of land within a mixed residential-commercial setting. Impacts to environmental media at



Old Site 3 Landfill before remediation.

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White Oak are attributed to poor on-site contaminant disposal practices throughout the operational years of the facility. Investigations and assessments have been ongoing since the Comprehensive Environmental Response, Compensation and Liability Act was passed in 1980. Clean-up response initiatives and redevelopment prioritization escalated when the facility was selected for closure under the 1995 BRAC round.

Past environmental assessments have identified several areas that likely require remedial action. One of these areas is the 'Pistol Range Landfill.'

Deriving its name from a small arms range, the Site 3 landfill was an unlined one-acre disposal area that received mixed wastes from the late 1940s to the mid 1970s. The wedge shaped landfill was formed into a plateau at its peak, with steep slopes abutting abruptly at the terminal ends of the fill adjacent to an unnamed tributary to the Paint Branch Creek.

The Pistol Range Landfill was identified in an initial assessment study, and studied in subsequent investigations through 1999. Conclusions recognized that organic compounds from the landfill were impacting groundwater and surface water, and potential adverse impacts to human health and the environment were present.

Prior to the summer of 2000, the Navy had evaluated several remedial solutions including capping, consolidation and capping, and off-site transport and disposal. The passing of Hurricane Floyd in 1999 caused significant erosion at the base of the landfill, resulting in an unstable slope, and the potential for a substantial release to the environment. The Navy, in conjunction with the regulatory community, implemented a time-critical removal action to mitigate further impacts to surface water bodies.



View of the old Site 3 landfill after its cleanup at the former Naval Surface Warfare Center-White Oak near Silver Spring.

The U.S. Environmental Protection Agency (EPA) and MDE's Federal Facilities Section have overseen the investigations and the selection of a remedy for the Pistol Range Landfill. The Department of Defense's Partnering initiative has been paramount to the success of the project. Through the Partnering process, MDE and EPA have maintained open avenues of communication with the Navy. A product of this continuing cooperation was the ability to quickly determine the appropriate remedy for the site while upholding the highest level of protection to public health and the surrounding ecology.

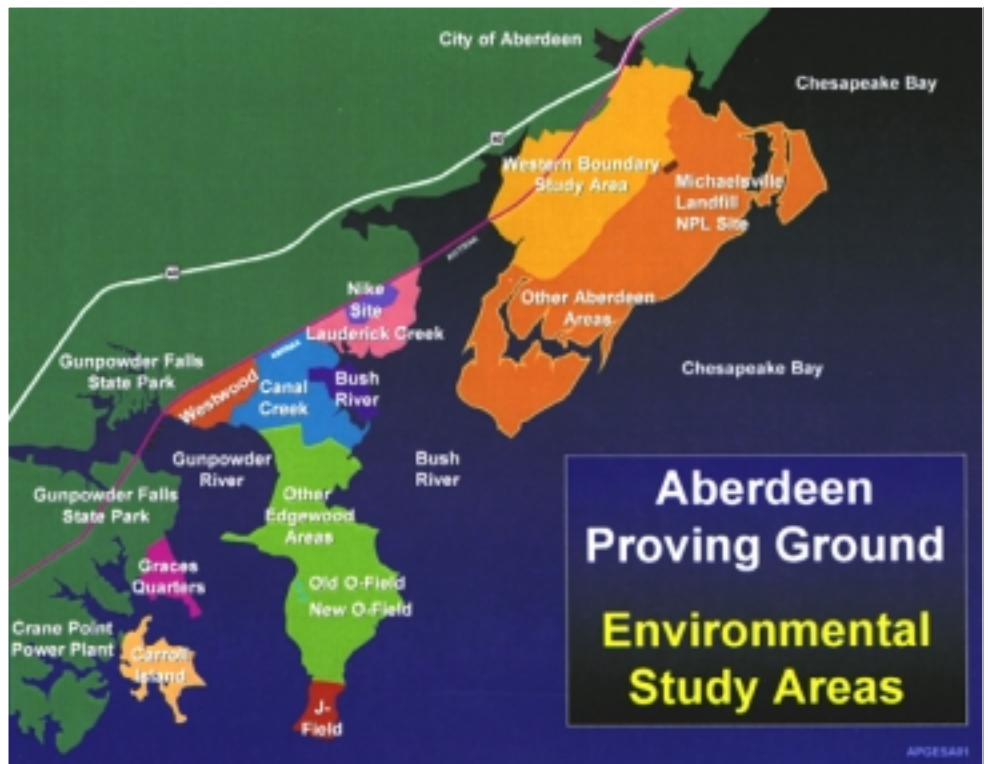
The removal action is now complete, and the total volume of waste present in the landfill was roughly double initial estimates. A total of 40,000 cubic yards of contaminated soil was removed from the landfill. It is now known that the landfill was a continuing source of groundwater contamination. The removal has resulted in decreasing concentrations of contaminants in downgradient monitoring wells. ■

Aberdeen Proving Ground, Harford / Baltimore County – The Aberdeen Proving Ground is divided into two large areas – APG – Edgewood Area and APG Aberdeen Area. The Edgewood Area of Aberdeen Proving Ground (Edgewood Area) includes the Gunpowder Neck in Harford County, Graces Quarters and Carroll Island in Baltimore County and the surrounding water bottoms. The Edgewood Area is situated adjacent to the towns of Edgewood and

(Continued on page 7)

Joppatowne. There are currently nine major study areas in the Edgewood Area: Westwood, Lauderick Creek, Bush River, Canal Creek, O-Field, J-Field, Other Edgewood Areas, Graces Quarters, and Carroll Island.

The entire Edgewood Area is approximately 13,000 land acres. The boundaries of the area include Bush River to the east, Seneca Creek to the west of Graces Quarters and Carroll Island, Chesapeake Bay to the south, the AMTRAK Railroad Lines to the north of the Gunpowder Neck peninsula and Gunpowder Falls State Park to the north of Graces Quarters. The Gunpowder Neck Area is separated from Graces Quarters. The Gunpowder Neck Area is



(Continued on page 9)

Naval Surface Warfare Center (NSWC) Carderock Division – Annapolis Detachment

By Curtis DeTore

An ecologic and economic windfall for Anne Arundel County has presented itself in a property transfer from the Navy. The Navy has agreed to transfer a picturesque stretch of Severn River property as well as a 24-acre parcel near Sandy Point State Park that together comprised the former Naval Surface Warfare Center Carderock Division – Annapolis Detachment (NSWC Annapolis) to Anne Arundel County. This transfer will not only allow Anne Arundel County to preserve a section of Severn River shoreline, but it will also bring approximately 2000 much needed jobs and several million dollars of tax revenue to the County.

NSWC Annapolis was designated for closure by Base Realignment and Closure (BRAC) legislation in 1995. The closed facility is comprised of two portions: the Annapolis portion, located across the Severn River from the Naval Academy, and the Bay Head Road Annex, located just north of Route 50 near Sandy Point State Park. The Navy terminated its operations at both sites in 1998.

The Navy established the Annapolis portion in 1903 on land sandwiched between the Severn River and the Annapolis Naval Station. The site rapidly expanded after 1908; construction activities included increasing the land area by filling some of the shorefront with sediments from the Severn River. The name of the facility changed several times during its operation: Naval Engineering Experiment Station, Marine Engineering Laboratory, Naval Ship Research and Development Center, David Taylor Research Center and finally the Naval Surface Warfare Center Carderock Division – Annapolis Detachment.

The primary historical functions at NSWC Annapolis were research and development of machinery, alloys, fuels, lubricants, coatings, paints, and fire suppression materials to improve the operation and performance of Naval vessels,

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machinery and equipment. The 44-acre Annapolis portion is a developed property that includes 78 buildings, several paved areas and two basins that open to the Severn River. Some office space at the facility is currently leased to Anne Arundel County.

The 24-acre Bay Head Road Annex was used by the Army as the Launch Area for Nike Battery W-26 from 1954 to 1969. Maintenance activities by the Army during that 16-year period required the storage and management of missile components and propellants as well as solvents, lubricants and other necessary materials. After Nike battery deactivation, the site was used by the Navy to conduct burn tests to determine heat resistant properties of material for use on Navy ships. Materials were burned in an enclosed test burn facility and analyzed for off-gas production and fire hazard potential. Several structures

remain on site, including three former missile launching pads, fueling, generator, assembly, storage area, and wastewater disposal areas. In addition, recreational areas are already on site, including two ball fields, a picnic pavilion, and a restroom/locker room located on the southern portion of the site.

Shortly after the sites were designated for base closure, the Maryland Department of the Environment (MDE), the U.S. Environmental Protection Agency (EPA) and the Navy formed a BRAC Cleanup Team (BCT) to evaluate the environmental issues at both properties. The MDE successfully worked with the BCT to ensure that the environmental conditions at both properties were adequately evaluated in preparation for transfer to Anne Arundel County. The risk assessment conducted by the Navy concluded that the properties would be acceptable for the purposes that the county has planned. The Annapolis property will be redeveloped as a commercial property and the Bay Head Road property will be used as a recreational park. The transfer will include restrictions from

residential use and shallow groundwater use at the properties.

In 1998, Anne Arundel County signed a lease with the Navy to use some of the existing office space located on the Annapolis portion. It was at this time that the County expressed an interest in obtaining the entire property from the Navy. After some discussion, the Navy agreed to transfer the property to Anne Arundel County after all environmental work was completed.

In light of this decision, the County selected Annapolis Partners, LLC (a joint venture that includes Mesirow Stein Real Estate & TeleCommunication Systems, Inc.) to redevelop the 42-acre Annapolis portion. The developers envision a "high tech" office park to be built on the former Navy land. The proposed redevelopment plan includes the retention and redevelopment of several historic

buildings on site, the redevelopment of the Deep Ocean Pressure Research Vessel and Laboratories, the establishment of the U.S. Naval Academy Net-Centric Warfare Training Center and the construction of the David Taylor Inn. Anna-



View of Naval Surface Warfare Center from the Severn River.

polis Partners, LLC are currently planning to replace and upgrade the existing infrastructure (roads and parking facilities, water and sewer lines, power grid, and telecommunication lines) at a cost of around \$18.4 million dollars. In addition, the renovation of historic buildings and the construction of 730,000 square feet of new buildings at this site would total approximately another \$250 million dollars under the current redevelopment plan.

This proposed redevelopment would create approximately 1360 new jobs as well as retain 600 jobs that would have been lost due to the closing of the Annapolis portion of the Carderock Division. The tax benefit to Anne Arundel County for the redevelopment will increase over the next 10 years to approximately \$3.5 million dollars a year. ■

Treatment plant approved for Perryman Wellfield - Aberdeen Proving Ground

By Karl Kalbacher

On July 17, 2000, the Army signed a Record of Decision to construct a carbon filtration system at the Harford County water treatment plant for the entire Perryman Wellfield. The Army's decision reversed a previous plan to only provide a treatment plant for wells that are currently contaminated from the Aberdeen Proving Ground. With this final decision Harford County residents will receive clean potable water from the Perryman Wellfield for the foreseeable future.

The Perryman Wellfield, which currently has eight operational wells, provides a significant portion of the potable water supply for Harford County. All of the Perryman wells are located near the Aberdeen Area of Aberdeen Proving Ground (APG); four of the eight wells are located on the federal facility.

Site History

In 1991, two of the Perryman wells on the APG were found to be impacted by Trichloroethene above the EPA-established Maximum Contaminant Level (MCL) of 5 ug/L. Subsequent sampling also revealed trace levels of explosive compounds.

The Army responded to the contamination by constructing a Granular Activated Carbon treatment unit to remove these contaminants. The Removal Action was operational in 1992 and continues to treat the contaminated groundwater before it enters Harford County's main treatment system. This treatment unit has the ability to treat the four on-post wells of the Perryman system. To date, the other two on-post wells have not been impacted by the groundwater contamination plume.

Groundwater modeling indicated that the contaminant plume was migrating toward the Perryman wellfield. Consequently, contamination may impact more of the Perryman wells in the future. The model predicts that the nearest of these wells may be impacted by the plume in the next few years.

In 1999, the Army issued a CERCLA Proposed Plan to build a larger carbon treatment unit at Harford County's water treatment facility. This unit would have the capacity to treat water from all eight of the Perryman wells. The Army would pay for the capital costs of construction and have oversight of plant construction. Harford County would then operate the treatment plant.

In April, 2000, APG withdrew its 1999 Proposal and instead proposed a contingency plan for the off-post wells, which would include monitoring a contingency for treating any wells that are subsequently impacted. The Army's position was that they could not spend federal money to treat wells that are not impacted by the Army's contamination.

Current Status

In response, the community, EPA, MDE and Harford county representatives expressed concern with the revised plan. As the result of the significant level of concern expressed by these parties, the Army elected to return to its original treatment proposal. The design for the plant is under development and the construction will be contracted once the design is complete. ■

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separated from Graces Quarters and Carroll Island by the Gunpowder River.

Aberdeen Proving Ground-Aberdeen Area (APG-AA) is located in Harford County, MD near the head of the Chesapeake Bay. The Aberdeen Area of the installation is located three miles southeast of the city of Aberdeen.

APG-AA consists of approximately 37,000 acres. It is bounded on the west by Bush River, the east by the Susquehanna River, and the south by the Chesapeake Bay. It also includes Spesutie Island and the surrounding waters.

In the Edgewood part of APG, a Record of Decision (ROD) was signed by EPA and the DOD in July, 2000 to upgrade and expand the pretreatment facility at Harford County's water treatment works. These treatment works

serve all of the Perryman wells and is not contiguous to APG. The ROD was ordered by the EPA and DOD in order to address current and future solvent contamination that might enter the Perryman Well System from the APG site. This was a significant remedial action because of the inter-Agency coordination among the Army, Harford County and the MDE and because the Perryman well field will now have a treatment system in place that will allow for the use of the treated water for potable purposes.

The Army and the EPA also signed the Record of Decision for the East Branch Plume of the Canal Creek Aquifer on the Edgewood portion of the facility. The Canal Creek Aquifer was the original source of potable and process water for the Edgewood facility, however, through poor historic waste management practices the aquifer was contaminated with several organic solvents. The Army, EPA and the State agreed that the efforts to mitigate the spread of contamination in the Canal Creek Aquifer should be undertaken and the Army proposed an extraction and treatment system that could potentially provide potable water to the facility. Following a performance evaluation period the MDE will evaluate the acceptability of the treated water for potable purposes.

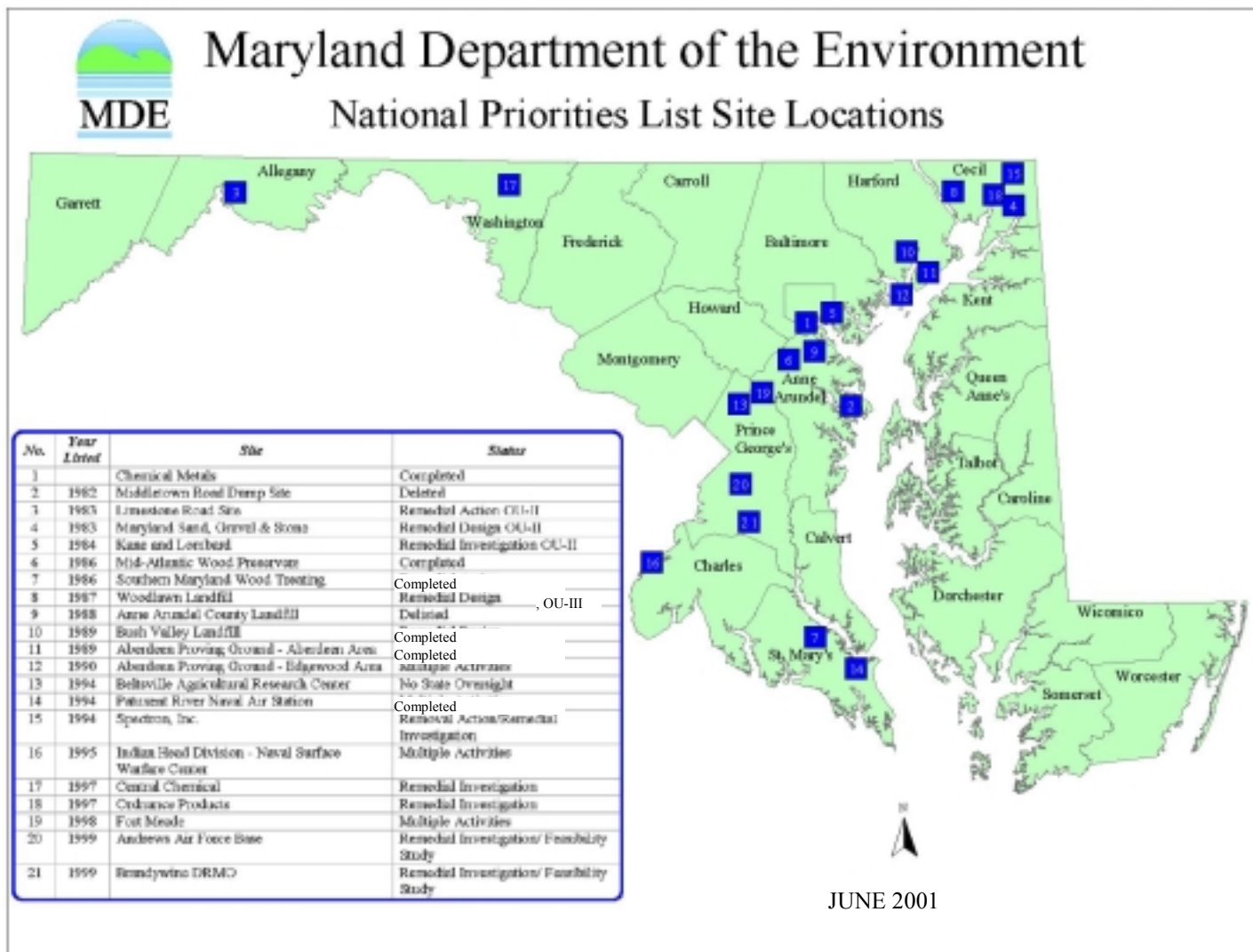
Unexploded Ordnance Removal was also begun during FY 2001 in the Lauderick Creek area in the Edgewood part of APG. This is a major effort by the Army to clear the boundary portion of the facility, that was historically used for Chemical Warfare Training of ordnance items that might pose a risk to offsite areas.

BRAC Program - The Federal Facilities Section supports the Maryland's Smart Growth Initiative by emphasizing support for DOD facilities that have been included in the Base Realignment and Closure (BRAC) Program. Where possible, the Section streamlines the environmental process in order to make former federal facilities available for economic redevelopment as quickly as possible.

A key part of the Section's BRAC activity is focused on developing a formal partnering relationship with responsible military Services and the EPA. BRAC partnerships have been used at Fort George G. Meade, Ft. Ritchie, David Taylor Research Center Bay Head Annex, Naval Surface Warfare Center, Annapolis and Fort Holabird facilities. With the exception of the former range areas at Fort Ritchie all of the BRAC property in Maryland has been transferred to other federal users, local government or the private sector. Work to complete the Ft. Ritchie range clearance is expected during FY 2004.

National Priorities List (“NPL”) Section

The NPL section provides support agency oversight for the restoration of hazardous waste sites that are on the NPL but are not owned by the federal government. The U.S. Environmental Protection Agency is the ‘Lead Agency’ at these sites. Typically, “responsible parties” pay for the remedial investigation and all required cleanup costs at these Non-Federal-agency owned NPL sites. If a viable responsible party does not exist, the EPA’s Superfund Program will fund the remedial investigation. If a remedial action is determined to be necessary, EPA provides 90% of the funding for remedial action, while the State insures payment of the remaining 10% cost.



Woodlawn Site - Remediation of the Woodlawn site, located in Cecil County, was completed in April, 2001. The Woodlawn site was placed on the NPL in 1987. The responsible parties, with EPA and MDE oversight, performed the remedial investigation and remedial response at the Woodlawn site. The Woodlawn site had been an open landfill, covering approximately 21-acres of the 37-acre site, and received both municipal and industrial waste. The response at the site included a soil cover designed to enhance the biological degradation of the remaining waste and continue the stabilization of the contaminated groundwater plume. Groundwater monitoring will be an integral part of continuing monitoring of the Woodlawn response action site. The implemented remedy at the Woodlawn Landfill is consistent with the County’s plans to redevelop and manage the site as a nature preserve. In late December, 2000, a temporary stormwater control pond at the site was breached. The pond captured sediment and surface runoff from the recently installed protective cap which was part of the final CERCLA cleanup at the site. Because the grass cover on the cap had not had time to be fully established, a significant quantity of clean topsoil from the recently installed cap was washed into a nearby trout-

spawning stream after the dam failed. Since trout-spawning streams are extremely sensitive to excess sediment loads, this dam failure represented a potential ecological threat to the local trout population. MDE required the contractor to repair and strengthen the dam, remove sediment from the stream, and install other sediment and erosion control measures to prevent any further damage to the trout-spawning stream habitat. MDE and EPA are now monitoring sediment loads, trout populations, and spawning activity in this impacted stream to determine if further action is needed to restore this habitat.

Southern Maryland Wood Treating (SMWT) Site – The SMWT site is a 25 acre site located in St. Mary's County. SMWT formerly operated as a wood treatment facility between 1965 and 1978. Processed wood was pressure treated with creosote and pentachlorophenol. The treatment waste disposal process resulted in the entire 25 acres becoming contaminated in both the soil and groundwater media from the site related chemicals. The SMWT Corporation dissolved in the 1980s and became financially insolvent. The EPA and State have funded the investigation and the cleanup of the site. The State will use capital funds to meet its 10% share of remediation costs at the SMWT site. The EPA's and the State have paid approximately \$60 million in remedial costs. The remedial action at the site was thermal desorption of contaminated soils. State participation at the site was instrumental in significantly reducing long-term operation and maintenance activities resulting in significant savings to the State and potentially returning the site to a productive or beneficial use. The EPA hosted a completion ceremony at the site on July 10, 2001.

The Bush Valley Landfill Site - The Bush Valley Landfill in Harford County was placed on the NPL in 1989. The landfill, which covered a significant portion of the 29-acre parcel of land, received mixed waste during its years of operation. The County and a group of responsible parties, with EPA and MDE oversight, performed both the remedial investigation and the remedial response at the site. Installation of a multi-layered cover system was completed in late 2000. Stabilization of the final cover, including slope stabilization, is currently underway.

Southern Maryland Wood Treating Site
St. Mary's County



BEFORE: Soil excavation during Winter 2000 in the area of a former waste disposal pit for wood treatment chemicals.



AFTER: Former waste disposal area in Spring 2001 following site remediation.

Cleanup at the Galaxy/Spectron site improves the condition of Little Elk Creek in Elkton

By Margaret Chauncey

The Galaxy/Spectron site is an Environmental Protection Agency (EPA) National Priorities List (NPL) Superfund site. The site is located in the northeast portion of Cecil County on Providence Road. Little Elk Creek runs through the site.

The Galaxy Chemicals, In. (1961-1975) and Spectron, Inc. (1975-1988) both conducted fuel blending and solvent recycling at the site. Over the years, several lagoons and sludge pits were used at the site to dump industrial waste. Operations at the site resulted in contamination of the soil, an on-site stream, and the shallow and bedrock aquifers. Waste products seeped out along the west bank of the stream and deposited in Little Elk Creek. The facility was abandoned in August, 1988.

When Spectron went bankrupt in 1988, approximately 50,000 gallons of flammable liquids were left at the site. The EPA disposed of these wastes through an negotiated an Administrative Order on Consent (AOC) with the potentially responsible parties (PRPs) to clean out flammable sludges from the tanks. In 1991, another AOC was signed that required over 100 PRPs to control seeps of contaminated groundwater along the west bank of Little Elk Creek.

To prevent contaminated groundwater and leachate seeps from entering Little Elk Creek, the PRPs constructed a stream containment system from August, 1998 to April, 1999. The PRPs installed 850 feet of liner in the creek adjacent to the chemical plant. The liner system consists of two low permeability layers. One of the liners is a high-density, chemical-resistant plastic that is 40 millimeters thick and able to withstand all the chemical contaminants in the groundwater. The second layer, made of clay, lies under the plastic liner and provides another layer of protection in case the upper liner is punctured. The liner system is protected by gabions (mats of rocks encased in chain-link fabric).

Contaminated groundwater is captured in French Drains that were installed under the liner. The groundwater then collects in three sumps. The groundwater is pumped out of the sumps and to an on-site water treatment plant. The water treatment plant was completed in March, 2000. The plant treats contaminated groundwater using a Biological/Activated Carbon Treatment Tank. In September, 2000, an Air-Stripper was brought on-line to polish the effluent water. The treated groundwater is discharged into Little Elk Creek.



View of the Little Elk Creek in the vicinity of the Galaxy/Spectron Facility

Residents in the area are pleased with the remedial measure. The air is no longer foul, and the chemical seeps are captured under the stream liner. Children and fish swim in Little Elk Creek. Mallard ducks, Canadian geese and their goslings, cardinals, hawks, a gray heron, dogs, fish and frogs enjoy the clean water of the creek. ■

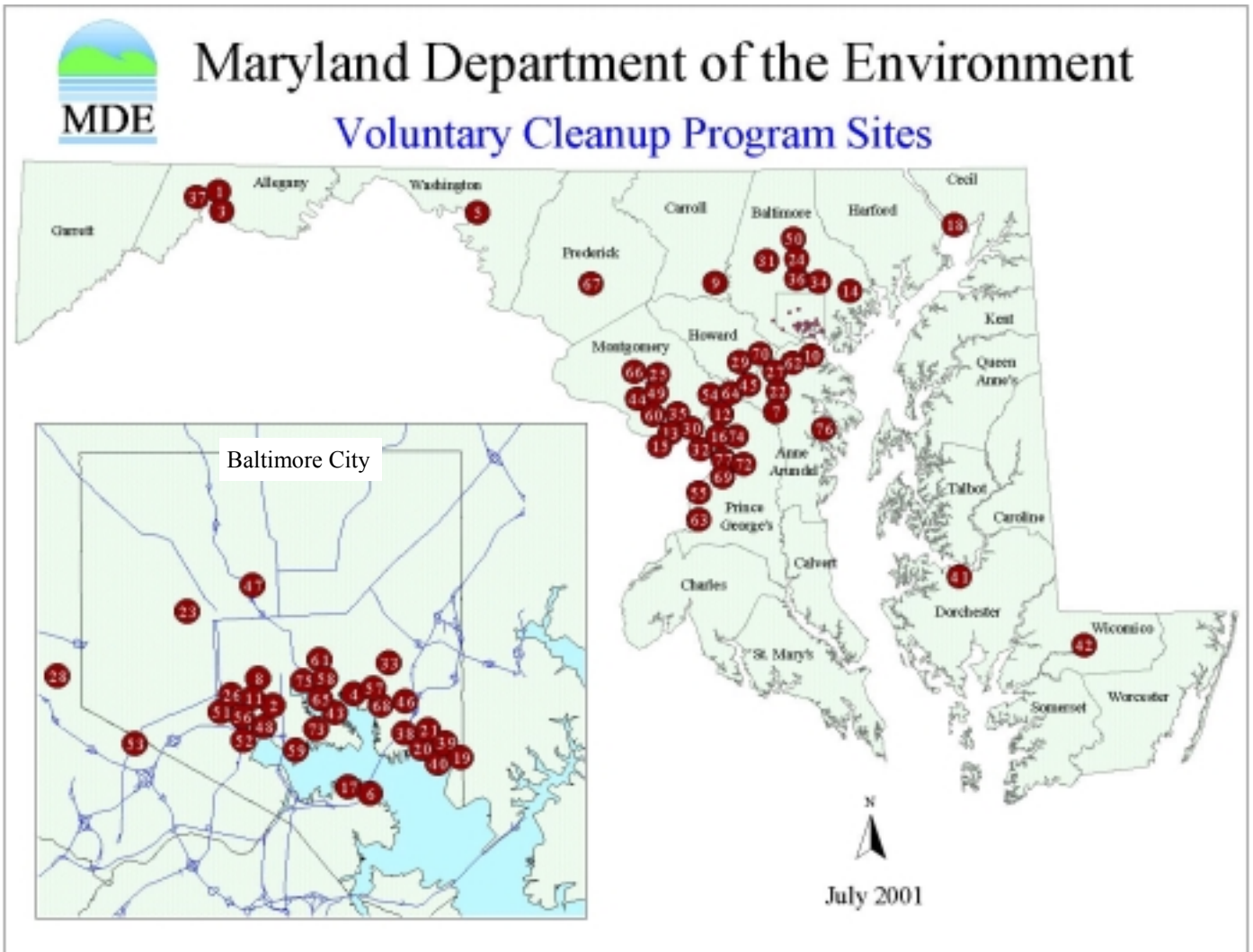


VOLUNTARY CLEANUP PROGRAM

The newest division within the ERRP is also the busiest. The Voluntary Cleanup Program (VCP) promoted by Governor Parris Glendening as one of the corner pieces of his Smart Growth initiative was created in February, 1997 by emergency legislation. Ever since then, the VCP has moved forward from developing guidance documents and application forms to now overseeing VCP site investigations and site cleanups.

With each passing year the VCP continues to make refinements to streamline the process of investigating and cleaning up of property. The most recent completion of the soil and groundwater cleanup standards guidance document in December, 2000 will now provide VCP participants the option of conducting a streamlined risk assessment as opposed to preparing the traditional "Superfund" risk assessment. This document and other actions being undertaken by the VCP, such as clarifying information requests on the application document and encouraging pre-VCP application meetings with potential applicants, are providing the public and private sector with the tools to get the job done right the first time - a cleaned up and redeveloped site!

(Continued on page 15)



List of Voluntary Cleanup Program Sites

(See VCP map above)

No.	Site Name	City	Acres
1	CSX Former Bolt and Forge Site	Cumberland	33
2	Parker Metal Decorating Property	Baltimore	0.73
3	PPG Property	Cumberland	150
4	American Can Company	Baltimore	4.3
5	Engineered Polymer Solutions, Inc.	Williamsport	8.5
6	Port Liberty Industrial Center	Baltimore	23.84
7	G & H Partnership Property	Gambrills	38.25
8	Barre Station (Koppers Site)	Baltimore	8.6
9	Carrolltown Center	Eldersburg	31.78
10	Baymeadow Property	Glen Burnie	11.95
11	Baltimore Camden Yards	Baltimore	5
12	Beltsville Industrial Center	Beltsville	0.8
13	5221 River Road	Bethesda	2.3
14	Redland Genstar- White Marsh Plant	White Marsh	103.9
15	5450 Butler Road	Bethesda	2.78
16	Riverdale Plaza	Riverdale	11
17	Kurt Iron & Metal, Inc.	Baltimore	10.44
18	Occidental Chemical Corporation	Perryville	125.65
19	Point Breeze Business Center (C1,C2,C4)	Baltimore	54.34
20	Point Breeze Business Center (D2)	Baltimore	15.69
21	Point Breeze Business Center (D1,D5)	Baltimore	14
22	The Hardaway Company	Odenton	9.2
23	Inland Leidy, Inc.	Baltimore	1
24	Yorktowne Plaza Shopping Center	Cockeysville	10.5
25	Former Maryland Wood Preserving	Rockville	2.11
26	1600-1606 Bush Street	Baltimore	0.42
27	Kop-Flex	Hanover	25
28	40 West Auto Park, Inc.	Baltimore	3.6
29	PATS, Inc.	Columbia	2.7
30	Silver Spring Redevelopment Project	Silver Spring	2.42
31	Har Sinai Property	Baltimore	17.6
32	Hyattsville Gas Former MGP	Edmonston	13
33	Former Esskay Plant	Baltimore	12.7
34	Arcade Building	Towson	22.1
35	Former Bell Cleaners	Bethesda	0.95
36	Texas Maintenance Yard	Cockeysville	11.2
37	Country Club Mall	LaVale	64.4
38	Point Breeze Business Center (D1A)	Baltimore	5.58
39	Point Breeze Business Center (D3)	Baltimore	7.38

No.	Site Name	City	Acres
40	Point Breeze Business Center (C3)	Baltimore	12.66
41	Eastern Shore Hospital Center	Cambridge	351
42	Wawa Food Market	Salisbury	1.9
43	Proctor & Gamble Soap Manufacturing	Baltimore	13
44	Rockville Post Office	Rockville	0.63
45	AMF Joppa Lanes	Towson	3
46	Laurel Building Supply	Laurel	1.98
47	Crown Simplimatic	Baltimore	13.56
48	Kirk-Steiff Silver Building	Baltimore	2.52
49	2110 Haines Street	Baltimore	3.1
50	Rockville Metro Plaza	Rockville	3.5
51	Former Bausch & Lomb Diecraft Plant	Sparks	27.94
52	Montgomery Park Business Center	Baltimore	27.5
53	Westport Junction Depot	Baltimore	2.85
54	Baltimore Goodwill Industries	Baltimore	3.91
55	Briggs Chaney Plaza	Silver Spring	18.16
56	Valspar Baltimore Plant	Baltimore	2.66
57	National Bohemian Brewery	Baltimore	1.26
58	S. Caroline Street (801)	Baltimore	1.27
59	Port Covington	Baltimore	68
60	Seven Locks Plaza	Potomac	14.95
61	1400 Eastern Avenue	Baltimore	.6
62	Cromwell Fields Shopping Center	Glen Burnie	20.53
63	Olde Forte Village Shopping Center	Fort Washington	16
64	Laurel Shopping Center	Laurel	26.48
65	Constellation Property	Baltimore	5.93
66	Former Kodak Processing Plant	Rockville	10.28
67	1301 South Conkling Street	Baltimore	1
68	3601-3607 O'Donnell Street	Baltimore	2
69	Silver Hill Plaza	Forestville	10.75
70	Cemetery Lane West	Elkridge	30.9
71	Schroyer's Recycling Center	Frederick	5.85
72	Central Hampton Business Park	Capital Heights	6
73	Former Chesapeake Paperboard Company	Baltimore	9.3
74	Lanham Center	Lanham	0.82
75	Bohager Properties	Baltimore	1.88
76	Cleaning by Riley	Annapolis	1.37
77	Mini Shopping Center	Capital Heights	1.76
78	Meadows Park	Baltimore	12.51
		TOTAL	1608

(Continued from page 14)

Voluntary Cleanup Program Overview

Key components of the VCP program include eligibility and application requirements, the streamlined cleanup process and liability limitations. Eligible applicants may be either responsible persons (as defined under existing Maryland law) or prospective owners who have not previously owned the property and did not cause or contribute to contamination at the property (persons who knowingly or willfully violated a law or regulation concerning hazardous waste are not eligible). Eligible properties are those contaminated or perceived to be contaminated by hazardous substances. Sites on the National Priorities List, under active enforcement by MDE, subject to a State-issued controlled hazardous substances permit or contaminated after October 1, 1997 and owned or operated by a "responsible person" (unless contaminated through natural events) are not eligible. These exclusions are intended to eliminate the

(Continued on page 16)

most severely contaminated sites, sites regulated under another authority and newly contaminated properties.

In addition to an application, an eligible party must submit a Phase I and II environmental site assessment, all known environmental information and an application fee of \$6,000. Applicants and participants are required to pay for MDE oversight costs. If the cost of application review and oversight exceeds the \$6,000 application fee, the participant will be billed by MDE for additional costs. Unused fees are refunded at the conclusion of the Voluntary Cleanup Program process.

Within 60 days after receipt of a complete application package, MDE will notify the applicant in writing whether the application is approved or denied and, if approved, whether the applicant is an inculpable person (the prospective owner) or responsible person. If a cleanup of the eligible property is not required, MDE will issue a No Further Requirements Determination stating there are no further requirements related to the investigation of hazardous waste at the property.

If a cleanup is required, a proposed response action plan must be submitted to MDE for approval. Upon submission of the plan to MDE, certain public participation requirements must be initiated. These include publishing a notice of the proposed response action plan in a local newspaper and posting a notice at the eligible property of the intent to conduct a response action plan at the property. If the plan is approved, MDE will issue a response action plan approval letter that states no further action will be required other than those actions included in the plan. If the plan is implemented to the satisfaction of MDE and the cleanup criteria are achieved, the participant will receive a certificate of completion. The certificate must state that: 1) the requirements of the response action plan have been completed; 2) implementation of the plan achieved the cleanup criteria; and 3) MDE may not bring an enforcement action against the participant at the property. The participant is released from further liability to the State for the remediation of the property for contamination identified in the environmental site assessment and is not subject to a contribution action.

There are reopeners, or specific circumstances under which the participant may be required to take further action, for each of the three liability limitations: the no further requirements determination, the response action plan approval letter, and the certificate of completion. These reopeners are broader for participants designated as responsible persons than for those who are inculpable persons.



View of the recently purchased X-Ray Fluorescence (XRF) machine used to test for metals in soil and sediment samples. The ERRP's Voluntary Cleanup and State Superfund Divisions extensively use XRF and Immunoassay Field Screening Technologies during site sampling investigations. These technologies offer lower cost alternatives to having samples analyzed by a fixed laboratory. Field Screening Technologies may be used in conjunction with a fixed sampling and chemical analysis program to reduce the total number of samples sent to a fixed laboratory in order to demonstrate attainment of a cleanup standard.

Guidance workshop deemed a great success!

By Fran Stierstorfer

On December 5, 2000, the Maryland Department of the Environment's Environmental Restoration and Redevelopment Program (ERRP) sponsored the Soil and Groundwater Cleanup Standards Guidance Workshop at the Baltimore Rowing and Aquatic Center. The workshop coincided with the release of the Soil and Groundwater Cleanup Standards Guidance document. The purpose of the guidance is to provide uniform and consistent human health based numerical cleanup standards for the most frequently encountered hazardous substances in either soil or groundwater. The guidance will provide clear direction to contractors and businesses on investigation and remediation requirements for properties contaminated by hazardous substance releases.

"The real value of the guidance will be to reduce time and costs associated with review of risk assessment reports," said Deputy Director Horacio Tablada. "It will provide greater certainty to the users on Department expectations for investigation or remediation of properties perceived or actually contaminated by controlled hazardous substance release."

The document took more than two years to develop. Three-quarters of attendees surveyed rated the workshop to be very good or excellent. "The workshop not only had a full registration, but approximately 100 registrations could not be accepted due to limitations in facility space," ERRP Program Administrator Karl Kalbacher added. Because of the high level of public interest in the Soil and Groundwater Cleanup Standards Guidance, a second workshop was held in the Spring 2001. To download the guide, visit MDE's web site at: www.mde.state.md.us/WAS/hazcleanup. ■

Hyatt proves promising for Eastern Shore community

By John Cherry

The skyline of Cambridge is changing as construction continues on the Hyatt Regency Chesapeake Bay Resort, Spa and Marina, which will open in December, 2001 on the site of the former Eastern Shore Hospital Center.

The 351 acre site has gone through strict environmental assessment and cleanup requirements for hazardous substances mandated by the Maryland Department of the Environment's (MDE) Voluntary Cleanup Program (VCP) in order to accommodate the \$140 million project with 400 room hotel and conference center, an 18-hole golf course and a 400 slip marina. Future development includes 94 single-family building lots, 190 townhouses and 425 timeshare units.

The VCP provides a way for property owners and prospective purchasers to work voluntarily under MDE's oversight to investigate and remediate properties. At the successful completion of a VCP project, the program

participant receives either a No Further Requirements Determination or a Certificate of Completion for the eligible property.

A No Further Requirements Determination states that MDE does not have further requirements related to the investigation or remediation of controlled hazardous substances at the property. Where a cleanup is required, a Certificate of Completion is issued upon successful completion of an approved response action plan. The liability release provided by MDE's signoff enables a current or prospective property owner to successfully market a property or secure financing to redevelop the site.

MDE issued a certificate for the former Eastern Shore Hospital Center property in October, 1999. According to Karl Kalbacher, administrator of MDE's Environmental Restoration and Redevelopment Program, the issuance of

(HYATT continued on page 18)

(HYATT continued from page 17)

the certificate cleared the way for the sale of the property and construction of the Hyatt Regency Chesapeake Bay Resort, Spa and Marina. The certificate is conditioned on use of the property for limited residential purposes, which provides for unrestricted use of the property except for a prohibition on the use of shallow groundwater for any purpose. Use of the deep groundwater beneath the property is unrestricted, but must be monitored annually for a minimum of five years.

The former Eastern Shore Hospital Center has created an opportunity to make use of the VCP in a rural area of Maryland. "In this important development, we found MDE dedicated – as we were – with utilizing Brownfield and related programs to assist us to recycle antiquated institutional property into a resort development which will be a source of pride for the entire State," said Christian Chambers, the resort's project director of the Quadrangle Development Corporation.

Dorchester County Economic Development Office esti-



Work continues on the Hyatt Regency Chesapeake Bay Resort, Spa & Marina complex in Cambridge, a project of the state's Voluntary Cleanup Program.

mates that the Hyatt Regency Chesapeake Bay Resort, Spa and Marina will funnel \$30 to \$34 million annually into the region and employ about 400 people. According to the county Economic Development Office, the Hyatt project has been a catalyst for the development of new businesses in the surrounding area, as well as is improving the commercial and residential real estate markets.

Even the local airport is in for a change. Dorchester County is expanding the local airport to accommodate an expected 15,000 to 20,000 annual airport passengers. Although the population of the county has remained fairly constant for the past 50 years, the Economic Development Office expects the recent census totals to reflect a new population growth trend for the area, which in large part can

be attributed to the Hyatt Regency project.

To see changes the VCP is making in Maryland, visit MDE's web page at www.mde.state.md.us/environment/was/brownfields/factsheets. ■

MDE moves to Montgomery Park - "a redeveloped brownfield site"

By Richard McIntire

Montgomery Park Business Center has begun its transformation from the former Montgomery Wards East Coast Catalog House to the new headquarters for the Maryland Department of the Environment (MDE).

Workers have been busy recycling wooden racks, conveyors, light fixtures and other items that will not be utilized in the renovation. So far, workers have removed 898 tons of steel; 3,770 cubic yards of wood; and 168 thirty-yard dumpsters of miscellaneous debris. Additionally, 2,649 thirty-gallon bags of asbestos; 21 fifty-five gallon drums of ground fluorescent light bulbs; and 21 fifty-five-gallon drums of PCB ballasts from old light fixtures are being removed in accordance with applicable regulations.

On March 1, 2000, the project developer for the Montgomery Park site applied to the State's Voluntary Clean Up Program seeking a No Further Requirements (NFR) determination. In keeping with the requirements of the program,

(MONTGOMERY PARK continued on page 19)

(MONTGOMERY PARK continued from page 18)

both a Phase I & II Environmental Audit was completed for the site and submitted for VCP staff review. Upon completion of the report review, the VCP determined that the site was eligible for NFR determination provided that the developer place a deed restriction on the use of the site for nonresidential purposes. On February 5, 2001 the VCP issued the NFR for the Montgomery Park site and, with the sign-off, triggered in motion the process for redevelopment of the property.

At the ground-breaking ceremony for the Montgomery Park site earlier this year Governor Glendening noted that “Reusing old commercial sites that have already been developed is a vital component of our Smart Growth program. By renovating these existing sites, we save resources and taxpayer dollars that would be needed for infrastructure costs. Those facilities, such as roads, plumbing and other utilities, are already in place.”

The renovation of the Montgomery Park Business Center will create the region’s largest “Green Building,” involving energy efficiency, recycling, and sustainable materials. Included are glass-backed elevators which consume less than half the energy of the passenger elevators currently in the building; ice storage in conjunction with new Trane “Chillers” will allow energy to be consumed during off-peak electrical periods; operable windows with Low-E glazing will allow in light but block radiant heat; and a “smart-building” control system will optimize the use of the outside air for cooling, control lighting based on daylight, and enhance the performance of the high efficiency boilers and chillers.

A 30,000 square foot section of the 8-story Montgomery Park Business Center will be covered with an extensive “Green Roof,” an innovative storm water management control to reduce runoff while minimizing impervious surfaces and providing new habitat in urban areas. A waterproofing and root-resistant single ply roofing system will be covered with a four-inch thick soil layer. Plants indigenous to alpine environments will form a dense vegetation mat that will reduce runoff by approximately 75 percent.

Additionally, storm water will be collected from the site and be used for flushing toilets and irrigation.

MDE will occupy nearly one quarter of the building. MDE employees will work in workstations engineered and constructed of sustainable materials. These include wheatboard work surfaces and wall supports, homosote (made of recycled newspaper) partitions and recycled wood edges. All of the carpeting in the space will be recycled material.

“We are working hard to protect the environment and our offices should reflect those principles,” said MDE Secretary Jane T. Nishida. “In this new ‘green building’ MDE will truly be practicing what we preach.” ■



Phase II environmental investigation activities at Montgomery Park during the VCP application process.

Port aims to make site ship shape

by Fran Stierstorfer

The Maryland Port Administration is among many entities employing the Maryland Department of the Environment's Voluntary Cleanup Program (VCP) to investigate and clean up polluted sites that have been tagged for redevelopment.

In an effort to grow its automobile storage facilities, the Port Administration turned to the VCP to give new life to the former Kurt Iron & Metal property located in the heavily industrialized Fairfield section of Baltimore City. Accessed from Childs Street, the property is bound on three sides by the Toyota and Masonville automobile terminals and on the north by the Patapsco River.

"This property will be used as an addition to the Port Administration's automobile terminal, providing valuable land to grow an important job-producing commodity for Maryland," said Port Planner Eldon Miller. "The port Administration plans to raise the grade on the site to equal that of the adjoining properties." The area will be paved, explained Miller, but no permanent structures are planned.



Kurt Iron & Metal property in July, 1998.

Historically, the Maryland Shipbuilding & Dry dock Company used the property to store and dispose of various items generated by its shipbuilding, shipbreaking and maintenance activities. Some of the disposed items were reportedly burned and the residual was landfilled on the property.

The Maryland Shipbuilding and & Drydock Company also used the site as sandblasting area to remove paint from ship components. Demolition debris from the Great Baltimore Fire of 1904, and debris from the razing of the neighboring Maryland Shipbuliding & Drydock facility was also reported to have been disposed of on the property.

From 1987 to 2000, a succession of shipbreaking companies operated on the site, dismantling military and commercial ships, salvaging materials to sell, and disposing the rest –including petroleum products, PCBs, and asbestos containing materials.

As a result of these historical activities a variety of paints, solvents, PCBs, waste oils, lubricants, and fuels were generated, used stored and/or released on the property over the years. Portions of the property were also used to store and /or dispose of asbestos containing materials, furnace slag, sandblasting grit, a variety of storage tanks, abandoned heavy equipment and vehicles, appliances, storage trailers, wood and metal debris.

In February, 1999, MDE accepted a VCP application and supplemental information from the Port Administration to purchase and reuse the former shipyard.

(PORT continued on page 21)

(PORT continued from page 20)

“MDE’s VCP will be working closely with the Port Administration to oversee the remediation of environmental concerns that have resulted from the long history of shipbuilding, ship maintenance, and ship dismantling activities,” Miller stated.

In addition to the removal of controlled hazardous substances under the VCP, the Port Administration will be removing and scrapping several abandoned barges and small ships.

“The former Kurt Iron & Metal site is a perfect example of a brownfield site being identified and the land being put back into productive use,” said Karl Kalbacher, Administrator of MDE’s Environmental Restoration and Redevelopment program. “The Port is to be commended for taking the initiative to move forward on this site cleanup. This project fits well into Maryland’s Smart Growth strategy of reusing land in our urban centers where infrastructure is already in place, while simultaneously stimulating economic development in an existing community.”

The Port Administration expects to complete the cleanup of the site, construct the new facility and begin operations by 2003. ■



STATE SUPERFUND DIVISION

The State Superfund Division has the most diverse responsibilities of the three Divisions in the ERRP. The Division conducts both site investigations and remedial actions at enforcement lead sites, State fund lead sites and brownfields sites.

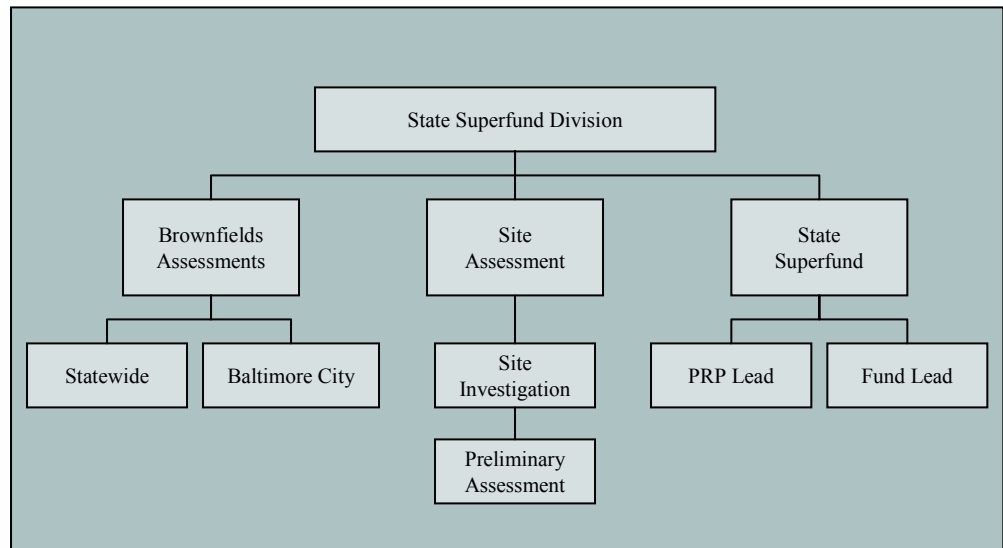
The Division also prepares Brownfield Assessments under two EPA Grant funded programs. The Division received in the Spring, 2000 a \$400,000 grant from EPA to prepare Brownfield Assessments in Baltimore City. The program referred to as the **Baltimore City Brownfield Initiative** is expected to continue for seven years.

The Division has also been conducting **Statewide Brownfield Assessments** across the State for the past five years under a similar EPA grant funded program.

Since the inception of the federal Superfund Program in 1980, the Division has received EPA funding to prepare **Preliminary Assessment/Site Inspections** at sites throughout the State. The purpose for these investigations are to screen sites for listing on EPA's NPL.

At the State level, the Division receives funding to conduct both site assessments and implement remedial actions at contaminated sites. This **Fund Lead Sites** program is directed toward addressing sites where a financially viable responsible person to the contamination is not available to pay for the investigation or remediation. This program started in 1998 and receives PAYGO funding to support site related actions.

The State Superfund Division also oversees the **Potentially Responsible Party Sites** program. Division staff in this program oversee the investigation and remediation of sites that are completed by persons considered responsible for the contamination.



Baltimore City Brownfields Initiative

In support of the State of Maryland's Smart Growth Initiative, the Environmental Restoration and Redevelopment Program (ERRP) was awarded a \$400,000 grant from the U.S. Environmental Protection Agency (EPA) in the Spring 2000 to significantly expand the current Brownfields Assessment-Remediation-Redevelopment Program in Baltimore

(Continued from page 22)

City. This grant award was negotiated as part of the MDE-EPA Environmental Partnership Agreement (ENPA), whose purpose is to provide a long term, results-based management plan that will improve the effectiveness of Maryland's environmental programs and strengthen the relationship between EPA and MDE.

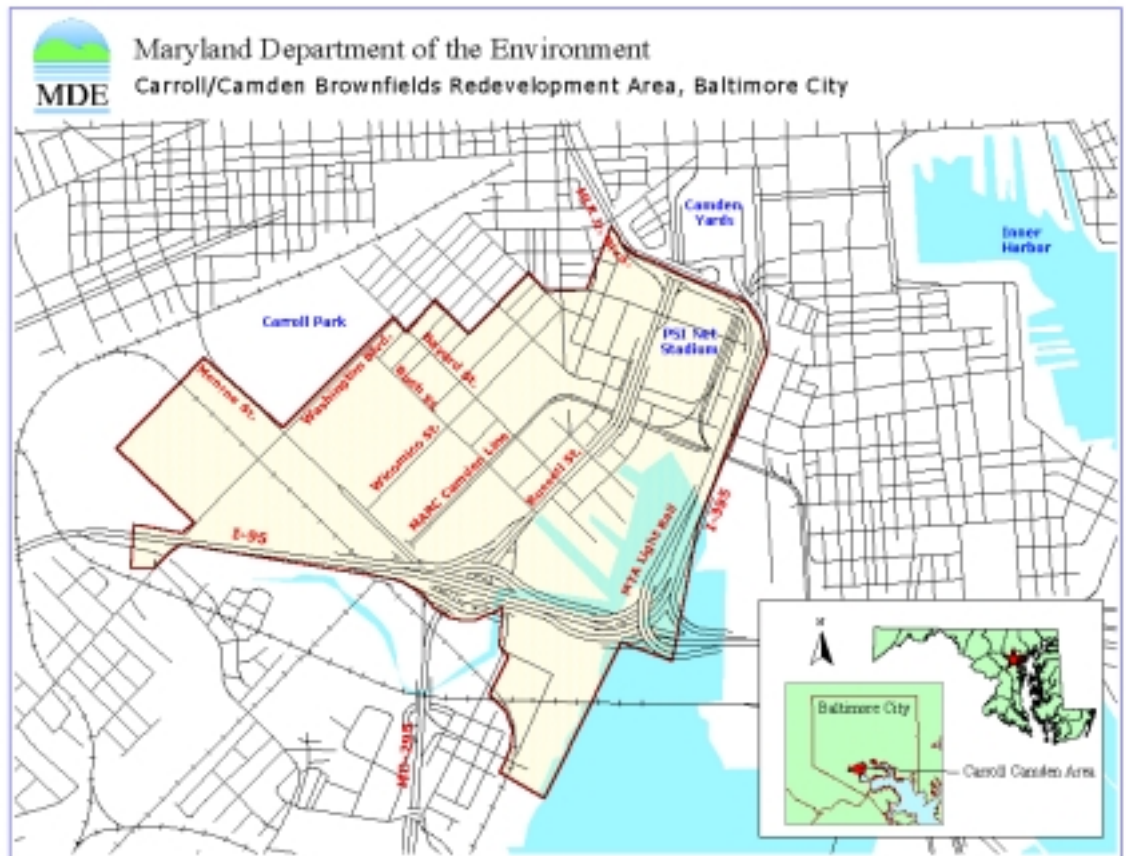
The Baltimore City Brownfields Initiative is a seven-year project that will prepare tracts of land for cleanup and redevelopment specifically in the Carroll/Camden Industrial area, a heavily industrialized and underutilized section of Baltimore City. This project will fund the conduct environmental assessments of tracts of property, and identify those properties for which there are no further requirements, or those properties for which cleanup is determined to be necessary.

This Initiative will also address redevelopment issues ranging from Resource Conservation and Recovery Act (RCRA) permit requirements to storm water management and will promote pollution prevention for redevelopments in a comprehensive manner. At the remediation stage, all necessary MDE permit or oversight programs would coordinate, give priority to, and "fast track" permits reviews and issuance for these Brownfields redevelopment projects as part of the ENPA project.

The projected funding for this initiative in the out years is \$600,000/year. An additional three geologists will be hired by MDE over the next three months to staff the initiative. Federal funds will be used to support ERRP staff in the conduct of environmental site assessments, to oversee remedial actions at Brownfields sites, and to purchase "state of the art" field laboratory equipment to screen hundreds of samples that will support the development of a regional clean up and reuse strategy for the area.

The Carroll/Camden area, located in West Baltimore, is heavily industrialized. Like many of Baltimore's traditional industrial strongholds, this area has been in decline in response to a loss of major industrial employers. The resulting disinvestments in the area coupled with widespread negative perceptions about potential environmental issues for available properties have contributed to large tracts of underutilized property.

Recently, Baltimore City completed a Master Land Use Redevelopment Plan for the Carroll/Camden area. This plan identified acceptable land uses and will be used by MDE to customize remediation strategies for addressing environmental pollution cases in the area. Simultaneously, as a result of being designated an EPA's Brownfields Pilot and Showcase Community, Baltimore City, EPA Region III, MDE and the U.S. Army Corps of Engineers are developing partnering strategies



to conduct Brownfields sampling and analysis in the Carroll/Camden area. As of June, 2001 the partnering team completed Brownfields Assessments at two sites; the Dickman Street site for the planned National Aquarium Training Center, and the waterfront area in the vicinity of Warner and Eutaw Streets.

Once a site has been determined to need cleanup, the owner or developer will be encouraged to join the State's Voluntary Cleanup program (VCP). The VCP has been successful in facilitating the assessment, cleanup and redevelopment of contaminated parcels of property. The ERRP believes this initiative will enhance the usefulness of the VCP because it will address two main concerns commonly raised by developers when considering acquisition and redevelopment of Brownfield properties:

- 1) Seeking larger, contiguous tracts of land and,
- 2) Addressing concerns of having to remediate area wide contamination on a site by site basis.

In the absence of fully implementing a cleanup strategy for the Carroll-Camden area using the VCP, the State will consider using other statutory and regulatory processes to support this redevelopment plan. In 2000, the MDE committed to the General Assembly to increase enforcement efforts related to requiring responsible parties to cleanup historically contaminated property throughout the State. Properties in the Carroll- Camden area that are determined to be in need of cleanup will eventually be required to complete remediation requirements under these processes.

Statewide Brownfields Assessments

For the past six years the State Superfund Division has been an active participant in the EPA-funded Brownfields Site Assessment Initiative. Under this initiative, Federal funds are used to conduct site assessments on publicly or privately owned brownfields sites. To be eligible for the program, sites must be vacant or under-utilized; remediation of the site must be cost feasible and redevelopment must exist that will create jobs and improve the local tax base. To date, the Division has conducted 42 assessments of brownfields properties totaling over 1524 acres located in urban, as well as more rural areas, across Maryland. Each brownfields assessment increases the potential for reuse of that property by providing prospective buyers with the environmental information necessary to quantify the extent of environmental costs that will be required to meet public health and environmental protection standards. In some cases, the assessments have determined that there are no further requirements necessary for properties which increases the likelihood that those properties will be redeveloped.

The following describes major activities conducted at Statewide Brownfields Assessment Sites during FY 2001.

Port Deposit Quarry Site: The town of Port Deposit requested the MDE to conduct a brownfields assessment of a former rock quarry located within the town limits. Over a period of years the quarry was filled with primarily construction debris. MDE completed the assessment of the site in the Spring, 2001. MDE's findings were that the site was contaminated with low levels of metals and physical hazards also existed. MDE indicated that the site would require limited remediation in the form of a soil or asphalt cap and an institutional control would need to be placed that restricts land use to non-residential purposes.

Easton Town Gas Site: At the request of the town of Easton, the MDE conducted a Brownfield Assessment at the site of the former Easton Town Gas Site. MDE collected both soil and groundwater samples and analyzed them for chemicals associated with coal gasification. The results of the testing indicate that the site is significantly contaminated with coal tar/coal ash residue in the form of polycyclic aromatic hydrocarbons. MDE has indicated that it will strongly consider remediating this site using PAYGO funds in FY 2002.

Goldsboro Site: The town of Goldsboro has requested that the MDE conduct a brownfields assessment at the former industrial facility in the town limits. The site owner has been delinquent in paying property taxes and the town has condemned the property. An investigation of the site is expected to be completed in September, 2001.

Leonardtown Wharf Site: The MDE has initiated a brownfields assessment at the former St. Mary's Ice and Fuel Company site located in Leonardtown. The site is 5.2 acres and is located on Breton Bay. Leonardtown requested the brownfields assessment to support a redevelopment interest by a local developer. Field investigation activities will occur in July, 2001.

MDE promotes reuse of historic building in Hagerstown

By Peter Resh

As towns and cities attempt to revitalize and reuse under-utilized or abandoned properties in former downtown "core" areas, the cost of an environmental assessment to determine potential environmental remedial costs before renovation can begin play an increasingly important role

The Maryland Department of the Environment's (MDE) Site and Brownfields Assessments/State Superfund Division performs environmental assessments to help identify potential environmental concerns during the early stages of the redevelopment process. Those assessments provide information that enables developers to better understand the potential environmental liabilities connected with the redevelopment of sites, commonly referred to as "Brownfields." Funding for the program is provided as part of MDE's cooperative agreement with the U.S. Environmental Protection Agency (EPA).

One recent brownfields project involves the University of Maryland's plans to construct a new campus in Hagerstown to make higher education more accessible for residents of Western Maryland. Rather than use an undeveloped piece of property outside of town, often called a greenfield, the university decided to redevelop a series of abandoned historic buildings in Hagerstown's downtown business district for its new campus. The Baldwin House property was chosen for the new location due to its infrastructure and relative proximity to the downtown parking garage and Frostburg University Hagerstown Center.



Future location of University of Maryland Hagerstown Campus.

Here are several elements to a brownfields investigation prior to on-site sampling. MDE performs an extensive historical search to identify potential environmental problems prior to actual onsite sampling. The site manager routinely checks aerial photos, historic information from libraries and agency files, deed/ownership records, taxation maps, Sanborn Fire Insurance maps, and conducts interviews with past residents and/or employees if possible. After the historical study is completed, a targeted sampling investigation of both soil and groundwater is conducted to identify environmental hazards such as asbestos, lead paint, polychlorinated biphenyls (PCBs), above ground and underground storage tanks, volatile and semivolatile chemicals, and metals. Sampling and analysis is performed by State personnel or independent contractors hired by MDE. Finally, the investigation results are compiled and EPA and MDE provide recommendations to appropriate parties on actions needed to remedy the site.

To be eligible for the EPA funded Brownfields Site Assessment Initiative, sites must be vacant or underutilized. In addition, the redevelopment of the property must have the potential to create jobs and improve the local tax base.

To date, MDE's Site and Brownfields Assessments/State Superfund Division has conducted 42 assessments of brownfields properties totaling over 1524 acres that have been cleared for redevelopment.

For further information concerning the brownfields initiative, contact Arthur O'Connell, in MDE's Site and Brownfields Assessments/State Superfund Division at (410) 537-3493. ■

Brownfield site aids the homeless

By Art O'Connell

After eight decades of producing everything from leggings for soldiers that marched to war, to dress shoes, the old Hagers Shoe Factory lost its fight to stay in operation. Today, the former plant sits abandoned and shuttered, a silent testimonial to its former manufacturing legacy.

Abandoned sites like the Hagers Shoe Factory often referred to as brownfields, dot the landscape of many urban centers. The presumed high cost of environmental assessment and cleanup as well as renovation oftentimes dissuades developers from investing in these properties. Instead, developers more often direct resources to former farms or "greenfields" for their new projects. The result is more sprawl and less open spaces for people and wildlife.



Former Hagers Shoe site scheduled for redevelopment as a shelter for the homeless.

To address this problem and promote Governor Glendening's "Smart Growth" program, the Maryland Department of the Environment's (MDE) Site and Brownfields Assessments/State Superfund Division, with funding from the Environmental Protection Agency (EPA), can investigate sites like the Hagers Shoe Factory which helps to uncover environmental problems that can hinder redevelopment and reuse of such properties.

In June, 1997, the owners of the Hagers Shoe property donated the site to the Christ's Reform Church. The Church is currently using part of the site for a shelter for the homeless. However, they hope to raise 2.6 million dollars to demolish part of the plant and renovate the remaining structure for use by the Religious Effort to Assist and Care for the Homeless (REACH), the Washington County Housing Authority and the Community Action Council. All three nonprofit organizations plan to use the facility for office space and community events. But for now, the building that once hummed with the sound of machinery will be replaced with the voices of the home-

less. Mr. Winebrenner, the project manager for the Church, expressed the hope that the project would help the homeless in their struggle to break the despairing atmosphere engulfing them.

To aid the Church in its redevelopment of the site, MDE's Site and Brownfields Assessments/State Superfund Division recently performed a Brownfield Assessment of the property to help identify environmental problems that might hinder the completion of the project. Funding for the work is provided as part of the Cooperative Agreement between MDE and EPA. ■

EPA award boosts Maryland's Brownfields program

By Richard McIntire

Baltimore & Prince George's Counties To Benefit From Additional Funding

Maryland's business and economic development community received a favorable boost from the federal government on May 23, 2000. Two Maryland jurisdictions will be eligible to receive a portion of \$3.15 million in U.S. Environmental Protection Agency money awarded to mid-Atlantic states for brownfields redevelopment projects. Brownfields are typically abandoned industrial or commercial sites where documented or perceived site contamination has been a barrier to redevelopment.

Maryland's Department of the Environment (MDE) will administer the \$1 million of federal support under its Voluntary Cleanup/Brownfields Program as a revolving loan fund. The funding will provide Maryland businesses with lower than market rate interest loans for clean up and redevelopment of properties in multiple locations in Baltimore County and areas in Prince George's County, including its enterprise zone. In the past, EPA dollars granted to the State were solely for Brownfields site assessments.

"This funding is a welcome addition as Maryland builds its Brownfields tool box," said MDE Secretary Jane T. Nishida. "We will be able to leverage more dollars, encourage 'Smart Growth' and provide greater opportunities in support of revitalizing the State's urban core."

"By using EPA seed money, communities across the country have been re-energized," said EPA Regional Administrator Bradley Campbell. "EPA's Brownfields initiative is breathing new life into dead properties, rebuilding tax bases, providing employment, new products and services to residents in those redeveloped areas."

"With these new funds, Baltimore County furthers its commitment to helping businesses clean up and redevelop Brownfields sites," said Robert L. Hannon, executive director of Baltimore County's Department of Economic Development. "Coupled with Baltimore County Brownfields tax credits, these loans will pave the way for smart redevelopment of land in prime commercial locations." ■

Site Name	City	Acres
1440 Key Highway	Baltimore	2
Seton Business Park	Baltimore	40
Carroll/Camden Survey	Baltimore	500
CSX 700 W. Chesapeake	Baltimore	6
Fairfield Homes	Baltimore	20
CSX Chesapeake and Shell Rd	Baltimore	3.3
4400 Reisterstown Rd.	Baltimore	6
Kane Street	Baltimore	1.7
3500 Biddle Street	Baltimore	22.5
Shannon Drive	Baltimore	8
Parkin Street	Baltimore	12
5600 Lombard Street	Baltimore	8.6
Pat Block-Haven Street	Baltimore	7.6
Fairfield Mixed Residential II	Baltimore	10
Fairfield Mixed Residential I	Baltimore	10
CSX Shell and Patapsco Ave	Baltimore	8
Fort McHenry Shipyard	Baltimore	13.8
801 South Caroline Street	Baltimore	1.5
Museum of Industry	Baltimore	1.9
Leonardtown Wharf	Leonardtown	5.2
Phillips Packing	Cambridge	6

**Brownfields
Assessments
Completed by
the State
Superfund
Division**

Site Name	City	Acres
FNT Realty Cherry Hill	Baltimore	1
3700 Potee St	Baltimore	1
Phillips Packing	Cambridge	6
Centreville	Centreville	1.2
Crop Production Services	Chestertown	2.6
Cordova Elem. School	Cordova	4
PPG Industries	Cumberland	150
Footer Dye Works	Cumberland	1.5
Trinco Industrial Park 18 lots	Elkton	525
Frederick Cooperative	Federick	2
Middletown Fuel Depot	Frederick	1
U Of M Hagerstown Center	Hagerstown	1.0
Christ's Church/Cannon Shoe	Hagerstown	4.0
Penns Marina	Havre De Grace	6
Riegel Scrap Property	Havre De Grace	6
Gilbert Property-4 Lots	Havre De Grace	4.6
Baltimore Aquarium	Baltimore City	7
Hampton Business Park	Prince George's	69
Tidewater Tractor	Wye Mills	3.2
Hopkins Quarry	Port Deposit	30
Rossnan Property	Goldsboro	4.3
Total		1524.5

Preliminary Assessment/Site Inspection Sites

The MDE has participated in the EPA Superfund Preliminary Assessment/Site Inspection grant program ever since the CERCLA law was enacted in 1980.

The primary objective of the PA/SI program phase is to obtain the data necessary to identify the highest priority sites posing threats to human health and the environment. The site assessment phase begins with site discovery, or notification to EPA of possible releases of hazardous substances. Sites are discovered by Regional EPA offices, State agencies, and citizens who file a PA petition. Once discovered, sites are entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), EPA's computerized inventory of potential hazardous waste sites. EPA then evaluates the potential for a release of hazardous substances from a site during two investigative steps.

- **Preliminary Assessment:** A PA is a limited-scope investigation performed by States and/or EPA on every CERCLIS site. PA investigators collect readily available information and conduct a site and environs reconnaissance. The PA is designed to distinguish between sites that pose little or no threat to human health and the environment and sites that require further investigation. The PA also identifies sites requiring assessment for possible emergency response actions.
- **Site Inspection (SI):** If the PA recommends further investigation, an SI is performed. SI investigators typically collect waste and environmental samples to determine the substances present at a site and whether they are being released to the environment. The objective of the SI is to identify which sites have a high probability of qualifying for the NPL. A second objective is to identify sites posing immediate health or environmental threats which require emergency response.

At the end of both the PA and SI, EPA applies the HRS to derive a site score and determine either that further investigation is necessary or that the site should receive a "no further remedial action planned" (NFRAP) recommendation. A NFRAP recommendation means that further action under the Federal Superfund program is not planned; however, such sites may be reexamined later if warranted. File information for NFRAP sites is provided to the State, or other regulatory authorities, which may also take action on their own.

Site Assessment Investigations

During the past year the Site and Brownfields Assessments/State Superfund Division competed four investigations under the Cooperative Agreement with EPA Region III. Three of the investigations were Expanded Site Investigations, (ESI) and one was a Preliminary Assessment/Site Investigation (PA/SI).

Dwyer Property - Located in Cecil County, the Dwyer property was formerly part of the Triumph Explosives business that operated as a munitions plant from 1939 until the 1950s. Previous investigations had revealed groundwater contaminated by chlorinated solvents. This ESI was conducted to determine the extent of contamination and whether the site would be eligible for listing on the Federal Superfund National



Groundwater and surface water sampling during the Expanded Site Investigation at the Dwyer Property in Cecil County.

Priorities List of contaminated sites.

Pemco Inc. – This site is located in Baltimore City. Pemco, Inc. utilized an on-site industrial landfill for the disposal of waste frit, which is a heavy metal laden colorizing agent for ceramic tile. The former landfill has not been assessed since closure almost twenty years ago. A Site Assessment was designed to measure the impact from the site on an adjacent stream that flows under the landfill and empties into the nearby Patapsco River.

Newell Inc. - This former metals recycling facility is located in Hagerstown, Washington County. The original manufacturing process produced heavy metals and Polychlorinated Bi-Phenyl (PCB) waste that was discharged to an onsite pond. The purpose of the ESI was to determine the levels of residual contamination remaining in the pond and to determine if contaminated soil from the pond was spread to other piles of soil stockpiled on the site.



Direct-push groundwater sampling at Pemco, Inc., located in Baltimore City.

New Jersey Fireworks – This site is located in Cecil County. This former fireworks factory came to the attention of the Department when the Bureau of Alcohol, Tobacco and Firearms conducted an inspection at the facility and noted that there were old disposal areas remaining on the site. The PA/SI was conducted to collect historical information about the site and to determine if the former burn areas were contaminated.

State Superfund Potentially Responsible Party Sites

As part of the negotiations to amend the Brownfields Revitalization Incentive program during the FY 2000 Maryland legislative session, MDE was requested to expand efforts to investigate and remediate contaminated sites on the State Master List of sites. In support of this initiative, MDE was provided funding to hire an Assistant Attorney General to support efforts to contact and encourage landowners and/or potentially responsible persons to conduct the environmental studies at these sites.

In July, 2000 MDE undertook to identify eligible sites on the State Master List to participate in this initiative. The process MDE used for site selection built upon a “Three Step Process” developed by the State Superfund Division to evaluate and remediate sites on the State Master List. Step One of the process began in FY 1999 and entailed a reassessment survey of 132 sites that had been investigated during the early 1980s and later given a designation of No Further Remedial Action Planned (NFRAP) by EPA. See Appendix III for a complete list of sites included in the “Three Step Process.” From this reassessment survey, a subset of sites was retained for further consideration based upon the following criteria: 1) identified as requiring additional investigation, 2) located in Smart Growth area, and 3) not subject to active investigation by the Department. Fourteen sites were identified as meeting these criteria.

Concurrent with efforts to identify a list of eligible sites, MDE developed a Hazard Ranking Model to prioritize sites for further assessment. The purpose of the Model is to compute a numerical hazard score from information supplied from sample analytical data, EPA risk-based concentrations and natural resources located on or near the site. The output of the Model is a numerical score. The model is configured such that a higher numerical score represents a higher relative degree of risk posed by a site to either public health or the environment.

The Hazard Ranking Model was completed in August, 2000 and the 14 identified sites were then evaluated using the Model. From the modeling exercise the top seven sites were determined.

In 2000, the State Superfund Division began contacting the owners of sites investigated under the “Step—Two” process to determine if they would voluntarily investigate contamination on their property. Initially, six owners were con-

tacted. To date, the effort has had mixed success with some sites being actively investigated while others are being sent Administrative Orders to conduct the needed investigation. A brief history of the sites selected and the progress made to date is as follows:

CSX/KOPPERS-HAGERSTOWN - The former Koppers Company operated as a wood treating facility. It is currently owned by the CSX Railroad. To date, CSX has agreed to investigate the site and take it through the State's Voluntary Cleanup Program.

M&T CHEMICAL/ATOTECH – This facility is located in Baltimore City. MDE has requested the current site owner, Atofina, to investigate unlined lagoons that were formerly used for a tin mud recovery operation. Atofina is also working cooperatively with the owner of the adjacent site (MRI) to investigate the full extent of contamination

MRI – This facility is located in Baltimore City. The former MRI Corporation site has new owner that is working cooperatively with the M&T/Atotech owners to investigate the once connected facilities.

ARMCO/AK STEEL - AK Steel, the owner of the former Armco landfill, submitted a work plan for the site. MDE has provided comments and is awaiting revisions to the investigation plan. This site is located in Baltimore City.

VECTROL – This site is located in Rockville. The current site owner was issued an Administrative Order to investigate a historic release of solvents. The owner supplied information indicating that the contamination discharged to previously used drywells may have been removed during the construction of a new building. The owner has petitioned MDE to consider him an innocent purchaser of the property. MDE is studying the request before determining who will perform confirmatory sampling at the site.

CHEVRON - The owners of the former Chevron pesticide-mixing site in Salisbury have not responded to requests from MDE to conduct an investigation of areas of concern. An Administrative Order to complete the investigation of the site has been issued to the site owner.

CUTRONICS – This facility located in Timonium, formerly manufactured circuit boards. The plant has documented contamination by chlorinated solvents in the groundwater. MDE made several attempts to contact the owner. An Administrative Order was issued to the owner to investigate the extent of contamination at the property.

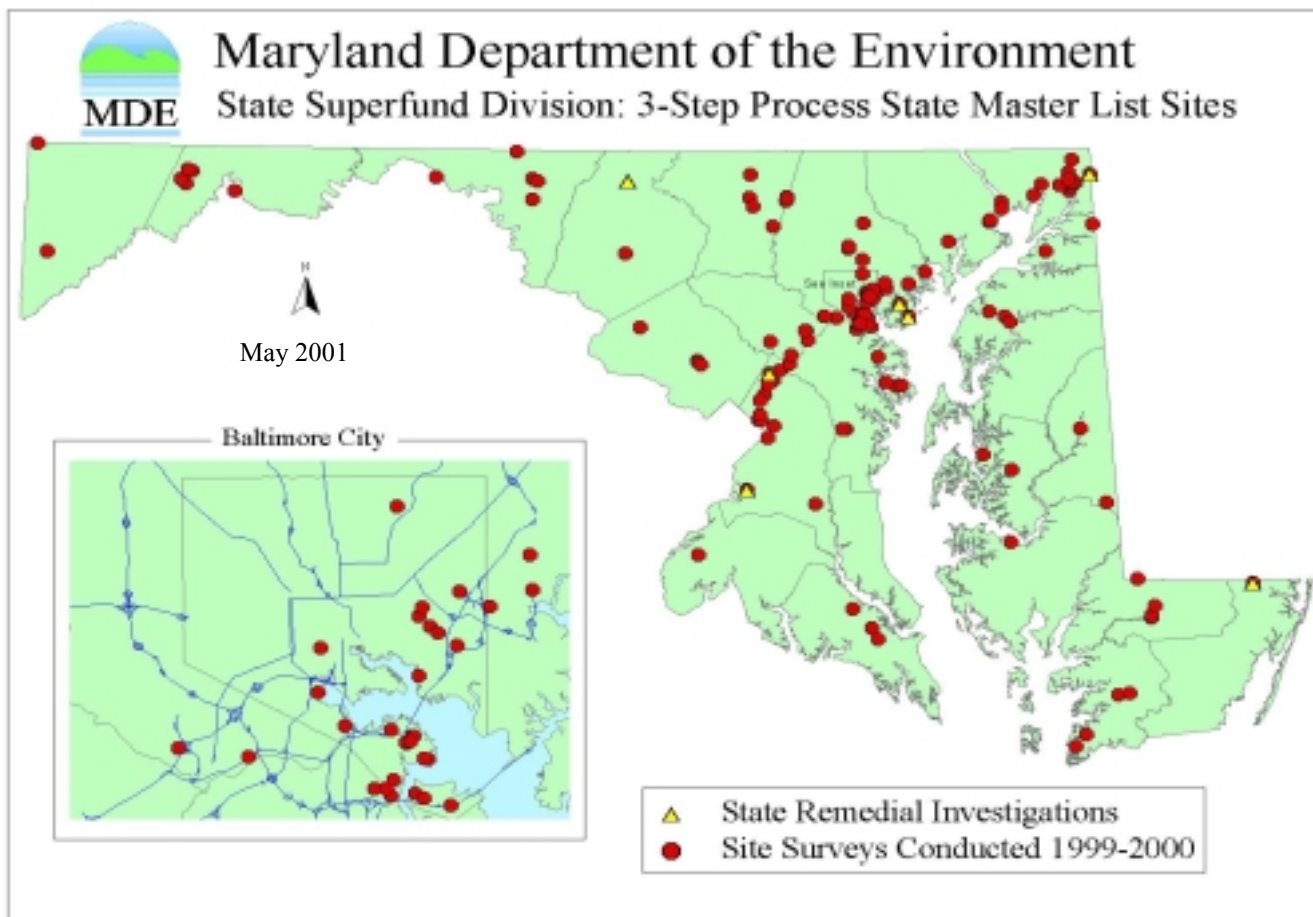
State Superfund "Fund Lead" Sites

The State Superfund (Fund Lead) program is responsible for investigating and remediating hazardous substance release at contaminated sites that pose a threat to either public health or the environment, but where there is no financially viable responsible party to perform the cleanup. These remediations typically prevent human exposure to contamination, remove contamination from the groundwater to protect drinking water supplies and preclude degradation of environmental resources. State General Funds referred to as "PAYGO" (Pay As You Go) monies are the source of funds available for the remediation of contamination.

The Fund Lead Program was re-started by MDE in October, 1998 with the implementation of a "Three-Step Process" for investigating, prioritizing and remediating Fund Lead sites. Step – One of the process included a file survey of 132 of the 335 sites that had previously been given a "No Further Remedial Action Planned" (NFRAP) designation by the EPA. The outcome of the Survey was a determination of whether additional investigation was required by the Division to ascertain the environmental condition at a property. Funding for this step was provided by the EPA.

In FY 2000, MDE received general funds from the general operating budget to hire two geologists and conduct "Step – Two" Site Assessments of sites retained for additional investigation from the "Step – One" process: Site Assessments were conducted on seven (7) of the surveyed sites. From these assessments, MDE determined that three (3) of the seven (7) sites would need some form of remediation. Further, two (2) of the three sites were determined not to have a viable responsible party to fund the cleanup. As a consequence, PAYGO funds will be needed to affect the cleanup of these properties ("Step – Three").

(Continued on page 32)



(Continued from page 31)

In FY 2001 PAYGO funds were provided to remediate the first of the three sites determined to need cleanup, the Sauer Dump Site located in Baltimore County. The MDE is currently completing a remedial assessment of the Sauer Dump Site. The purpose the remedial assessment is to gather information to support issuance of a contract to an approved vendor to cleanup the site. The MDE will complete the cleanup of the Sauer Dump Site in FY 2002 using FY 2001 PAYGO funding.

In FY 2002, MDE plans to remediate the former Easton Town Gas Site in Talbot County using PAYGO funds. MDE in FY 2001, used EPA Brownfield Assessment funds to complete a "Step Two" equivalent environmental testing of the Easton Town Gas Site. Therefore, the next step is to remediate the site (i.e., Step Three Cleanup).

The Easton Town Gas Site was previously used for the manufacture of natural gas from the chemical and physical

(Continued on page 33)

Sauer Dump

North Point, Maryland

By Peggy Smith

The Sauer Dump site was a former unpermitted dump/salvage yard that operated during the 1950s and '60s. It is located in the North Point area of Baltimore County on the western bank of the Back River.

Since 1984, several sampling events have been conducted at the site by the United States Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE). The sampling results indicate that the soil, sediment, and surface water contain elevated levels of polychlorinated biphenyls (PCBs), metals, and semi-volatile organic compounds, and, to a lesser extent, pesticides. Based on these studies, the site was determined to be a potential candidate for the Federal Superfund National Priorities List (NPL).



Direct push technology at work to collect a groundwater sample at the Sauer Dump site.



Aerial view of Sauer Dump site located in Baltimore County.

During a 2000 State Assessment, MDE collected additional

soil, sediment, surface water, and groundwater samples in order to better define the extent of contamination. Although significant contamination is present, the State has determined that the site should not be listed on NPL. The EPA has concurred with the state's position.

MDE is currently in the process of conducting a Remedial Investigation (RI). A wetlands and property boundary survey has been completed and MDE plans to conduct a baseline ecological study, including sediment and fish studies, using a remedial management services contractor. Once the RI is complete, an appropriate cleanup strategy will be chosen which will minimize exposure of contaminants to ecological and human receptors. ■

(Continued from page 32)

breakdown of coal. The primary contaminants of concern at the site are carcinogenic polycyclic aromatic hydrocarbons, volatile organics and metals. The surface and subsurface soil media have been significantly contaminated from the waste product created from the coal gasification process. The property has been selected by the Maryland Department of General Services (DGS) as the site for the construction of a State Service Center and has been promoted by Governor Glendening as an excellent example of implementing the Smart Growth program.

The following sites had Step-Two site assessments conducted during 2000. An update of significant findings from these assessments are provided below:

DWYER PROPERTY - Located in Cecil County, the Dwyer site was investigated previously and found to be contaminated by chlorinated solvents. Additional investigation is needed to determine the extent of contamination and the need for remediation. The property, which was formerly used as a munitions plant, may have additional sources of contamination that will need to be identified before the site can be put back to productive use.

SKIPJACK CHEMICAL - This former chemical mixing operation, located in the town of Denton, was abandoned after the owner died. The site has been the subject of two EPA removal actions over the years. Groundwater contamination, identified during a previous State investigation, needs to be characterized and, if necessary, remediated. MDE has completed the initial assessment and determined that the groundwater contamination plume extends off-site but is not currently impacting any domestic wells. A remedial assessment still needs to be completed.

MONTGOMERY BROTHERS DUMP - Located in Cecil County, this site was the subject of a major removal by the

(Continued on page 34)



Field screening test kits and a geoprobe equipped with a gas chromatograph (Membrane Interface Probe System, or MIPS) were used to delineate this plume. Using such innovative technologies can be more economical in the long run and expedite the environmental investigation process.

State and EPA in the early 1980s. An agreement with the responsible parties left the State in charge of future monitoring. Currently, MDE is conducting a review of the site to ensure that the site cap and monitoring system is still protective of human health and the environment.

BLUE CHIP PRODUCTS - This site became the property of the Town of Elkton when the current owner decided to abandon his interest in the property. MDE is currently preparing a work plan to assess the extent of the known groundwater contamination at the site. When completed, the study will determine the need for future remediation.

THURMONT WELL # 7 - After chlorinated solvents contaminated a major supply well in the Town of Thurmont, MDE began an investigation to attempt to identify the source and extent of contamination. Additional investigation is planned to focus on the potential source and determine the magnitude of the problem.

SMUCK DUMP - A former unregulated dump located in Baltimore County, the Smuck property, now owned by the State, has been the subject of a previous removal after drums of chemicals were uncovered at the site. Future investigation will determine if the site remains a source of contamination that requires remediation.

Better Buildings Warehouse, Heath Street Baltimore

By Peggy Smith

When a Baltimore community voiced its concerns in June, 2000 that the mishandling of hazardous wastes at an old warehouse in their neighborhood may have exposed children to toxic chemicals, the Site and Brownfields Assessments/State Superfund Division (State Superfund) was able to allay the public's fears by implementing sampling activities and providing analytical information in a straightforward manner.

Working closely with MDE's Emergency Response Division (ERD), personnel from the State



View of warehouse near railroad tracks.

Superfund Division collected soil samples to identify chemicals that leaked from the plant and sent a number of residents to the hospital for observation after they were exposed. After the samples were analyzed, MDE participated in public



Sampling activities at the Better Buildings Warehouse located on Heath Street in Baltimore City.

meetings to inform nearby residents of the chemicals found.

The State Superfund Division concluded that there was little or no lingering risk posed by the soils at the site. Once the investigation was completed, the site was referred to the Oil Control Program to address the remaining petroleum issues. ■

For more information about the ERRP or specific projects, please contact:

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Waste Management Administration
Maryland Department of the Environment**

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APPENDIX I

Maryland's Federal Facilities Currently Under Investigation

FACILITY NAME		ACREAGE	NUMBER OF SITES	SITE ACREAGE
Federal Facilities Section				
Adelphi Lab		207	2	5
Andrews AFB	NPL	4308	18	262.5
Aberdeen Area	NPL	27000	65	134
Bush River	NPL	500	34	96.4
Canal Creek	NPL	700	58	692.2
Carroll Island	NPL	855	26	323.8
Graces Quarters	NPL	476	18	68.2
J-Field	NPL	460	16	57.7
Lauderick Creek	NPL	1500	58	70.4
O-Field	NPL	260	2	49.5
Other Edgewood Areas	NPL	4400	80	306.2
Westwood	NPL	523	19	106.1
Granite Former Nike site	Non-FUDS		1	16.5
Fort Detrick		1230	3	1210
Fort Meade	Non-BRAC portion/NPL	4600	6	164
Martin State AP ANG		175	5	2.5
NSWC-Indian Head	NPL	3600	67	202.4
Patuxent River NAS	NPL	6800	53	369.5
Phoenix Former Nike site		17	1	17
Subtotal			532	4153.9
BRAC Facilities				
Fort Holabird	BRAC	20.5	3	20.5
Fort Meade	BRAC portion/ NPL	9000 (8100 acres already transferred)	8	900
Fort Ritchie	BRAC	638	11	632
NSWC-Annapolis	BRAC	67.8	9	67.8
NSWC-White Oak	BRAC	662	46	662
Subtotal			77	2282.3
FUDS				
BA-30/31 Former Nike site	FUDS	22	1	22
W-35 Former Nike site	FUDS	13.95	1	14
W-44 Former Nike site	FUDS	16.5	1	16.5
Subtotal			3	52.5

July 2001 ERRP Annual Report
Appendix I – Maryland’s Federal Facilities Currently Under Investigation

FACILITY NAME		ACREAGE	NUMBER OF SITES	SITE ACREAGE
NPL				
Central Chemical	NPL	19	1	19
Galaxy/Spectron	NPL	5	1	5
Kane & Lombard	NPL	25.092	3	25.092
Woodlawn Landfill	NPL	21	1	21
Ordnance Products	NPL	95	1	95
Bush Valley Landfill	NPL	29	1	18
Southern Maryland Wood Treating	NPL	96	1	27.5
MD Sand Gravel & Stone	NPL	150	1	45
Subtotal			10	255.592
Federal Facilities				4153.9
FUDS				52.5
NPL				<u>255.592</u>
TOTAL				4461.992
TOTAL BRAC				2282.3

APPENDIX II

Voluntary Cleanup Program Property Statistics

June 21, 2001

Properties Completed

Properties issued a No Further Requirements Determination	30
Properties issued a Certificate of Completion	8

Cleanups

Response action plans approved	14
Response action plans pending	4

Properties

Number of properties for which applications have been received	82
➤ Properties for which applications received in FY97.....	6
➤ Properties for which applications received in FY98	20
➤ Properties for which applications received in FY99	18
➤ Properties for which applications received in FY00	19
➤ Properties for which applications received to date in FY01	19
Properties accepted into the Program to date	58
➤ Properties with one or more applicant(s) eligible as inculpable person(s).....	23
➤ Properties with one applicant eligible as responsible person	22
➤ Properties with two or more eligible applicants (inculpable and responsible persons)	12
Properties for which applications have been received but acceptance into the Program is pending (application packages incomplete or additional information requested to complete the application package)	20
Properties for which the application has been withdrawn	4

Voluntary Cleanup Program Application Statistics

Applications

Applications submitted for participation	109
Applications approved as eligible	78
Applications pending	22
Applications determined not eligible	0
Applications withdrawn	6

Cleanups

Response action plans approved	14
Response action plans denied	0

Public informational meetings held for proposed response action plans	8
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**Properties for Which Applications Have Been Submitted
to the Voluntary Cleanup Program**

June 21, 2001

Baltimore City:

1) Parker Metal Decorating Company	0.73 acre	NFRD
2) American Can Company	4.3 acres	COC
3) Port Liberty Industrial Center (3 applicants)	23.84 acres	COC
4) Barre Station (2 applicants)	8.6 acres	
5) Baltimore Camden Yards (2 applicants)	5.0 acres	COC
6) Kurt Iron & Metal	10.44 acres	
7) Point Breeze Business Center (Application A)	54.34 acres	NFRD
8) Point Breeze Business Center (Application B)	15.69 acres	NFRD
9) Point Breeze Business Center (Application C)	14.0 acres	NFRD
10) Windsor Terminal (Inland Leidy, Inc.)	1.0 acres	
11) 1600-1606 Bush Street	0.42 acres	NFRD
12) Former Esskay Plant (2 applicants)	12.7 acres	NFRD
13) Pt. Breeze Bus. Ctr. (Parcel D Lot 1A) (2 applicants)	5.58 acres	
14) Pt. Breeze Bus. Ctr. (Parcel D Lot 3) (2 applicants)	7.38 acres	NFRD
15) Pt. Breeze Bus. Ctr. (Parcel C Lot 3) (2 applicants)	12.66 acres	
16) Proctor & Gamble Soap Manufacturing	13.00 acres	NFRD
17) Crown Simplimatic, Inc.	13.56 acres	NFRD
18) Kirk-Stieff Silver Building	2.52 acres	NFRD
19) 2110 Haines Street	3.1 acres	
20) Montgomery Park Business Center	27.5 acres	NFRD
21) Westport Junction Depot (2 applicants)	2.85 acres	
22) Valspar Baltimore Plant (2 applicants)	2.65 acres	
23) National Bohemian Brewery	1.29 acres	
24) 801 S. Caroline Street (3 applicants)	1.27 acres	NFRD
25) Port Covington	58.73 acres	
26) 1400 Eastern Avenue	0.59 acres	
27) Constellation	5.93 acres	
28) 1301 South Conkling Street	1.0 acre	NFRD
29) 3601-3607 O'Donnell Street	2.0 acres	NFRD

July 2001 ERRP Annual Report
Appendix II – VCP Property Statistics

30) Former Chesapeake Paperboard Company	9.3 acres
31) Bohager Properties (2 applicants)	1.89 acres
<i>Subtotal</i>	323.86 acres

**Properties for Which Applications Have Been Submitted
to the Voluntary Cleanup Program** *(continued)*

Allegany County:

1) CSX Bolt and Forge Property (<i>2 applicants</i>)	33.0 acres	COC*
2) Country Club Mall	64.4 acres	NFRD
3) PPG Property (<i>2 applicants</i>)	150.0 acres	NFRD**
<i>Subtotal</i>	247.4 acres	

*Certificate of Completion issued for a 11.4566-acre portion of the property.

**No Further Requirements Determination issued for a 25-acre portion of the property.

Anne Arundel County:

1) Baymeadow Property	11.95 acres	NFRD
2) The Hardaway Company	9.2 acres	
3) Kop-Flex Property	25.0 acres	
4) Cromwell Fields Shopping Center	20.53 acres	
5) Cleaning by Riley	1.37 acres	
<i>Subtotal</i>	68.05 acres	

Baltimore County:

1) Redland Genstar, White Marsh Plant (<i>5 applicants</i>)	103.9 acres	
2) Yorktowne Plaza Shopping Center	10.5 acres	NFRD
3) 40 West Auto Park	3.6 acres	NFRD
4) Har Sinai Property	17.6 acres	COC
5) Arcade Building	22.1 acres	COC
6) Texas Maintenance Yard	11.2 acres	NFRD
7) Former Bausch & Lomb Diecraft Plant	27.9 acres	
8) Baltimore Goodwill Industries	3.9 acres	NFRD
<i>Subtotal</i>	200.7 acres	

Carroll County:

Carrolltown Center (<i>2 applicants</i>)	31.78 acres	
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*July 2001 ERRP Annual Report
Appendix II – VCP Property Statistics*

Cecil County:

Occidental Chemical Corporation	125.65 acres	NFRD
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Dorchester County:

Eastern Shore Hospital Center (3 applicants)	351.0 acres	COC
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Frederick County:

Schroyer’s Recycling Center	5.85 acres	
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Harford County:

Washington Court	28.86 acres	
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Howard County:

1) PATS, Inc.	2.70 acres	NFRD
2) Cemetery Lane West	30.90 acres	

<i>Subtotal</i>	33.60 acres	
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Montgomery County:

1) 5221 River Road	2.3 acres	NFRD
2) 5450 Butler Road (2 applicants)	2.78 acres	NFRD
3) Former Maryland Wood Preserving	2.11 acres	NFRD
4) Silver Spring Redevelopment Project (2 applicants)	2.42 acres	
5) Former Bell Cleaners	0.95 acre	
6) Rockville Post Office	0.63 acre	
7) Rockville Metro Plaza	3.5 acres	
8) Briggs Chaney Plaza	18.16 acres	
9) Seven Locks Plaza	14.95 acres	
10) Former Kodak Processing Plant (2 applicants)	10.28 acres	
11) 19609 Frederick Road	1.4 acres	

<i>Subtotal</i>	59.48 acres	
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Prince George’s County:

1) Beltsville Industrial Center	0.8 acre	
2) Riverdale Plaza Shopping Center	11.0 acres	NFRD
3) Hyattsville Former Manufactured Gas Plant	13.0 acres	

July 2001 ERRP Annual Report
Appendix II – VCP Property Statistics

4) Laurel Building Supply	1.98 acres	NFRD
5) Oxon Hill Plaza	11.43 acres	
6) Olde Forte Village Shopping Center	16.0 acres	NFRD
7) Laurel Shopping Center	26.48 acres	
8) Silver Hill Plaza	10.75 acres	
9) Central Hampton Business Park	6.0 acres	
10) Lanham Center	0.82 acres	
11) Mini Shopping Center	1.76 acres	

Subtotal 100.02 acres

Washington County:

Engineering Polymer Solutions Property 8.5 acres COC

Wicomico County:

Wawa Food Market 1.9 acres NFRD

TOTAL 1,586.65 acres

NFRD = No Further Requirements Determination issued

COC = Certificate of Completion issued

NOTE: Unless otherwise indicated, each listing represents one applicant for the property.

APPENDIX III

The following list of sites corresponds to the map on page 31 titled,
"State Superfund Division: 3-Step Process State Master List Sites"

State Remedial Investigations 2000-2001

<i>County</i>	<i>MD No.</i>	<i>Site Name</i>	<i>City</i>
<i>BALTIMORE</i>	MD-080	SMUCK DUMP	LANDSTOWN
	MD-380	CUTRONICS	TIMONIUM
<i>BALTIMORE CITY</i>	MD-118	M & T CHEMICAL	BALTIMORE
	MD-119	MRI	BALTIMORE
	MD-106	ARMCO STEEL	BALTIMORE
<i>CAROLINE</i>	MD-416	SKIPJACK CHEMICALS	DINTON
<i>CECIL</i>	N/A	BLUE CHIP PRODUCTS	ELKTON
	MD-313	DWYER PROPERTY	ELKTON
<i>MONTGOMERY</i>	MD-360	VECTROL / BEACH BROS.	ROCKVILLE
<i>WASHINGTON</i>	MD-036	KOPPERS / CSX	HAGERSTOWN
<i>WICOMICO</i>	MD-093	CHEVRON	HAGERSTOWN

Site Surveys Conducted 1999-2000

<i>County</i>	<i>MD No.</i>	<i>Site Name</i>	<i>City</i>
<i>ALLEGANY</i>	MD-003	CABIN RUN LANDFILL	FROSTBURG
	MD-004	HOFFMAN LANDFILL	FROSTBURG
	MD-005	VALE SUMMIT LANDFILL	FROSTBURG
	MD-197	FROSTBURG GAS LIGHT CO	FROSTBURG
	MD-339	PRECISE METALS AND	CUMBERLAND
<i>ANNE ARUNDEL</i>	MD-073	JOY RECLAMATION CO	GLEN BURNIE
	MD-081	MIDDLETOWN ROAD DUMP	ANNAPOLIS
	MD-192	WOODS ROAD SITE	ANNAPOLIS
	MD-201	SNOW HILL LANE SITE	BROOKLYN
	MD-204	DAVID TAYLOR/ANNAPOLIS -	ANNAPOLIS
	MD-205	DAVIDSONVILLE - LAUNCH	DAVIDSONVILLE
	MD-206	DAVIDSONVILLE - CONTROL	DAVIDSONVILLE
	MD-408	DRUM CO DRUM DUMP	BROOKLYN
	MD-452	A S PEARMON	ARNOLD
<i>BALTIMORE CITY</i>	MD-014	OLIN CORP CURTIS BAY	BALTIMORE
	MD-019	BROWNING FERRIS IND	BALTIMORE
	MD-020	REEDBIRD LANDFILL	BALTIMORE
	MD-021	KOPPERS CO BALTIMORE	BALTIMORE
	MD-055	PEMCO CORP	BALTIMORE
	MD-092	MONUMENT ST LANDFILL	BALTIMORE
	MD-105	AMOCO OIL CO	BALTIMORE
	MD-106	ARMCO BALTIMORE WKS	BALTIMORE
	MD-109	CONOCO CHEMICAL CO	BALTIMORE
	MD-110	CONOCO INC BALTIMORE	BALTIMORE

MD-112	CROWN CENTRAL	BALTIMORE
MD-113	CROWN CENTRAL	BALTIMORE
MD-114	ESTECH GENERAL CHEM	BALTIMORE
MD-118	M & T CHEM INC	BALTIMORE
MD-119	MRI CORPORATION	BALTIMORE
MD-131	TEXACO INC	BALTIMORE
MD-140	ANCHOR HOCKING CORP	BALTIMORE
MD-143	CHEVRON USA/ BALTIMORE	BALTIMORE
MD-154	BOWLEY'S LANE LANDFILL	BALTIMORE
MD-233	HIGHLAND TOWN GAS	BALTIMORE
MD-244	SMITH F BOWIE & SON INC	BALTIMORE
MD-312	STIEGAL SUPPLY &	BALTIMORE
MD-431	KOPPER CO INC - METAL	BALTIMORE

BALTIMORE

MD-069	BALTIMORE GALVANIZING	ROSEDALE
MD-080	SMUCK DUMP	HALETHORPE
MD-157	U S ARMY PHOENIX -	JACKSONVILLE
MD-172	MARTIN MARIETTA CORP	RELAY
MD-175	BATAVIA LANDFILL	ROSEDALE
MD-181	SAUER DUMP	NORTH POINT
MD-280	J AND L INDUSTRIES INC	CHASE
MD-297	BAUER FARM	EDGEMERE
MD-304	MARTIN'S STATE AIRPORT	MIDDLE RIVER
MD-316	GIBSON HOMANS	ROSEDALE
MD-380	CUTRONICS	TIMONIUM
MD-463	NATIONAL CIRCUITS INC -	TOWSON
MD-464	NATIONAL CIRCUITS INC -	TIMONIUM
MD-471	MORGAN STATE	BALTIMORE

CAROLINE

MD-240	RELIANCE WOOD	FEDERALSBURG
MD-438	OLD WEST DENTON DUMP	DENTON

CARROLL

MD-167	POWRMATIC INC	FINKSBURG
MD-190	CRANBERRY RUN SUB	WESTMINSTER
MD-307	WOLF HILL	HAMPSTEAD
MD-332	MIL SPEC FASTENERS	HAMPSTEAD
MD-333	BACHMANS VALLEY	MANCHESTER
MD-345	3M NATIONAL ADVER -	WESTMINSTER
MD-371	LANG'S JUNKYARD	HAMPSTEAD
MD-467	BACHMAN VALLEY	MANCHESTER

CECIL

MD-074	OLD ELKTON DUMP	ELKTON
MD-099	STAUFFER CHEM CO	ELKTON
MD-137	MONTGOMERY BROTHERS	NORTHEAST
MD-189	MALMO FARMS	CHESAPEAKE CITY
MD-254	IRON HILL ROAD DRUM SITE	ELKTON
MD-259	LOUISA LANE DUMPSITE	CHARLESTOWN
MD-313	DWYER PROPERTY	ELKTON
MD-314	CROUSE BROTHERS	ELKTON
MD-318	CHILDS PROPERTY	CHILDS
MD-325	CENTRAL CHEMICAL	ELKTON
MD-366	VICON PROPERTY	ELKTON
MD-369	REEVES SITE	ELKTON
MD-372	IP INC	ELKTON
MD-385	BIG ELK CHAPEL ROAD	PROVIDENCE
MD-433	ELKTON FARM	ELKTON
MD-451	STEMMERS RUN	EARLEVILLE

CHARLES

MD-261	CHARLES COUNTY	PISGAH
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DORCHESTER

MD-025	CAMBRIDGE SITE	CAMBRIDGE
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FREDERICK

MD-356	FREDERICK TOOL AND DIE	FREDERICK
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GARRETT

MD-239	WOOD PRODUCTS	OAKLAND
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	MD-441	UMBELL PROPERTY	FRIENDSVILLE
HARFORD	MD-001	ABERDEEN DUMP	ABERDEEN
	MD-037	HAVRE DE GRACE DUMP	HAVRE DE GRACE
	MD-038	MULLINS LANDFILL	HAVRE DE GRACE
	MD-162	HAVRE DE GRACE PLANT	HAVRE DE GRACE
	MD-301	ABINGDON LANDFILL	ABINGDON
	MD-363	LONGS SEPTIC	HAVRE DE GRACE
HOWARD	MD-262	SCOVITCH PROPERTY	LAUREL
	MD-305	CEMETARY LANE	ELKRIDGE
	MD-326	WESTVACO CORPORATION	LAUREL
	MD-373	TATE ACCESS FLOORS INC	JESSUP
	MD-465	MAYFIELD REPAIR FACILITY	ELKRIDGE
KENT	MD-029	CHESTERTOWN MUN DUMP	CHESTERTOWN
	MD-138	LAURENCE J NICHOLSON	CHESTERTOWN
	MD-198	CHESTERTOWN GAS CO	CHESTERTOWN
MONTGOMERY	MD-144	MARYLAND WOOD	ROCKVILLE
	MD-306	KENNETH SHUMAKER DUMP	BARNESVILLE
	MD-360	VECTROL INC	ROCKVILLE
	MD-361	MICRODYNE CORP	ROCKVILLE
PRINCE GEORGE'S	MD-024	ANACOSTIA RIVER PARK	BLADENSBURG
	MD-040	KOPPERS CO DUMPSITE	LAUREL
	MD-108	CAPITOL WIRE & FENCE	HYATTSVILLE
	MD-171	OLD FORT ROAD SITE	FORT WASHINGTON
	MD-182	CONTEE SAND & GRAVEL	BELTSVILLE
	MD-183	LAUREL CITY LANDFILL	LAUREL
	MD-200	HYATTSVILLE GAS &	EDMONSTON
	MD-248	UNITED RIGGING & HAULING	BELTSVILLE
	MD-251	COLUMBIA PARK DRUM SITE	COLUMBIA PARK
	MD-291	J L CLARK MFG CO STONE	COLLEGE PARK
	MD-295	CELIA LUST	BELTSVILLE
	MD-311	LONDON HILLS	CAPITOL HEIGHTS
	MD-355	NELSON PERRIE DUMP	BALD EAGLE
	MD-470	PAINT BRUSH LF AREA #3	COLLEGE PARK
SOMESET	MD-111	CRISFIELD CITY DUMP	CRISFIELD
	MD-129	RING LANDFILL	WESTOVER
	MD-130	WESTOVER LANDFILL	WESTOVER
	MD-193	CRISFIELD LIGHT & POWER	CRISFIELD
ST. MARY'S	MD-101	THIOKOL CORP	MECHANICSVILLE
	MD-185	CALIFORNIA DRUM SITE	CALIFORNIA
	MD-252	ST MARY'S SALVAGE	HOLLYWOOD
TALBOT	MD-125	NOBLE MOTOR REBUILDERS	EASTON
WASHINGTON	MD-036	KOPPERS CO	HAGERSTOWN
	MD-194	HAGERSTOWN - AMERICAN	HAGERSTOWN
	MD-329	NEWELL ENTERPRISES INC	HAGERSTOWN
	MD-418	WEST MANUFACTURING	HAGERSTOWN
	MD-475	FRANKLIN SPICKLER	MAUGANSVILLE
WICOMICO	MD-093	CHEVRON CHEM CO -	SALISBURY
	MD-275	DRESSER INDUSTRIES	SALISBURY
	MD-300	BLACKWATER SOLID	SALISBURY
	MD-327	SALISBURY MARKETING INC	SALISBURY
WORCESTER	MD-083	BISHOP PROCESSING CO	BISHOP