

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

P071435577

FACILITY: Speedway LLC #8821 - Remediation		SRN / ID: P0714
LOCATION: 547 North Perry Street, PONTIAC		DISTRICT: Southeast Michigan
CITY: PONTIAC		COUNTY: OAKLAND
CONTACT: Mike Cox, Geologist		ACTIVITY DATE: 06/21/2016
STAFF: Samuel Liveson	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Inspection of gasoline remediation site. Facility needs Permit to Install per R201.		
RESOLVED COMPLAINTS:		

On June 21, 2016, I conducted a self-initiated, level 2 inspection of Speedway LLC 8821 - Remediation (Speedway), located at 547 North Perry Road in Pontiac, Michigan. The purpose of this inspection was to determine the facility's compliance with the federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

The inspection was prompted when Mr. Michael Cox of Practical Environmental Consultants (PEC) contacted the Air Quality Permit Section about submitting a Permit to Install (PTI) application for a soil remediation process, and subsequently contacted Mr. Sebastian Kallumkal of the Air Quality Southeast Michigan District Office regarding the need for a PTI.

Prior to the inspection, Mr. Cox explained that a PTI application was prepared in 2012 but the project was put on hold. A soil vapor extraction and air stripper remediation system was installed. From May 2 to June 1, the remediation system was operated without a PTI. A violation notice (VN) for Rule 201 was sent on June 28, 2016. A PTI application and a response to the VN from Speedway were received on July 5, 2016.

I arrived on site around 9:00 AM. I met with Mr. Joseph Ward, Remediation Technician with Chemviron Midwest, Inc (Chemviron). Mr. Ward installed the remediation system on site. Chemviron is an operations and maintenance subcontractor for Practical Environmental Consultants, Inc. (PEC). PEC is contracted by Speedway LLC to remediate the site. Speedway LLC is the responsible party for cleanup of the site.

Mr. Ward explained operations at the site. I provided Mr. Ward with my contact information and a copy of the pamphlet "DEQ Environmental Inspections: Rights and Responsibilities."

Site Walk-Through

Remediation equipment is located in an 8 feet (ft) x 18 ft trailer behind the current Marathon gas station and building on site. Five extraction wells in the area are screened between soil and groundwater. A 1 inch "stinger" in each extraction well can be raised or lowered to set the point of extraction from these wells. Water and air collected by these wells travels to an air/water separator in the remediation trailer. Extracted soil vapor is exhausted uncontrolled out of a stack that appears to be greater than 1.5 times the height of the trailer. The air flow is 58 cubic feet per minute (cfm) out of a stack 3 inches in diameter, so that exit velocity appears to be about 20 feet per second (fps).

The general permit for remediation requires stack exit velocity to be 30 fps. On July 15, Mr. Cox explained that a reducer coupling will be added to this stack to reduce the dimensions to two inches, so that exit velocity will be above 30 fps at 40 cfm.

From the air/water separator, water travels to an oil/water separator where free product, or light non-aqueous phase liquid (LNAPL), is collected. So far in the operation of this system, LNAPL has not been observed. Next, water travels through an air stripper to remove volatile organic compounds (VOCs). VOCs are exhausted uncontrolled out of a stack that appears to be greater than 1.5 times the trailer height. According to Mr. Ward, both the soil vapor extraction and air stripper stacks are 20 ft tall. Stack velocity appears to be greater than 30 fps based on previous flow measurements through the air stripper averaging 400 cfm with a 6-inch diameter stack.

The remaining water treatment system consists of four sediment filters to remove iron from water, and dual-stage carbon filter system with 200 pound (lb) tanks before water is discharged from the remediation system. Water is continuously sampled throughout this process.

The remediation system has been off since June 1 because the totalizer, which measures the water flow discharging from the system, stopped working. According to Mr. Ward, the system will not operate again until a Permit to Install is in place.

When operational, the remediation system runs 24 hours a day, 7 days a week, and Mr. Ward is on site weekly for maintenance. The system has built-in high-level floats to shut down if fluid levels are too high throughout the system, and a sensor that shuts the system down if the lower explosive limit is reached inside the trailer.

The length of time for which the system will remain in operation depends on analytical data. PEC collects groundwater samples quarterly.

Potential To Emit (PTE)

Mr. Cox provided facility PTE calculations for the air/water separator. The PTE is based upon tedlar bag sampling from May 3rd, the second day of system operation. Analytical results provide BTEX and total VOC concentrations in units of parts per million by volume (ppmv) and milligram per cubic meter (mg/m^3). The benzene, toluene, ethylbenzene, and xylene (BTEX) concentration is $517.3 \text{ mg}/\text{m}^3$, and the VOC concentration is $4560 \text{ mg}/\text{m}^3$. At these same concentrations with an air flow of 41 cubic feet per minute (scfm) for 24 hours a day, the PTE of VOC emissions is 6141.6 pounds per year. Similarly, the PTE of BTEX emissions is 696.7 pounds per year.

Mr. Cox demonstrated that PTE of the air stripper is about 30 pounds of VOCs per 12 month time period, and 2.96 pounds of BTEX per 12-month rolling time period. This is based upon mass balance concentrations of BTEX in water before and after the air stripper.

These PTE values appear to demonstrate that the facility PTE of VOCs is below 10 tons per year, and the PTE of BTEX is below 1 ton per year, so that the facility appears to qualify for a general permit to install.

Conclusion

Based on the AQD inspection and records review, it appears that Speedway is in violation of Rule 201 because the facility installed a soil vapor extraction and air stripping remediation process without obtaining a Permit to Install. The facility appears to qualify for a general PTI.

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DATE 7/19/16

SUPERVISOR CJE