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Andersen, Dane, NMENV

From: Andersen, Dane, NMENV
Sent: Thursday, January 3, 2019 10:38 AM
To: Andersen, Dane, NMENV
Subject: FW: Chromium Interim Measure Performance Monitoring Work Plan - NMED Response to N3B Comments
Attachments: N3B Responses to NMED Responses and Additional Comments for Cr IM PM Work Plan_122118.docx

From: Frank Johns <frank.johns@em-la.doe.gov>
Sent: Friday, December 21, 2018 8:57 AM
To: Andersen, Dane, NMENV <Dane.Andersen@state.nm.us>
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Subject: [EXT] RE: Chromium Interim Measure Performance Monitoring Work Plan - NMED Response to N3B Comments

Dane – Per my voice message, attached are N3B's responses to NMED's remaining comments on the subject work plan. These comments and responses have been discussed in chromium technical team meetings so the attached formalizes the results of those discussions. Please let me know if anything more is required. Thanks – Frank

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December 21, 2018

NMED REVISED DRAFT COMMENTS/QUESTIONS ON CHROMIUM INTERIM MEASURE PERFORMANCE MONITORING WORK PLAN, SEPTEMBER 2018

General Questions and Comments

NMED Comment

2.3 Locations, Frequency, and Suite for Performance Monitoring, page 4 –

IM monitoring at the southern property boundary is conducted by monitoring the response of R-50 S1 and S2 to injection at CrIN-4 and CrIN-5. Since R-50 is upgradient of the injection wells, it is not in an ideal location to monitor the IM performance. The September 28, 2018 performance monitoring report should determine if R-50 S1 and S2 is sufficient to effectively monitor the IM performance, and the potential need for additional monitoring well(s) downgradient of the injection wells.

DOE-EM/N3B Response

Locations like R-50 provide an especially useful opportunity to monitor performance because is it located side gradient and upgradient of nearby injection wells, CrIN-4 and CrIN-5, respectively. The tracer deployments into those injection wells (briefly discussed above) will also provide highly valuable insights into plume performance if one or more of the tracers is detected in R-50 (and downgradient SIMR-2). Further conversation about performance monitoring is recommended for future Technical Team meetings.

NMED Response

It is not apparent how responses to the IM will be measured at R-50 given its location upgradient and cross-gradient to the regional groundwater flow direction. If R-50 is in an adequate location to measure IM performance, DOE-EM/N3B should include in the Work Plan a brief description of how R-50 can be used to monitor IM performance, and what sort of response is indicative of IM performance, or the lack thereof.

DOE-EM/N3B Response

This comment was addressed in the Annual Progress Report on Chromium Plume Control Interim Measure Performance dated September 2018 (EM2018-0028) in the 3rd paragraph of Section 3.2. Because of the potential for injection water from CrIN-4 and CrIN-5 to advance have a radius of influence that is up- and side-gradient of the ambient groundwater flow, R-50 may be within the ROI and therefore see reductions in Cr concentrations associated with injection. R-50 may also see reductions in Cr concentrations because of capture from CrEX-1 and possibly CrEX-2. The tracer data will provide a primary line of evidence for understanding the cause of reductions in Cr concentrations in R-50. Future progress reports will present and discuss data from monitoring wells and discuss how the data relate to performance of the IM.

NMED Comment

1.0 Reporting, page 5, bullet #3 – For the water-table map shown on figure 3.0-2, was CrEX-3 pumping at the time?

DOE-EM/N3B Response

CrEX-1, CrEX-2, and CrEX-3 were pumping at a nominal 60 gpm each from Nov 13 through Nov 21.

NMED Response
DOE-EM/N3B should notate all future water-table maps to include this information or provide a narrative in the reports describing which IM wells were in operation (including the duration of operation) corresponding to the groundwater elevations depicted on the water-table maps.

DOE-EM/N3B Response
Details of extraction- and injection well operations will be included in future progress reports. Details will include pumping and injection dates and flow rates during the period of time for the water level map. Times that the wells were shutdown during the period will also be included.

NMED Comment
Figure 1.0-1, page 7 – *Nature and extent of contamination near R-62, south of CrPZ-5, and north of R-28 has not been determined; therefore, the extent of chromium contamination at the 50-ppb contour interval, as shown on the map near these wells, should be labeled accordingly with bolded question-mark symbols.*

DOE-EM/N3B Response
All portions of the line approximating the extent of the 50 ppb chromium concentration inherently have some degree of uncertainty depending on proximity of control points. Additional question marks will be added to future maps to depict levels of uncertainty beyond that intended by the dashed line depicting plume extent.

NMED Response
DOE-EM/N3B must include question marks at locations along the 50-ppb contour with poor control-points (such as those described above) on this map and all future maps.

DOE-EM/N3B Response
Additional question marks were added along the 50-ppb contour on Figures 1.01-1. 3.1-1, and 3.3-1 of the Annual Progress Report on Chromium Plume Control Interim Measure Performance dated September 2018 (EM2018-0028) in response to this comment. Future maps will consistently show question marks in the same areas where less dense monitoring-well data are available to provide more detailed definition of the location of the 50-ppb plume edge.

Additional NMED Comment
Section 2.3, page 4 – Locations, Frequency, and Suite for Performance Monitoring
During the June 20, 2018 Technical Team meeting, DOE/N3B indicated that monthly sampling will be performed at all CrEX wells as part of the IM Performance Monitoring. DOE-EM/N3B should revise section 2.3 to include monthly sampling for the CrEX wells.

DOE-EM/N3B Response
Sampling of wells will be adjusted as needed in concurrence with NMED, and those adjustments will be reflected in future progress reports. The CrEX wells are currently being sampled on a monthly basis. Changes in the monitoring frequency may be recommended in the future if appropriate and following on agreements with NMED during technical team meetings.

An agreement was reached during a meeting on November 26, 2018 regarding the purge volumes that will be removed for sampling in the piezometers (CrPZ locations) in the chromium area (CrPZ). The purge volume for each CrPZ will be 12 casing volumes from the December 2018 sampling round forward. In the Introduction section of future performance monitoring progress reports, any changes made to the operation or monitoring of the IM will be summarized.

The CrPZ sampling will be conducted quarterly according the table below.

CrPZ-1, CrPZ-2b (deep screen), CrPZ-3, CrPZ-4, CrPZ-5

Suite	Lab	Purge Protocol	Filtration (F/NF)
Metals	Offsite	At 12 casing volumes	F
Major anions	Offsite	At 12 casing volumes	NF
Low-level H3	Offsite	At 12 casing volumes	NF
Field Parameters	NA	Collect and log in 15 minute intervals during purge. Record final parameters at time of collection.	NA

F = Filtered
NF = Not Filtered

Additional NMED Comment
Table 2.0-1, page 13
The DOE-EM/N3B should revise this table to include monthly sampling for the CrEX wells.

DOE-EM/N3B Response
Refer to the response to the previous comment. Rather than revise the work plan, the NMED and DOE-EM/N3B agreed that any changes in operation or monitoring of the IM will be summarized in the introduction section of each performance monitoring progress report.
