

# ALLEGANY BALLISTICS LABORATORY

## ROCKET CENTER, WEST VIRGINIA



**Engineering Field Division/Activity:** LANTDIV  
**Major Claimant:** COMNAVSEASYSOM  
**Size:** 1,628 Acres (1,572 Acres Navy-Owned)  
**Funding to Date:** \$5,018,000  
**Estimated Funding to Complete:** \$35,493,000

**Base Mission:** Government-Owned Contractor-Owned (GOCO) research, development and production facility for solid propellant rocket motors for the Department of Defense and NASA

**Contaminants:** Volatile and semi-volatile organic compounds, explosive compounds, silver, acetone

Number of Sites:		Relative Risk Ranking of Sites:			
<b>CERCLA:</b>	12	<b>High:</b>	15	<b>Not Evaluated:</b>	5
<b>RCRA Corrective Action:</b>	25	<b>Medium:</b>	1	<b>Not Required:</b>	16
<b>RCRA UST:</b>	0	<b>Low:</b>	0		
<b>Total Sites:</b>	37				



**Sites Response Complete: 16**

### EXECUTIVE SUMMARY

Allegany Ballistics Laboratory (ABL) is located at Rocket Center, Mineral County, West Virginia, about ten miles southwest of Cumberland, Maryland. ABL is a Government-Owned, Contractor-Operated (GOCO) facility. The contractor, Alliant Techsystems Inc., formerly Hercules Aerospace Corporation, has operated the facility since 1945. ABL has two separate facilities: Plant 1 (1,572 acres), owned by the Navy and operated by Alliant, and Plant 2 (56 acres), owned and operated by Alliant. ABL is primarily a research, development and production facility for solid propellant rocket motors. Chlorinated solvents have been found in the soil and groundwater, with trichloroethene the most prevalent. Lead, zinc, RDX, 2,4,6-TNT, VOCs, methylene chloride, acetone, silver, nickel, DNT, beryllium and mercury were also detected. Current operations include pollution prevention technologies to prevent further contamination. ABL was placed on the National Priorities List (NPL) in May 1994. Remediation efforts are proceeding through cooperative arrangements with the regulatory community and the general public via the Restoration Advisory Board (RAB).

ABL is bordered on the north and west by the North Branch of the Potomac River. The eastern and southern boundaries of ABL lie in mountainous terrain. The property to the west of ABL is primarily bottom land and is used for raising crops. A small residential area and some woodlands lie directly north of ABL and are separated from ABL by the River and a railroad right of way. Additional cropland exists on the bottom land northeast of ABL. The area to the east and south of ABL is primarily mountainous woodland, although some cropland and livestock grazing pastures exist in this area. There are two abandoned limestone quarries east of ABL. Surface waters at ABL consist of several unnamed intermittent streams that discharge directly to the River. Piezometric-surface contour maps indicate the groundwater flow direction in the bottom land area to be toward the River. Any contaminants present at the surface at ABL could migrate off the installation to the River via surface pathways. The developed area of ABL is nearly level bottom land with some portions

lying in the flood plain of the River, while the remainder of the installation is characterized by heavily forested steep rocky slopes. There are no active potable water wells located in the bottom land, however there are five active wells located in the undeveloped upland area.

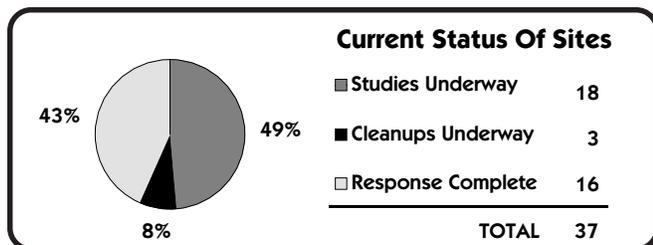
A Technical Review Committee (TRC) was established in FY89 and a Community Relations Plan (CRP) was revised in May, 1994. The installation conducted several meetings with active involvement from community members. In FY94 the RAB was formed.

The Initial Assessment Survey (IAS) identified ten (10) sites in 1983 and recommended further investigation at Sites 1 through 6 with recommendations to monitor numerous potable water wells. Two (2) additional CERCLA sites have been identified since then. The Navy has completed RI/FSs for: Site 1 groundwater; Sites 2, 3 and 4; and Site 5 landfill contents and soil. The Navy will complete a Focused FS for Sites 1 and 10 soils; and for Site 5 groundwater, both in FY97. The Navy will complete a Remedial Investigation for Site 11 in FY97 and issue the Focused Feasibility Report for Site 10 groundwater in early FY97.

One site, Site 7 Beryllium Landfill, is currently in the Cleanup phase. A removal action to remove contaminated soil began and all excavated material, temporarily placed in roll-off bins, has been segregated and characterized awaiting disposal. Sites 6, 8 and 9, recommended for no further action in the IAS, are Response Complete (RC).

A RCRA Facility Investigation, completed August, 1993, identified 50 Solid Waste Management Units (SWMUs) and 12 Areas of Concern (AOCs). By elimination through record review or due to program overlap, 40 SWMUs and AOCs (total) required field verification in FY96 and, of these, 12 will be subject to further investigation scheduled to complete in FY97.

The IRP at ABL continues to benefit from cooperation between the EPA Region III, the States of Maryland and West Virginia, Naval Sea Systems Command and the community. Discussions focus on completed or proposed work in an attempt to streamline the review and comment process. Results are immediately shared with all stakeholders so informed discussions can readily be made.



## ALLEGANY BALLISTICS LAB RELEVANT ISSUES

### ENVIRONMENTAL RISK



**HYDROGEOLOGY** - ABL is bordered on the north and west by the North Branch of the Potomac River, which is designated Class I Water by the State of Maryland. The developed area is nearly level bottom land with portions lying in the flood plain of the river, while the remainder of the installation is characterized by heavily forested, steep rocky slopes. ABL is underlain by a thick sequence of sedimentary rocks, predominantly limestone. Bedrock crops out or is covered by a thin veneer of soil over most of the undeveloped, mountainous portion of the installation and alluvial sediments overlie the bedrock in the developed bottom land area. The limestone underlying ABL function as aquifers and depth to groundwater is variable in the undeveloped upland area and is less than ten feet in the bottom land area. Surface waters at ABL consist of several unnamed intermittent streams that discharge directly to the river. Stormwater runoff from the developed area of ABL is collected by a system of ditches and culverts that discharge to the river. Groundwater flow direction in the bottom land area is predominantly toward the river. Any contamination at or near the surface in the developed area would be at a higher elevation than the bottoms of the potable supply wells in the undeveloped area. Any contaminants present at the surface at ABL could migrate off the installation to the River via surface pathways.



**NATURAL RESOURCES** - There are 11 plant and three animal species considered rare, threatened or endangered in Mineral County; none have been observed to date on ABL property.



**RISK** - A Baseline Risk Assessment, both ecological and human health, has been completed for Sites 1-5 and 10 following the EPA guidance. For the DOD Relative Risk Ranking System, 15 sites were ranked as "high". The high-ranked sites were so ranked primarily due to high concentrations of contaminants of concern, numerous evident pathways and numerous evident receptors both human and ecological. The Agency for Toxic Substance and Disease Register (ATSDR) completed a Site Summary for ABL in March 1995. The Public Health Assessment was conducted in May 1994.

Site 1 poses the greatest risk to human health and the environment and includes potentially exposed receptor populations of on-site workers, current and future recreational users, potential future residents and potential future construction workers. Contaminants of potential concern are primarily volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), dioxins, explosives and inorganics with the most pertinent potential pathways involving surface and subsurface soil and groundwater. Despite relatively high detection of VOCs in the nearby river sediments, the results of a macroinvertebrate survey performed did not indicate an impaired benthic community compared with the background sample.

### REGULATORY ISSUES



**NATIONAL PRIORITIES LIST** - ABL was placed on the National Priorities List (NPL) on 31 May 1994 with a Hazard Ranking System score (HRS) score of 50.00 based on the groundwater pathway only.



**LEGAL AGREEMENTS** - A draft Federal Facility Agreement (FFA) was submitted to Assistant Secretary of the Navy (ASN) for signature in late FY95. Revised language regarding funding has been incorporated and the revision is currently under review by both the State of West Virginia and EPA R-III. The final version will be submitted for signature in FY97.



**PARTNERING** - Formal partnering with the regulatory community and facility representatives was initiated in January 1995. While improved, the Project Team continues to develop and refine their skills at resolving differences and arriving at equitable solutions. An aggressive program and demanding schedules necessitates that the Team become more effective and efficient, develop greater trust, establish and endorse common goals and improve communication. Project Managers meetings, at a minimum held every other month in conjunction with Restoration Advisory Board (RAB) meetings, focus on immediate concerns and impending tasks. By identifying and accepting individual responsibilities, priorities are established to attain common goals.

### COMMUNITY INVOLVEMENT



**RESTORATION ADVISORY BOARD** - A Technical Review Committee (TRC) was established in 1989 and was converted to a Restoration Advisory Board (RAB). The RAB was officially formed in June 1995 and has become a valuable asset to the remediation efforts at ABL. Comprised of approximately 25 members, the RAB is involved in the review of technical documents, providing community input and relaying the progress of the Installation Restoration Program (IRP). The community has been very supportive of our efforts and has expressed great interest in future projects.



**COMMUNITY RELATIONS PLAN** - The Community Relations Plan (CRP) was first drafted in 1993 and finalized in May 1994. The Plan will be revised in FY97 to support the anticipated signing of three RODs.



**INFORMATION REPOSITORY** - The Administrative Record was established on 27 July 1994 and Information Repositories were established at LaVale Public Library in Maryland and Fort Ashby Public Library on 27 July 1994. Copies of Administrative Record documents are maintained for public access in the Information Repositories.

## HISTORICAL PROGRESS

### FY83

**Sites (1, 2, 3, 4A, 4B, 5, 6, 7, 8 and 9)** - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed in January 1983. It identified ten potentially contaminated, Three of the sites (Sites 6, 8 and 9) did not pose a threat to human health or the environment and did not require any further action. The remaining seven sites were recommended for further investigation. The IAS also recommended continued groundwater monitoring at Potable Water Wells A and C (Site 10).

### FY86

**Sites 1-7 and 10** - The Confirmation Study Report, completed in June 1986, recommended further study. The Confirmation Study was expanded into an Interim Remedial Investigation (IRI).

### FY90

**Sites 1, 2, 3, 4B, 5, 7 and 10** - The IRI Report, completed October 1989, recommended no further investigation at Sites 4A and 6 because insignificant levels of contaminants were found. The report recommended further investigation. The report also noted that no specific source was identified for the Volatile Organic Compound (VOC) contamination in the groundwater at Sites 2 and 3.

### FY92

**Sites 1, 2, 3, 5, 7 and 10** - The Draft RI Report was completed in October 1992. Comments were received from the EPA Region III in January 1993. EPA R-III accepted the responses to comments in November 1995, changes were incorporated and the Final RI Report was issued in January 1996.

## ALLEGANY BALLISTICS LAB HISTORICAL PROGRESS

### FY93

**SWMUs and AOCs** - EPA R-III completed the Phase II RCRA Facility Assessment (RFA) for ABL in August 1993. The RFA identified 49 Solid Waste Management Units (SWMUs) and 12 Areas of Concern (AOCs), however, several "SWMUs" were comprised of numerous individual similar sites (e.g., SWMU 22 is actually 22A-22D and is comprised of 4 separate incinerators). The total count is 119 SWMUs and 12 AOCs. Of these, the EPA recommended 61 for further action.

### FY94

**Site 1** - Initiated the Focused RI for all media.  
**Sites 2, 3, 4B, 5 and 10** - Initiated the Phase II RI for all media.  
**Site 7** - Completed the construction investigation by excavating the landfill contents. The Navy determined the best method for disposal would be to segregate the approximately 35 cubic yards of material into separate waste streams and initiated the Soil Segregation Workplan.

### FY95

**Site 1** - Completed and issued the Final Focused RI Report in August 1995 and the Draft Focused FS Report in September 1995. The focused RI

Report included a human health and ecological Risk Assessment. The Focused FS Report addressed contamination in all media.

**Sites 2, 3, 5, 10, 40 and 41** - Issued the Draft Phase II RI Report in June, 1995. The Phase II RI Report included a human health and ecological Risk Assessment for all sites.

**Site 7** - Issued the draft Soil Segregation Workplan.

**Site 11** - During building construction, Potable Water Well "F" was discovered. Further soil and groundwater investigation revealed contamination.

**SWMUs and AOCs** - After performing a site visit at the SWMUs and AOCs identified in the RFA, the EPA Region III and the State of West Virginia recommended further action at 31 additional, previously identified SWMUs. Through research, literature review and on-site fact finding, the list was reduced to a total of 40 that would require further action. Initiated the RCRA Facility Investigation (RFI) for 40 SWMUs: 21, 22A, 22B, 22C, 22D, 23, 24E, 24J, 24R, 24V, 26, 27A, 34, 36, 37A, 37B, 37C, 37D, 37E, 37F, 37G, 37H, 37I, 37J, 37K, 37L, 37M, 37N, 37O, 37P, 37S, 37T, 37U, 40, 52, 58, AOC B (Site 10002), AOC J (Site 10006), AOC K (Site 10007) and AOC L (Site 10008).

## PROGRESS DURING FISCAL YEAR 1996

### FY96

**Site 1** - In September 1996, completed and issued the Final Focused FS Report for Groundwater, Surface Water and Sediment. To better determine hydrogeologic conditions, conducted Remedial Design efforts including aquifer pump testing, geophysical logging, water sampling, groundwater modeling and three dimensional (3-D) seismic imaging. Initiated the Remedial Design (RD) for groundwater extraction system and treatment plant. Initiated the establishment of soil preliminary remediation goals and background concentrations.

**Sites 2, 3 and 40** - Completed and issued the Final Phase II RI Report in August 1996. Sites 2 and 3 do not require additional work and are considered Response Complete.

**Site 5** - Issued the Final Focused FS Report for Landfill Contents and Soil in August, 1996. Initiated RD for a presumptive remedy (RCRA Subtitle C Cap).

**Site 7** - Issued the Final Engineering Evaluation/Cost Analysis (EE/CA) in May, 1996; issued the Final Soil Segregation and Sampling Workplan in August, 1996; implemented the Workplan and completed soil and material segregation RA. An IRA was conducted to excavate and dispose of contaminated soil. This site is now considered Response Complete.

**Site 10** - Issued the Focused FS in November 1996.

**Site 11** - An Advanced Site Investigation (SI) Report, and the compilation of information gathered during the investigation, was completed in February 1996. Initiated an RI/FS with an anticipated completion date in FY98.

**SWMUs 34, 36 and 1002** - completed the RFI/CMS. SWMUs 36 and 1002 require no further action and are considered Response Complete.

## PLANS FOR FISCAL YEARS 1997 AND 1998

### FY97

**Sites 2, 3, 6, 8, 9, 40 and 41** - initiate no action ROD.  
**Site 5** - Sign the ROD for Landfill Contents and Soil, complete the RD and award the RA. Site is anticipated to be Response Complete.  
**Site 7** - Dispose of the segregated material, complete post-removal close-out; resolve the NOV.  
**SWMU 58** - Complete the RFA.  
**SWMUs 21-24, 26-27, 37, 40, 10001, 10007 and 10008** - Complete the RFI/CMS. SWMUs 21-23, 26, 37, 58, 10001, 10007 and 10008 are expected to become Response Complete.  
 Revise Community Relations Plan.

### FY98

**Site 1** - Initiate RD for soil.  
**Site 10** - Complete focused FS and sign ROD. Initiate RD for all media.  
**Site 11** - Issue and finalize the RI Report; initiate and complete the FS Report.

## ALLEGANY BALLISTICS LAB PROGRESS AND PLANS

<b>CERCLA</b>	<b>FY95 and before</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>	<b>FY02 and After</b>
<b>PA / SI</b>	11	1						
<b>RI / FS</b>	1	4	2	2				
<b>RD</b>			1	2	1			
<b>RAC</b>		1			2	1		1
<b>RAO</b>								3
<b>IRA</b>		1(1)			1(1)			
<b>RC</b>	3	3	1		2			3
<b>Cumulative % RC</b>	25%	50%	58%	58%	75%	75%	75%	100%
<b>RCRA CA</b>	<b>FY95 and before</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>	<b>FY02 and After</b>
<b>RFA</b>	24		1					
<b>RFI / CMS</b>	5	3	11			1		1
<b>DES</b>							1	
<b>CMI</b>							5	1
<b>CMO</b>								1
<b>IRA</b>						1(1)		
<b>RC</b>	8	2	9				4	2
<b>Cumulative % RC</b>	32%	40%	76%	76%	76%	76%	92%	100%

# SUGAR GROVE NAVAL SECURITY GROUP ACTIVITY

## SUGAR GROVE, WEST VIRGINIA



**Engineering Field Division/Activity:** LANTDIV  
**Major Claimant:** COMNAVSECGRU  
**Size:** 645 Acres  
**Funding to Date:** \$50,000  
**Estimated Funding to Complete:** \$0

**Base Mission:** Provides communication support for operations in the Atlantic Ocean  
**Contaminants:** Refuse, refuse with hazardous waste

<b>Number of Sites:</b>		<b>Relative Risk Ranking of Sites:</b>			
CERCLA:	3	High:	0	Not Evaluated:	0
RCRA Corrective Action:	0	Medium:	0	Not Required:	3
RCRA UST:	0	Low:	0		
Total Sites:	3				

**Sites Response Complete: 3**

### PROGRESS AND PLANS

CERCLA	FY95 and before	FY96	FY97	FY98	FY99	FY00	FY01	FY02 and After
PA / SI	3							
RI / FS								
RD								
RAC								
RAO								
IRA								
RC	3							
<b>Cumulative % RC</b>	100%	100%	100%	100%	100%	100%	100%	100%