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Subject: NCD991278805 Petty Machine Company => DEQ Comments on 1,4-Dioxane Concentrations in Groundwater Collected from MW-8
Date: Thursday, September 01, 2016 4:04:10 PM
Attachments: [image001.png](#)

Dear Larry and Al:

This email is in response to the analytical report submitted by Al Quarles in an email dated September 1, 2016. The analytical report presents the 1,4-dioxane concentration measured in groundwater collected from MW-8 on August 11, 2016. This sample was collected and analyzed in response to a request from the Hazardous Waste Section (Section) to reassess the 1,4-dioxane concentration.

Background

1,4-Dioxane was analyzed in select monitoring wells in May 2016 in response to a request from the Section as part of facility characterization activities. 1,4-Dioxane was measured at 4,500 micrograms per liter (ug/L) in groundwater collected from MW-8 (15A NCAC Subtitle 2L Groundwater Standard is 3 ug/L) in May 2016. 1,4-Dioxane was measured at concentrations less than 3 ug/L in MW-1 (located ~50 feet downgradient of MW-8) and in MW-6 (located ~100 feet downgradient of MW-8). Since this constituent is highly mobile and persistent in the environment, it seemed unlikely that the concentration would decrease so dramatically over such a small area. As a consequence, the Section recommended resampling of MW-8 for verification purposes.

Resampling Result in MW-8

As noted above, MW-8 was resampled on August 11, 2016, for the presence of 1,4-dioxane. 1,4-Dioxane was measured at 3,200 ug/L in August 2016 confirming its presence. The absence of this constituent in monitoring wells that screen the same aquifer unit at distance of 50 feet and 100 feet is perplexing. It may reflect laboratory error in May 2016. It may also reflect the presence of preferential flow paths.

Next Steps

Analyze for 1,4-dioxane in the entire suite of monitoring wells during the next regularly scheduled monitoring event (November 2016).

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