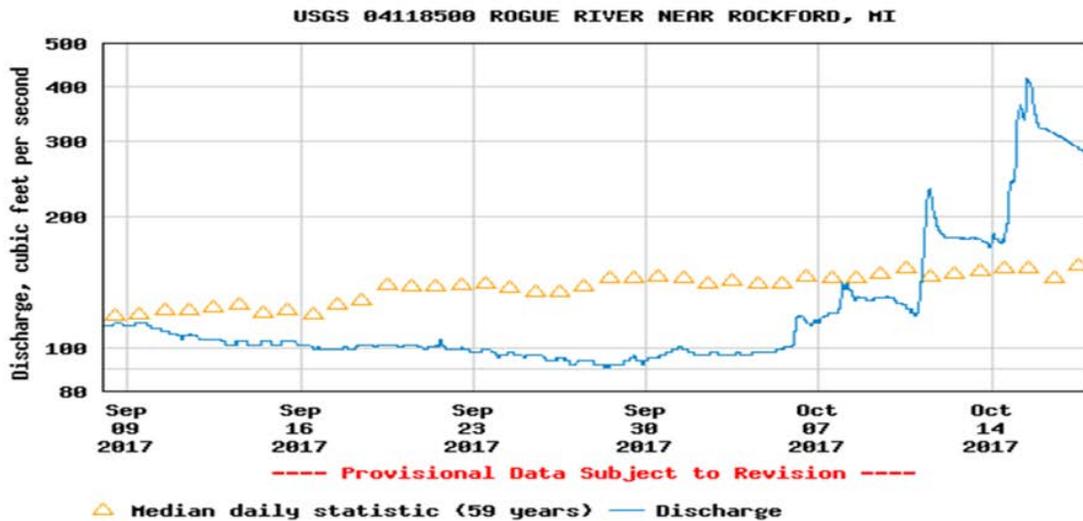


November 29, 2017
 To: Abigail Hendershott, MDEQ
 Adam London, Kent County Health Department
 From: Richard R. Rediske
 Re: Wolverine World Wide Interim Report, November 8, 2017

I am a Professor of Water Resources at Grand Valley State University and expressing my concerns as a citizen about the Wolverine World Wide (WWW) Interim Report of November 8, 2017 and their press release of November 9, 2017. The sampling for the Interim Report was conducted in two phases, a groundwater/pore water study in mid-September, 2017 and a Rogue River sampling event on October 17, 2017. The groundwater investigation found very high levels of PFOS/PFOA, ranging from 12,700 ng/l to 490,000 ng/l. The Rogue River sampling event was the basis for the Recreational Water Health Assessment by Dr. Anderson in the WWW press release. The data from the USGS stream gauge on the Rogue River and a local weather station are shown in Figure 1 and clearly demonstrate that hydrologic conditions were very different during the two sampling events. The Rogue River samples were collected after consecutive 1.5" and 2" rain events and reflect a high level of dilution by surface and rainwater. The percentage of groundwater flow would have been considerably higher if the Rogue River samples were collected in



Weather History for Rockford, MI [KMIROCKF23]

Previous Custom September 8 2017 To October 17 2017

Summary
 September 8, 2017 - October 17, 2017

	High	Low	Average		High	Low	Average
Temperature	97.5 °F	34.9 °F	62.8 °F	Wind Speed	15 mph	--	0.8 mph
Dew Point	71 °F	31 °F	51.4 °F	Wind Gust	0 mph	--	--
Humidity	93%	30%	72.6%	Wind Direction	--	--	SSE
Precipitation	5.4 in	--	--	Pressure	30.51 in	29.23 in	--

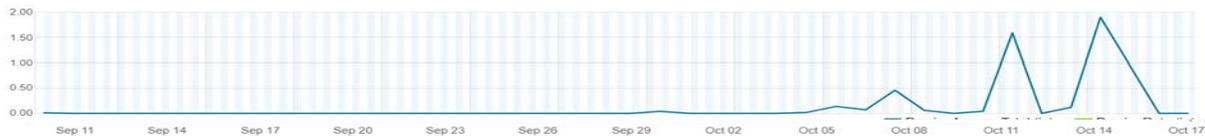
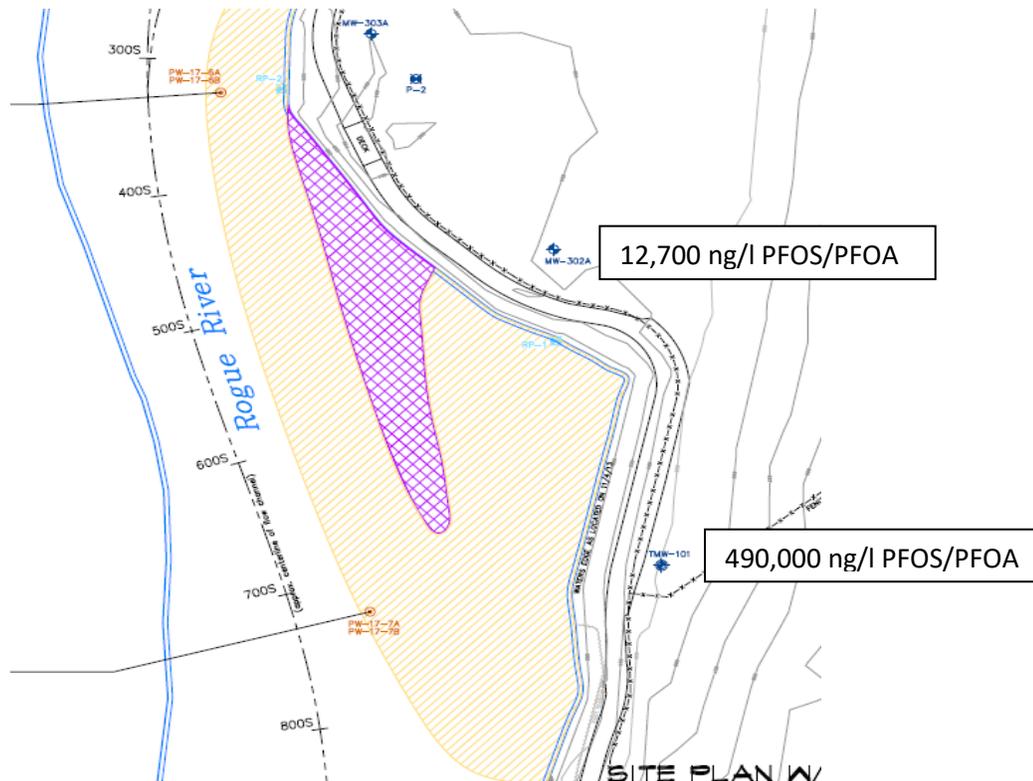


Figure 1. Rockford area weather conditions and USGS discharge data for the Rogue River.

September, resulting in higher PFOS/PFOA river concentrations. Stream discharge and precipitation data were not included in the report however, groundwater mixing estimates were made using 61,000,000 gpd and the September discharge was at 64,000,000 gpd according to USGS. The actual discharge Rogue River was at 193,000,000 gpd when the consultant used the October 17, 2017 contaminant results to confirm their flux estimates at the lower stream stage. This discrepancy calls the verification of contaminate flux reported by the consultant into question.

I also am concerned that water and sediment in the cove wetland area were not sampled as part of the study. The wetland has the potential for limited mixing with Rogue River and is adjacent to wells with high PFOS/PFOA concentrations. It also is near the bike path and has unrestricted access for children.



Dr. Anderson is quoted in the press release as stating; "Swimming, kayaking, or other recreational contact with Rum Creek or the Rogue River does not present a health risk to individuals." Based on the absence of data for the cove wetland and the use of water concentrations after consecutive storm events, I feel the information in interim report does not support her conclusions.

Finally, I am very concerned that the Rockford City Manager, Mr. Thad Beard, was quoted in the press in response to the WWW press release that "the water is safe for recreational purposes" and "I don't know what the numbers were (when the city was drinking from the river). I don't see it as a concern at this point." Again, I feel the incomplete and storm water dilution biased data set in the interim report is not suitable for both current and historic public health assessment.

This report was represented in the press release as a “partnership with the Michigan Department of Environmental Quality.” This raises two important questions:

1. Did the MDEQ endorse this sampling program of conducting the groundwater study at low stream discharge and the surface water study after a significant storm event?
2. Does the MDEQ support the statement by Dr. Anderson that the Rogue River is safe for recreational contact or should a more representative data set be evaluated?

Thank you for your consideration.

A handwritten signature in black ink, appearing to read 'RR Rediske', with a long horizontal flourish extending to the right.

Richard R. Rediske, Ph.D.