



Long-Term Stewardship Assessment Report

Cytec Aerospace Materials, Inc.

EPA ID #: MDD003075942

Harve de Grace, Maryland 21078

Assessment Date: June 20, 2018

Report Date: June 28, 2018

Introduction: Long-term potential stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the Environmental Protection Agency (EPA) Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e. ECs and ICs) and to update the community on the status of Resource Conservation and Recovery Act (RCRA) Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance to the final decision.

Site Background: The Cytec Aerospace Materials facility occupies an approximately 27-acre parcel located at 1300 Revolution Street in Havre de Grace, Maryland (Facility). The Facility began operations in 1962 as American Cyanamid which manufactured structural adhesives for the aerospace industry. Between 1981 and 1992, a portion of the Facility was used to manufacture honeycomb core used in conjunction with adhesives to form fuselage and wing components of aircraft. In 1993, American Cyanamid spun off its chemical operations to create Cytec Industries, Inc (Cytec). which included the Facility in Havre de Grace. In 2015, Cytec was acquired by Solvay and is now fully consolidated within Solvay. Currently Cytec produces specialty bonding adhesives, including modified epoxy adhesives, adhesive primers; high-temperature resin systems, and thermoplastic materials (e.g. graphite, declar) for the aerospace industry.

The Facility is bisected by the Norfolk Southern Railroad and an intermittent stream (a branch of Lilley Run) (Attachment 1, Figure 2). The adhesive production building is located on the western portion and a warehouse occupies the eastern half of the Facility. The surrounding area includes a mixture of light industrial and high-density residential properties. No structures are present on the area to the east of the Facility. The local publicly owned treatment works is located immediately southeast of the Facility boundary.

On April 1991, EPA prepared a Final RCRA Facility Assessment (RFA) Report. The RFA Report identified areas with the potential for a release to soil, groundwater, and surface water. Based on the results of the RFA, on September 27, 1991, EPA issued American Cyanamid a Corrective Action Permit (1991 Permit). The 1991 Permit required that American Cyanamid conduct environmental

investigations at the Facility. As a result of past Facility-related operations, groundwater is contaminated with volatile organic compounds (VOCs), principally 1,2-dichloroethane (1,2-DCA), at concentrations exceeding maximum contaminant levels (MCLs).

Current Site Status: On December 6, 2012 EPA issued the Final Decision and Response to Comments (FDRTC). The final remedy consists a groundwater extraction system, groundwater monitoring and Facility-wide ICs. The final remedy detailed in the FDRTC is implemented through modified Corrective Action Permit no. MDD 003075942 dated May 9, 2013 (2013 Permit) and environmental covenant between EPA and institutional controls

Long-term Stewardship Site Visit: On June 20, 2018, EPA conducted a long-term stewardship site visit with Maryland Department of the Environment (MDE) and Cytec and their consultant to discuss and assess the status of the implemented remedies at the site.

The attendees were:

Name	Organization	Email Address	Phone No.
John Hopkins	EPA Region 3	hopkins.john@epa.gov	(215)814-3437
Albert Simkins	Maryland Department of the Environment	albert.simkins@maryland.gov	(410) 537-3402
Victoria Egan	Solvay	victoria.egan@solway.com	(410)942-8530
Paul Nemanic	Solvay	paul.nemanic@solway.com	(609)860-4337
Tina Armstrong	Arcadis	tina.armstrong@arcadis.com	(410) 279-8637

Institutional Controls (ICs) Status:

Permit: The modified Corrective Active Permit is the method for requiring operation of the groundwater pump and treatment system, as a condition of the Statement of Basis and FDRTC. The following ICs apply to the entire Facility, shown on Figure 1:

Land Use Restriction: The Property shall not be used for residential purposes (defined as single family homes, multiple family dwellings, schools, day care centers, child care centers, apartment buildings, dormitories, other residential-style facilities, hospitals, and in-patient health care facilities). There were no residential structures or uses of the site at the time of the visit. The Property is secured with fencing and security surveillance. Cytec is currently in compliance with land use restrictions.

Facility-wide Groundwater Use Restriction: Groundwater at the Property is restricted to non-potable use. Extraction of groundwater for groundwater monitoring and/or remediation is permitted. The facility is served by the City of Havre De Grace water utility and there were no uses of groundwater at the time of the visit.

Groundwater Restricted Use Area Notification: Cytec has issued annual letters to the local Publicly Owned Treatment Works (POTW), Harford County Department of Health, and Harve de Grace Planning and Zoning Department providing formal notification that groundwater use should not be permitted within the groundwater restriction area where contaminants exceed numerical Corrective Action Objective (CAO) goals. This notification is not required as part of the final remedy.

Engineering Controls (ECs) Status:

Groundwater Extraction System: In 2001, a groundwater extraction system was installed as an interim measure to control off-site migration of dissolved-phase chlorinated volatile organic compound (VOC) impacts in the immediate and deep overburden groundwater aquifers at the northeastern Property boundary by extracting from former monitoring well MW-10D. In 2014, the system was expanded to include the installation of two additional extraction wells, EW-1 and EW-2, to increase hydraulic control and further reduce the migration of impacted groundwater beyond the Property boundary. Groundwater is currently pumped from each of three extraction wells (EW-1, EW-2 and MW-10D) at specific rates and directly discharged to the POTW. Pumping rates are adjusted to optimize hydraulic control of impacted groundwater, while adhering to the discharge limit requirements of the POTW. The system has operated continuously at a combined rate of approximately 9 to 11 gallons per minute with infrequent, short duration shutdowns for maintenance purposes.

Groundwater Performance Monitoring: There are twelve (12) onsite and ten (10) offsite active groundwater monitoring wells sampled for performance monitoring purposes regarding the groundwater extraction system at the Facility. Groundwater generally flows from west to east towards the Chesapeake Bay. All wells are sampled annually and analyzed for VOCs, primarily 1,2-Dichloroethane (1,2-DCA). Five (5) wells are also sampled for monitored natural attenuation parameters.

Groundwater monitoring results are screened in comparison to Facility-specific Corrective Action Objectives (CAOs) which are equivalent to EPA Maximum Contaminant Levels (MCLs). During the latest sampling event in October 2017, elevated concentrations of 1,2-DCA were observed in 48 percent of samples. Other Facility-related constituents of concern (COCs) with MCL exceedances include trichloroethene (TCE) in 32 percent of samples, vinyl chloride in 28 percent of samples and chloroform in 12 percent of samples.

Based on a capture zone analysis using groundwater elevation comparisons, the stabilization system demonstrates hydraulic influence encompassing majority of the on-site area in the deep overburden aquifer. Overall, COC trends have demonstrated groundwater quality improvements, which are likely a result of a combination of on-site mass removal, off-site mass flux reductions and natural attenuation processes.

Financial Assurance: Cytec has satisfied all financial assurance requirements and is currently in compliance.

Reporting Requirements/Compliance: Pursuant to the Permit, Cytec is required to submit annual performance groundwater monitoring reports. Also, the final remedy requires an IC and EC evaluation every three years. There are no issues of noncompliance regarding reporting requirements as Cytec has submitted a performance monitoring report each year, the last of which was received in February 2018. The latest IC/EC evaluation report was received on January 13, 2017. No transfer of property, change in use of the property, or work that will affect contamination at the property has been reported.

Mapping: The EPA facility website map is accurate and includes the 35-acre Cytec Aerospace Materials facility. Arcadis provided EPA with geospatial information to define the groundwater use restricted area, as requested. A downloadable geospatial PDF map is available on EPA’s corrective action facility webpage under the “Reports, Documents and Photographs” section, found [here](#).

Conclusions and Recommendations: No EC/IC deficiencies were identified. EPA recommended to replace three (3) missing bolts from two groundwater monitoring well covers. Cytec followed-up and confirmed replacement bolts were installed. EPA has determined that the remedy institutional and engineering controls have been fully implemented.

Attachments:

Figure 1: Aerial Map of Cytec Aerospace Materials, Inc.

Picture 1: Replacement Bolts on Monitoring Well Covers

Picture 2: Groundwater Extraction System

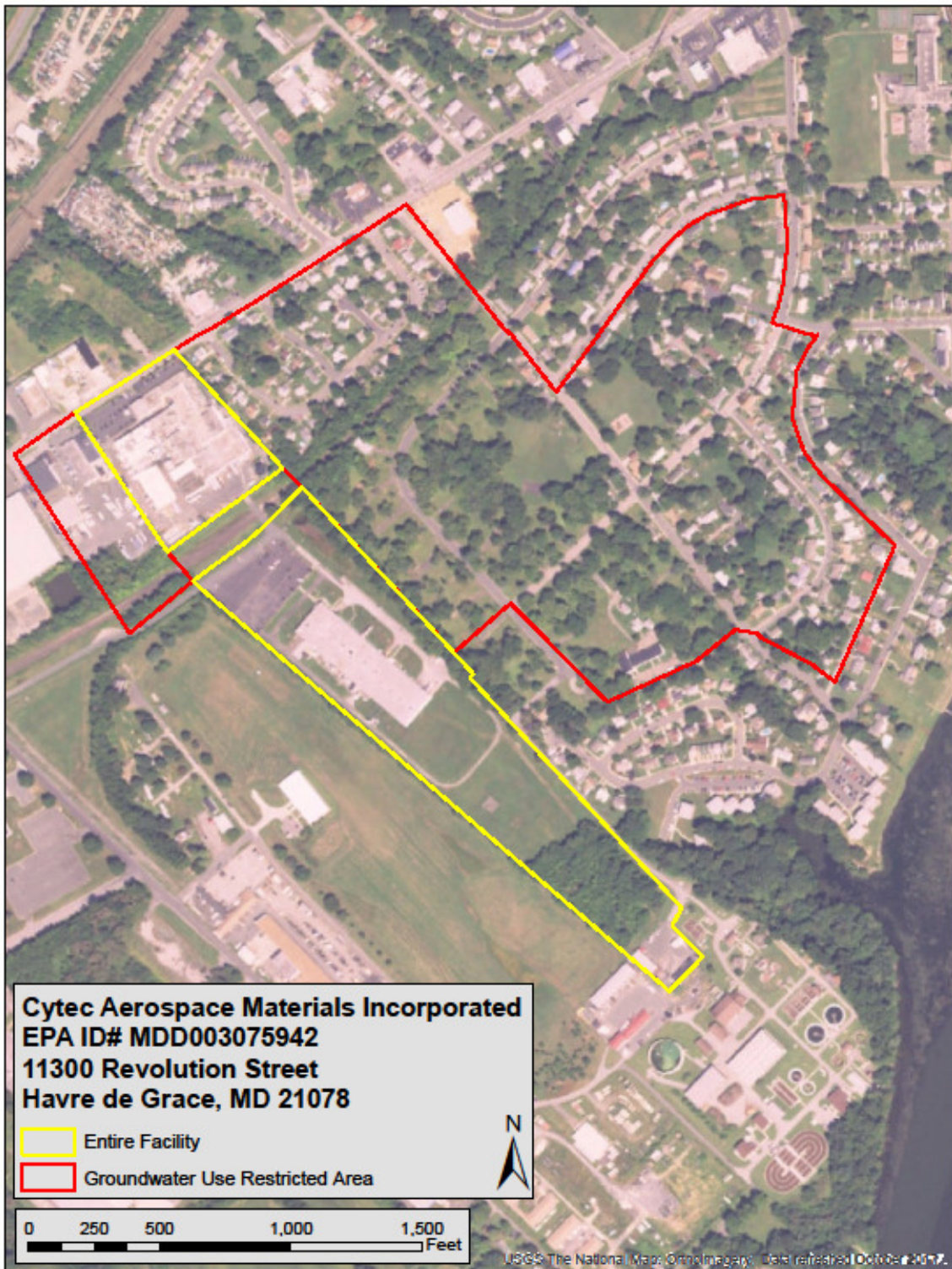
Picture 3: Extraction Well 10-D

Picture 4: Underground Storage Tank Area

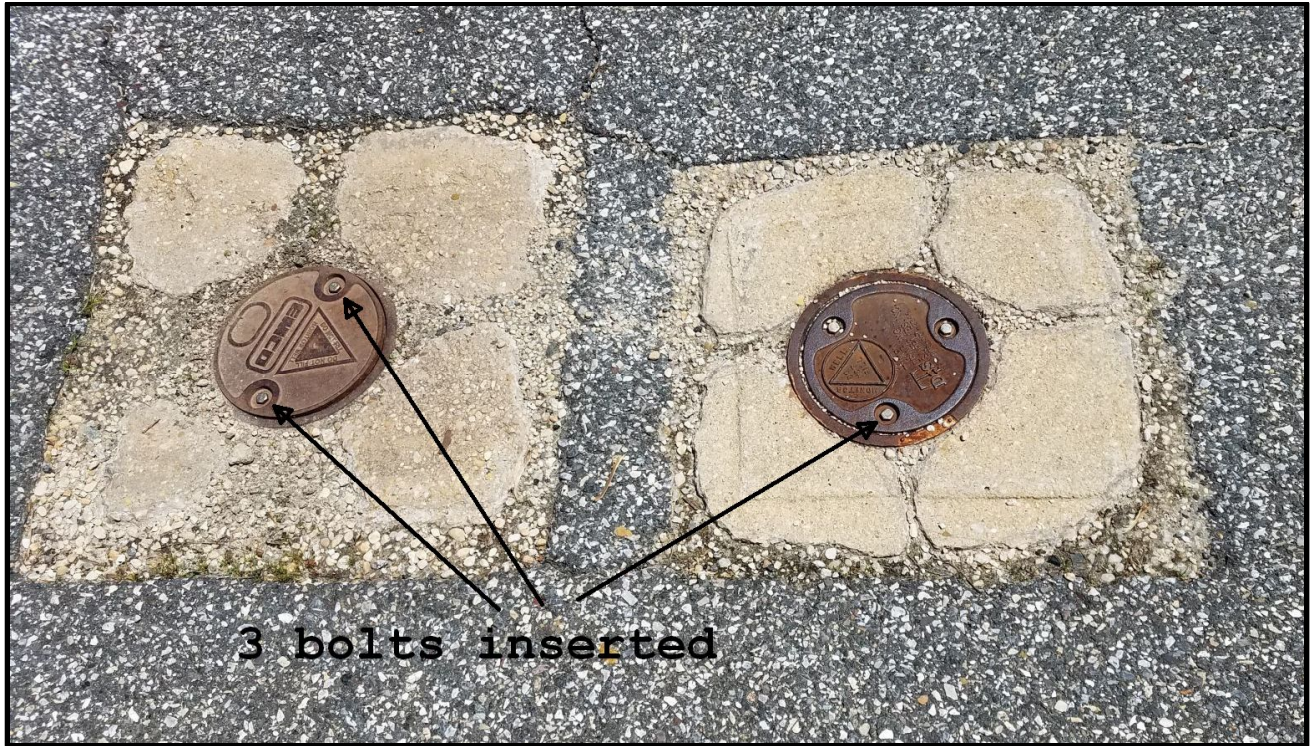
Picture 5: Warehouse Area – Eastern Portion of Facility

Picture 6: Adhesive Production Building – Western Portion of Facility

Figure 1: Aerial Map of Cytec Aerospace Materials Incorporated



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Picture 2: Groundwater Extraction System



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Picture 4: Underground Storage Tank Area



Picture 5: Warehouse Area – Eastern Portion of Facility



Picture 6: Adhesive Production Building – Western Portion of Facility

