



Steve Bullock, Governor
Tracy Stone-Manning, Director

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December 8, 2014

Mr. Craig Woolard, PhD, P.E.
City of Bozeman
PO Box 1230
Bozeman, MT 59771-1230

RECEIVED
DEC 15 2014

RE: **CITY OF BOZEMAN LANDFILL – GALLATIN COUNTY – LICENSE #196**
NOTICE OF DEFICIENCY -SEPTEMBER 4, 2014 DRAFT CORRECTIVE MEASURES ASSESSMENT

Dear Mr. Woolard:

The Solid Waste Program (SWP) has completed the review of the subject document. The following comments are provided for your consideration:

1. The SWP notes that the additional groundwater investigation efforts proposed in the October 2, 2014 addendum to the work plan have not been completed. The SWP approved the addendum to the work plan that included the installation of two additional monitoring wells. The well installations must be completed before the SWP completes the review of the proposed corrective measures; the Administrative Rules of Montana (ARM) section 17.50.1307(7)(a)(i), requires the characterization of “the nature and extent of the release by installing additional monitoring wells as necessary”. The proposed installation of PMW-28 is very important in determining of the extent of VOC’s upgradient of MW-17. The data from this well will also be critical in the verifying whether or not the main component of the source of contamination is landfill gas as the City asserts. Proposed well PMW-27 is also equally important in defining the downgradient extent of the VOC plume south and west of the unlined closed cell. As has been stated in previous correspondence, if analytical results from either of these wells exceed the current Circular DEQ-7 “Montana Numeric Water Quality Standards”, additional investigation may be necessary. Please proceed with your effort to obtain access to those properties identified in the work plan for the additional monitoring well installations.
2. In the analysis of the effectiveness of Alternative F, the City’s preferred alternative, there are qualitative statements made about the short-term and long-term effectiveness of the remedial technologies that this preferred alternative combines. Please provide examples of other sites, with similar geology and contaminants of concern, where this type of technology has been implemented. The summary should include, at a minimum, an executive summary of the sites and the time frame of effectiveness and/or contaminant reduction rates. These examples will provide support for the degree of certainty that the proposed chosen remedy will prove effective.
3. The City’s chosen alternative (Alternative F) relies mainly on the hypothesis that the main contaminant transport mechanism is the partitioning and transfer of the non-methane organic compounds in the landfill gas into the vadose zone and groundwater. Please provide executive summaries of several studies or several examples of this similar scenario at other landfills. This

again will help to provide support for the degree of certainty that the proposed chosen remedy will prove effective.

4. ARM 17.50.1309(3)(vii)and (viii) requires facilities assess the “long term reliability of the engineering and institutional controls; and potential for replacement of the remedy” when selecting the preferred corrective measures remedy. In light of this requirement, the SWP requests that the City identify the possible additional alternative, essentially the back-up plan, if Alternative F, does not prove effective.

If you have any questions regarding these comments, please contact me.

Sincerely,



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Environmental Science Specialist
Solid Waste Program
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cc: Mr. Kirk Miller, Tetra Tech, Inc., 303 Irene Street, Helena, MT 59601

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