

11/12/03 07:41AM

TO: David Fongers (fongersd@michigan.gov), Cheryl Howe (howec@michigan.gov), Ralph Reznick (reznickr@michigan.gov), Al Taylor (taylorab@michigan.gov)

CC: Ben Baker (bbaker@dow.com), Gary Dyke (gdyke@ch2m.com), Lauri Gorton (lgorton@ch2m.com)

Re: Revised workplan: Flow and Solids Monitoring and Sediment Thickness Characterization

Cheryl,

Thanks again for DEQ's constructive comments on our Workplan for Flow and Solids Monitoring and Sediment Thickness Characterization for the Tittabawassee River. We have discussed DEQ's recommended changes with The Dow Chemical Company, and have received their support for responding to the comments as described in detail below. The majority of DEQ's comments were requests for clarification or verification of our procedures, which we have been able to accommodate by adding or modifying text as needed in the Workplan, QAPP, and HASP. Please review our proposed changes and communicate to us any omissions or other concerns as soon as possible. As you recall, a major point of discussion on our conference call of October 31, 2003 was the characterization of this work as a preliminary study, which will be used to develop background data needed to inform future, more detailed characterization of the river, floodplain, and associated sediments and soils. Accordingly, we are not planning to perform any chemical analyses until we have completed this first round of physical characterization of the system.

We have discussed this issue extensively with Ben Baker, Dow's remediation leader for the river and floodplain, and he is in agreement that further chemical characterization should wait until it can be better informed by the results of this study. We anticipate that reporting of the results of this work will be completed in the first quarter of 2004.

A paper copy of the workplan, QAPP, and HASP will follow this email by conventional mail. Please address any comments or concerns regarding this workplan to Greg Peterson or me at Limno-Tech, or to Ben Baker at Dow.

Thank you,

Tim Dekker
Limno-Tech

Specific Comments and Responses:

Workplan:

1) DEQ requested that our description of the flow and solids gaging work (4.1.2) make reference to the QAPP. We have made this change on page 5.

2) DEQ requested that we clarify that flow measurements could be performed from bridges or by wading with a point velocity meter. We've added text to this effect on page 5.

3) DEQ requested clarification of the flow threshold we identified for mobilization for high flow sampling. We have provided statistics in the workplan text (page 6) that characterize the event we're targeting as greater than a 95th percentile November flow, with a mobilization threshold at an approximately 90th percentile flow.

4) Section 5 - Sediment Thickness Characterization - DEQ asked us to consider the use of scour chains to quantify the degree of sediment movement. On the 10/31/03 call, we indicated that this may be useful to consider in future studies, and that this study could help to inform the decision about where to place these devices. We have no plans to implement these under the current workplan.

5) Also in the section on sediment thickness characterization, we have modified the section on probing to specify probing every 10-20 feet, rather than every 10 feet. This is not in response to a comment by DEQ, but reflects early results of our probing work that suggests that some areas are sufficiently uniform in thickness to allow a less-dense probing plan. We will particularly need this flexibility as we get later in the year and days get shorter.

6) DEQ asked for an explanation of the hatched lines on Figure 1, the schedule of activities. We have added a footnote to the figure that states, "Note: hatched lines indicate activities that are currently planned but not explicitly scoped in this document; workplans for these tasks will be developed based in part on the findings of this study" QAPP:

1) DEQ requested that we include a note specifically stating that we will make a minimum of 20 measurements across the flow cross section. This is consistent with our current practice, and we've modified the QAPP to reflect this (App. A, Surface Water Flow Measurements, p.5).

2) DEQ requested that the QAPP only reference the current USGS "preferred method" for flow measurement, and delete any reference to previous methods. We have made this change in the QAPP.

3) DEQ wanted to verify that we compensate for barometric fluctuations in our depth sensing. Our pressure sensors do compensate for barometric fluctuations by means of a vent tube that ports to the atmosphere. We received confirmation via email from David Fongers of the DEQ that he had reviewed our equipment specs and was satisfied with our measurement technique.

4) DEQ asked us about our procedures for velocity meter calibration. I have verified with our field personnel that prior to use, we zero the instrument in a stilling bucket, and are in compliance with manufacturer requirements. Our QAPP states that we comply with manufacturers requirements.

5) For the sediment probing, DEQ recommended that we have all probing done by a single person for the sake of continuity, and provide some overlap in probed areas if there has to be a change in personnel. This is consistent with our plan, and we have modified the QAPP to state this explicitly (App. A, Sediment Sampling SOP)

6) For water column TSS sampling, DEQ recommended that we take duplicates by sampling the water column twice and sending individual samples to the lab, rather than compositing several samples and sending two sub-samples of the composite to the lab. We are in agreement with

this procedure and have modified our QAPP to reflect this (app. A, Surface Water Sampling SOP, p. 2)

6) DEQ asked us to add an SOP for coring. We regret the omission and have added the SOP to the QAPP.

HASP

1) DEQ indicated that the description of protective clothing (essentially modified Level D) in the HASP is currently written in a generic form, without specific reference to dioxin, and requested that we add text to more explicitly describe precautions for avoiding dermal contact with dioxin-contaminated sediments. We have added text to this effect in the updated version of the HASP (Sections 4.1, 5.1).

2) DEQ requested that Table 1 (list of detected chemicals) list dioxin levels as TEQ. We have modified the table to include this.

<<Work_Plan_for_FlowSolidsMonitoring_main_111203.doc>>
<<Work_Plan_for_FlowSolidsMonitoring_QAPP_111203.doc>>
<<Work_Plan_for_FlowSolidsMonitoring_HASP_111203.doc>>

Tim Dekker, Ph.D., P.E. <mailto:tdekker@limno.com>
Senior Project Engineer

Limno-Tech, Inc. <http://www.limno.com>
501 Avis Drive
Ann Arbor, MI 48108

Phone: (734) 332-1200 Fax: (734) 332-1212

Excellence in environmental solutions since 1975