

Region 3 GPRA Baseline RCRA Corrective Action Facility

Hercules Research Center

**500 Hercules Rd.
Wilmington, DE 19808-1599
Congressional District 1
EPA ID #: DED001315647
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Current Progress at the Site

EPA issued a RCRA Corrective Action permit July 2, 1991, and identified 16 Solid Waste Management Units (SWMUs) and four Areas of Concerns (AOCs) at the facility. The SWMUs and AOCs are units that require investigation to determine if corrective measures for cleanup are necessary. Delaware Department of Natural Resources and Environmental Control (DNREC) reissued the Corrective Action Permit on December 1, 2004, and is now the lead agency for Corrective Action at this facility

SWMU 9A is a former drum storage area, presently used for salvaged equipment storage. This regulated unit is located within a larger area, designated as SWMU 15. Sampling showed that the area was impacted by past releases from experimental pesticide formulation in a nearby building. Hercules completed investigations at SWMUs 9A and 15 as part of the Corrective Action permit. Soil sampling results of SWMUs 9A/15 showed soil contamination with pesticides, metals and volatile organic compounds, including chlorobenzene. Hercules excavated contaminated soil "hot spots" and capped the area with a low permeability asphalt cover. Groundwater samples indicated that soil contaminants did not impact the groundwater. SWMU 9A was closed under DNREC's Solid and Hazardous Waste Management Branch (SHWMB). In January 1999, DNREC issued the Closure Certification letter for SWMU 9A. Groundwater sampling is conducted semi-annually as part of Post Closure Care Monitoring.

Hercules completed a Corrective Measures Study for SWMU 8 and 9C, a former dump and drum storage area. Polychlorinated biphenyls (PCBs), pesticides and metals were found in soils and some sediments. EPA required additional sediment sampling to evaluate if the Red Clay Creek has been impacted by this SWMU. Sediment sample collection was completed in October 2000. The Red Clay Creek Sediment Sampling Report was submitted to EPA in March 2001. Based on the results presented in the report, DDT and DDD hotspots were detected in the downstream portion of the Red Clay Creek. EPA conducted limited confirmation sampling in these areas in September 2001. Results indicate that contaminants in Red Clay Creek may come from other upstream sources, and cannot be definitively linked to the Hercules site. To further delineate the extent of the environmental impacts at SWMU 8/9C, soil samples were collected in December 2008. DNREC is exploring remedy options for the former dump and drum area (SWMU 8/9C). Proposed remedy implementation tentatively scheduled for summer, 2009.

SWMU 6 was a RCRA regulated, greater-than-90-day container storage pad used for hazardous waste storage. The RCRA Pad includes the Small Container Shed and three smaller diked areas within the Pad; the smaller diked areas are designated for storage of corrosive, toxic, and reactive wastes. Hercules proposed to "clean close" the container storage area and, then to reuse the area for storage of less-than-90-day hazardous waste, as well as for continued storage of non-hazardous waste. The Closure Plan was approved August 2004. Closure activities commenced in June 2005 were completed December 2005. The RCRA Closure Certification was approved May 31, 2006.

Hercules completed a RCRA Facility Investigation at the other SMWUs and AOCs, and submitted a final report in July 2001. In June 2002, Hercules submitted a plan to conduct a Phase II RFI

Investigation to gather additional information. The Phase II Workplan was approved in November 2003, and field work began thereafter. The Phase II data will be used by DNREC to determine any risks to human health and remedial action at the other SWMUs and AOCs. The Phase II RFI Report was submitted to DNREC in 2007 and DNREC commented on the Report in 2008. Hercules is to respond.

In August 2007, Hercules successfully completed the Environmental Indicator for Migration of Contaminated Groundwater Under Control. Ground water monitoring at the site has shown stability and is representative of previous sampling results. The Environmental Indicator Forms, available on EPA's website (see Contacts) present the evaluation that current human exposure to site contaminants is under control and migration of contaminated ground water is under control.

Additional Progress at the Site

On August 12, 2005, at a meeting with Hercules Incorporated and DNREC/EPA representatives, Hercules' implementation of a Revitalization Plan was discussed. The Revitalization Plan entails the relocation of all operations from the floodplain area, consolidation of all operations/buildings uphill, and building of new pilot facilities and a powerhouse. The Agricultural Chemical Laboratory (ACL) also known as SWMU 16 was formerly an agricultural research and development center from 1953 to 1976 was also discussed. Consequently, Hercules compiled and submitted a report presenting a summary of existing data pertaining to the ACL. Included in the report was a conceptual corrective action work plan. Analytical results of soil and sediment samples collected at the ACL facility revealed that most of the analytes were either non-detect or present at concentrations below their levels for Delaware Uniform Risk-Based Remediation Standards for Unrestricted Use. The pesticide toxaphene and a few metals have exceeded these levels. Hercules has recently completed the demolition of the buildings/structures, removal of underground storage tanks (UST) and their appurtenances, and collection of post-excavation samples at the ACL. Hercules proposed to conduct additional sampling in the area to delineate the extent of the metals with elevated results. The Remedial Design for this SMWU has not been approved.

Site Description

The Hercules Research Center is located about five miles west of Wilmington, Delaware. The facility occupies approximately 45 acres, the majority of which has laboratory buildings used for development and research chemistry studies for Hercules' worldwide chemical operations. The facility is surrounded to the north, west and south by a Country Club. To the east is the Red Clay Creek and a small railroad operated by the Wilmington and Western Railroad.

Site Responsibility

RCRA Corrective Action activities at this facility are being conducted under the direction of the Delaware Department of Natural Resources and Environmental Control (DNREC).

Contaminants

The main contaminants in the soil, groundwater, sediments and surface water are PCBs, pesticides, chlorinated solvents and metals.

Community Interaction

EPA released public notices for public information about the remediation activities performed at Hercules. Currently there is public interest in a golf course that Hercules sold to Delaware National Golf Course. The golf courses are not subject to RCRA Corrective Action, however DNREC's Site Investigation and Restoration Branch is overseeing environmental work on the golf course. See www.awm.delaware.gov/Info/DelNationalHercules for more information.

Institutional Controls

No institutional controls are currently in place.

Government Contacts

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For more information about EPA's corrective action web page, including Environmental Indicators, please visit our site at: www.epa.gov/reg3wcmd/correctiveaction.htm

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