MEMO

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From:
Kris Hinskey
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Date:
June 28, 2019

Arcadis Project No.:
MI001454.0007

Subject:
Livonia Transmission Plant
Memo Regarding Email received on 5/26/2019- Long term solution to address flooding in crawl spaces
36200 Plymouth Road, Livonia, Wayne County, Michigan
EGLE Site ID No. 82002970

On behalf of Ford Motor Company (Ford), this memo has been prepared by Arcadis of Michigan, LLC for the Livonia Transmission Plant (LTP) site (the site). This memo is in response to the May 26, 2019 email from the Michigan Department of Environmental, Great Lakes, and Energy (EGLE), requesting a long-term solution to address the flooding inside the crawl spaces of homes that currently have an interim preemptive mitigation system installed.

During the week of April 22, 2019, the Livonia area received approximately 1.22 inches of rain, which likely saturated the ground. During the week of April 29, 2019, the Livonia area received an additional 3.9 inches of rain, with 3.28 inches in a 24-hr period on April 30th and May 1st, which resulted in area wide flooding and road closures (AccuWeather, 2019). Governor Whitmer declared a state of emergency in nearby Wayne County, where 3,000 homes were flooded and the Southfield Freeway was closed (Associated Press, 2019). The precipitation totals from the months of April, May, and June combined has been 11.74 inches.

Since the initial flooding response, Arcadis has been routinely surveying and responding to flooding associated with the above average rainfall that had occurred in April, May, and June of 2019. Efforts included water removal, liner inspections, and liner repairs. The work was conducted during high water levels and as water levels subsided in the affected crawl spaces within the Alden Village Subdivision.

By early to mid-June 2019 the water levels subsided enough to inspect the liners in the crawl spaces thoroughly, it was determined that multiple seams had ruptured due to the elevated water level. In order to fix the compromised liner and to minimize water infiltration, heat sealing was conducted on the seams of the liner. Heat sealing of the seams is essentially welding the two pieces of liner together eliminating potential for water infiltration. This type of welding technology is typically conducted at landfills. In addition to the compromised seams, it was determined that the green drains were creating a pathway for water to infiltrate in the crawl spaces. The green drains, during flooding conditions, allowed elevated water from below the surface to pass through and cause flooding on the liner. The green drains were originally installed to allow water from potable water and/or sanitary leaks to pass through and prevent standing water or liquids on the liner. Subsequently, the green drains in locations that were affected from the flooding have been sealed to eliminate that pathway.

The corrective actions that have been implemented at the affected locations address and minimize the potential for water to infiltrate during flooding conditions. As an extra precaution, Arcadis will inspect the crawl spaces that have been previously affected by flooding after more than a 1 inch of rain falls within 24 hour period. If any water is identified on the liner, Arcadis will immediately assess the cause and remove the water if necessary

References

AccuWeather, 2019. https://www.accuweather.com/en/us/livonia-mi/48150/may-weather/338728?monyr=5/1/2019&view=table

Associated press, 2019. https://www.usnews.com/news/best-states/michigan/articles/2019-05-02/southeastern-michigan-braces-for-more-rain-after-flooding.