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From: Robert Law
Sent: Wed 2/27/2013 8:49:15 PM
Subject: SV-CWCM - High Flow Event

Stephanie, Eugenia, and Ray

As you are aware, the CPG initiated the first of two High Flow sampling event yesterday due to the predicted flows in the Passaic River. Yesterday, NOAA was predicting flows of approximately 3,500 cfs at Little Falls as result of this storm. The approved criteria for a Small Volume CWCM High Flow event is >3,000 cfs at Dundee Dam. A rule of thumb developed by CPG modeling team is that the flow at Dundee Dam is about 10% higher than at Little Falls and thereby we would expect about 3,800 cfs at Dundee Dam.

de maximis informed EPA on Monday of the event and began mobilizing. Tierra was also contacted on Tuesday morning. Stephanie called me yesterday afternoon and said that Eugenia was objecting to the event that it was not large enough. We (Bill, Mike and I) discussed this on a call with Stephanie, Ray,and Eugenia. Ray and Stephanie agreed with going forward with the sampling event while Eugenia felt that we should wait for a better event. We proceeded with the event and collected samples last night and this morning - it is ongoing. The EPA's LPR and NB oversight teams have been on the water collecting split samples with the CPG Team.

The actual storm flows have been less than the NOAA predictions. The flow appears to have peaked at Dundee Dam at 3020 cfs at 10:45 and 11:45 AM this morning and then has fluctuated around 2930-2960 cf since that time. The discharge at Dundee Dam in response to such storm events typically shows dual peaks, with an initial peak immediately following the rainfall event, followed by a larger peak within 1-2 days and corresponding to the peak at Little Falls as it is transported downstream (enhanced by the runoff, SWOs, etc between Little Falls and Dundee Dam). The NOAA predictions are still suggesting a peak flow of 2980 cfs at Little Falls through Friday; again using our rule of thumb for flow we could see a flow of up to 3400 cfs at Dundee Dam.

WS 11 of the EPA-approved SV-QAPP states the following for High Flow Events:

High Flow Events (> 3,000 cfs at Dundee Dam)

"*Two sampling events are proposed under storm-induced high flow (i.e., not sustained high flow) conditions (>3,000 cfs at Dundee Dam) in order to capture data under conditions in which resuspension of contaminants from the sediment bed and subsequent deposition from the water column are expected to dominate over other transport processes. Storm events rather than elevated base-flow conditions are*

expected to be the conditions under which such processes dominate. During elevated base-flows where the discharge is high over an extended period of time, the sediment is expected to be armored allowing for little suspension. The criterion of 3,000 cfs is the flow under which the salt front is anticipated to be below RM 1.4 and is the three-month return period event. As described in Appendix A, ***the high flow event flow criterion may be relaxed if the flows are not achieved such that storm event data may be collected. USEPA will be consulted should the criterion be revisited."***

During our telephone conversation yesterday, it was noted that the high flow event was not significantly different than the low flow event in August 2011 where the flow was 2500 cfs. The CPG disagrees with this statement on 2 points:

1. The actual flow is at least 20% higher than the Routine Event 1 and it meets the criteria established in the EPA-approved SV-CWCM QAPP.

2. The data expected to be measured as part of this high-flow event will be quite different compared to the data from Routine Event 1 which was measured at ~2500 cfs. In particular, samples will be collected on the rising and falling limb of the hydrograph as opposed to Routine Event 1 which only involved sampling over the tidal cycle. In areas of the river where shear stresses during this event are anticipated to exceed normal tidal shear stresses (mainly the upper miles of the LPRSA), the data on the rising and falling limb of the hydrograph may show distinct contaminant patterns.

This morning - I discussed with Stephanie that the storm did not produce the predicted flows; we agreed that the CPG would continue the sampling and re-evaluate this afternoon - this was before the flow at Dundee Dam exceeded 3000 cfs. At around 1 PM today, I informed Stephanie that the 3000 cfs flow criteria was met at Dundee and she has asked if intend to continue sampling. I told her that the CPG would need to discuss this.

After discussions, the CPG plans to continue and complete the sampling for this high flow event which has met the conditions set forth in the QAPP and may exceed it by a higher flow over the next 2 days. The CPG's goal remains to conclude the SV-CWCM program by this summer. The SV-CWCM data support both the risk assessments and the Chemical Fate and Transport Model which are essential to completing the RI/FS.

Please contact Bill Potter, Mike Barbara or me if you wish to discuss.

R/

Rob

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