



COMMONWEALTH of VIRGINIA

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September 30, 2015

Mr. John McCloskey
Merck Sharp & Dohme Corp.
2778 South East Side Highway
Elkton, Virginia 22827-0007
VIA ELECTRONIC MAIL

**RE: Long Term Stewardship Report
Merck Sharp & Dohme Corp., Stonewall Plant, Elkton, Virginia
EPA ID# VAD001705110**

Dear Mr. McCloskey :

The Department of Environmental Quality, Office of Remediation Programs (Department) has prepared the attached report following the Long Term Stewardship inspection performed on August 5, 2015 at Merck Sharp & Dohme Corp., Stonewall Plant located in Elkton, Virginia. The inspection found no outstanding items.

You may contact me to discuss any questions. I can be reached at 703-583-3825 or by email at Kurt.Kochan@deq.virginia.gov.

Respectfully,

A handwritten signature in cursive script, appearing to read 'Kurt W. Kochan'.

Kurt W. Kochan
Corrective Action Project Manager

cc: Brett Fisher, Angela Alonso, DEQ-CO
Andrea Barbieri, EPA Region III (3LC50)
Graham Simmerman, DEQ-VRO

Attachment



Long-Term Stewardship Assessment Report
Merck Sharp & Dohme Corp., Stonewall Plant, Elkton, Virginia
EPA ID# VAD001705110

Prepared by: Kurt W. Kochan

Date: September 3, 2015

Introduction: Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be observed. The purpose of the 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 the RCRA Corrective Action facilities. The assessment is conducted in two fold, 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 Merck Sharp & Dohme Corp. (Merck) facility is located in northwestern Virginia, approximately 2 miles southwest of Elkton. The facility property lies within the Shenandoah Valley, just SE of the South Fork of the Shenandoah River. The facility occupies approximately 1,300 acres, of which 89 acres are used for active operation. The facility began operation in 1941. Prior to that, the land was undeveloped. The facility includes a pharmaceutical laboratory and manufacturing facilities, which produce animal and human health care products (pharmaceuticals). The facility is permitted to store hazardous wastes in containers and is currently in the Corrective Measures Implementation (CMI) phase of RCRA Corrective Action. The facility is supported by a wastewater treatment plant, a solvent recovery operation, and a power plant with co-generation facilities. Additionally, there is an onsite, permitted, industrial landfill. The landfill occupies 7 acres located in the northeastern corner of the property. Prior to 1980 various production wastes, including organic and inorganic chemicals from the plant operations were disposed of in the landfill. The landfill was capped in 2000 as a required corrective measure and a deed notice was put in place identifying its location. Onsite groundwater flow is controlled by continuous production well pumping at the facility.

The primary contaminants of concern in groundwater include benzene, chlorobenzene, chloroform, methylene chloride, naphthalene, trichloroethene, vinyl chloride, and vanadium. The constituents of concern in surface and subsurface soils include several volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).

Current Site Status: The Virginia Department of Environmental Quality (DEQ) is the lead agency that provides oversight of RCRA Corrective Action activities at the Merck Sharp & Dohme, Stonewall Facility (Merck), located in Elkton, VA. RCRA Corrective Action clean-up activities at the facility are implemented through the conditions and requirements of the facility's Hazardous Waste Management Permit for Site Wide Corrective Action (Permit), issued on April 5, 2002 and renewed on June 10, 2013, and the facility's Corrective Measures Implementation (CMI) Work Plan, approved on September 8, 2004.

Long-term Stewardship Site Visit: On August 5, 2015 DEQ conducted a long-term stewardship site visit with Merck representatives and its contractor to discuss and assess the status of the implemented remedies at the site. The attendees were:

Name	Organization	Email Address	Phone No.
John McCloskey	Merck	John.mccloskey@merck.com	540-298-4122
Reg Tanner	Merck	reg.tanner@merck.com	540-298-4161
Thomas Burns	Merck	thomas.burns@merck.com	908-740-1131
Sarah Slagle	O'Brien & Gere		804-270-3515
Vaughn Nelson	O'Brien & Gere		804-270-3515
Erich Weissbart	EPA	weissbart.erich@epa.gov	410-305-2779
Laura Stuart	VADEQ	Laura.stuart@deq.virginia.gov	540-574-7910
Kurt Kochan	VADEQ	kurt.kochan@deq.virginia.gov	703-583-3825

Institutional Controls (ICs):

Groundwater: On-site groundwater is not permitted for potable use and can only be used as non-contact cooling water as per the Hazardous Waste Management Permit for Corrective Action Section II.B2.(b)(8) Groundwater used for drinking purposes at the Facility is obtained from off-site wells.

Residential Use: The parcel is for industrial purposes only. There were no residential areas constructed within Facility boundaries.

Excavation: There are no excavation controls on the property.

Informational and Proprietary Controls: A RCRA Subtitle C hazardous waste cap was installed on the sanitary landfill in 1999. There are deed restrictions in place for the Facility related to the maintenance of the landfill cap. The restrictions limit future development/disturbance on the landfill to maintain cap integrity.

Engineering Controls (ECs):

Access Controls: There is a security fence surrounding the Facility. The security fences were intact and undamaged. Security personnel are present around the clock at the Facility.

In-situ Enhanced Bioremediation: Anaerobic bioremediation injections were previously used to treat VOCs in groundwater at the *Skimmer Pond SWMU and Solvent Burning Pits SWMU* source areas. Groundwater was extracted (“pulled”), amended with emulsified soybean oil (“electron donor”), and injected (“pushed”) into well MW-47D along with a seed culture of dechlorinating bacteria. Merck is continuing to monitor the groundwater chemistry to evaluate the effects of this action.

Landfill SWMU: Oxygen releasing compound socks are currently deployed in selected wells in this area to reduce the levels of constituents of potential concern (COPCs) in the groundwater. Based on the latest monitoring data, concentrations of COPCs continue to decline in this area.

AOC South bioventing system: The system is operating as designed.

AOC North bioventing system: The system is operating as designed.

Site-Wide Groundwater Extraction: The Facility has demonstrated that the on-site site-wide groundwater extraction system is effectively maintaining hydraulic control over the groundwater contaminate plume even though the Facility has taken measures to reduce their consumption of groundwater.

Financial Assurance: Financial Assurance is up to date.

Follow-up Activities: No follow-up by DEQ is required.

Conclusion: The engineering controls selected are implemented and remain intact and undamaged. Also, no EC/IC deficiencies have been identified. The current EC/ICs have been implemented and are functional/maintained. Community awareness newsletters continue to be published in April and December of each year.