



From: Pierard, Kevin, NMENV
To: LYNNES, KATHRYN D.HQE USAF AFGSC 377 MSG/SAF/IEE
Cc: Stringer, Stephanie, NMENV; CLARK, SCOTT C.GS-13 USAF AFCEC/CZO; KOTTKAMP, SHEEN T.GS-13 USAF AFCEC AFCEC/CZOW
Subject: RE: I got your message
Date: Friday, March 20, 2020 1:50:26 PM

Kate – Thank you for providing the NMED approval letter for the biodegradation workplan. After our call last Friday, I wanted to move quickly to follow up on the concerns you expressed, and I simply did not have this letter at my fingertips. I confirmed that this letter, in addition to the others you provided, was in our record. In response to concerns you expressed during our call last Friday, I reviewed our Disapproval letter again and reviewed the approved workplan for the EDB biodegradation study. I understood one of your concerns to be that our comments went beyond the scope of the workplan. After review it seems clear to me that our comments essentially fall into four “bins”, none of which require any additional field work or further analysis. These include comments: requiring revision to the report to clarify statements in the report (comments 3,4,6,7,8,12,14,15,17,18, 20,22,24,28,29, 31,32, 33,36,37,38, 39,40, 42,43,46,47,49,51,52,53,54); requiring response in letter form (2,5,13,16,34); for consideration in future studies (1,9,26,27,30,41,42,50,); and requiring no response (10,11,19,21,23, 25,35,44,45,48). (Note that comment 42 suggests both a revision to the report and future study)

Our cover letter states the pilot test confirmed that in situ biodegradation of EDB had occurred which, as you noted, was the primary objective of the pilot. The workplan describes the effort as “... primarily designed to evaluate the extent to which potential treatment amendments for in situ biostimulation and bioaugmentation enhance anerobic EDB biodegradation processes.” In addition, the workplan pilot test objectives includes the statement: “Information regarding the distribution of amendments in the subsurface will be collected primarily to aid interpretation of biodegradation effectiveness but may provide some insight into how similar systems may be scaled up for larger scale bioremediation treatments.”

Many of our comments are relevant to not only the pilot study that was conducted but the potential scale up or inclusion of this technology in any corrective measure evaluation. The success of the pilot in confirming that in situ biodegradation occurred means that this technology could be considered in the array of corrective measure alternatives. As we are both focused on moving this site to remedy selection expeditiously, I believe our comments can inform and streamline that process by identifying questions and shortcomings at this stage prior to development of corrective measures.

You were specifically concerned about our comments relative to LNAPL and your belief that this was beyond the scope of the pilot study. I note that LNAPL was a concern identified in the work plan. Specifically, effort that was made to identify a pilot location that would be free from LNAPL (WP page 10 Section 3.2 Well Installation para 3). The work plan also indicates that newly installed wells will be monitored for LNAPL (WP same para). The shallow monitoring wells, with screens above and below the water table, would obviously intercept any LNAPL that might be present and the work plan even references that these wells are screened in such a manner “... in order to detect any LNAPL that is present over the course of the study.” (WP same para). Work Plan Section 3.2.5 Pilot Test Groundwater Monitoring Wells states: “The shallow wells ... will include a drop pipe for

KAFB4962





collection of manual water level measurements (and to assess the presence or absence of LNAPL) prior to sampling events.”, and Work Plan Section 3.2.5.1 Well Construction notes that “... drill cuttings from just above and in the saturated zone will be screened for the presence of LNAPL and VOCs using a photo ionization detector ...” Work plan Section 3.4.3.1 Groundwater Sampling states: “Groundwater sampling for the pilot test consists of measuring for the presence of LNAPL, measuring groundwater levels, and using low-flow purging and sampling to collect representative groundwater samples for field and laboratory analysis.” and work plan Section 3.4.3.1.1 Measuring Groundwater and LNAPL Depths states: “Depth to water and depth to LNAPL (if present) will be measured in each groundwater monitoring well” All of this seems to make clear that although the main point of the study was to determine if biodegradation occurred, the presence of LNAPL was a concern and certainly within scope.

The fact that the workplan included emphasis on the presence or absence of LNAPL certainly seems to justify comments concerning LNAPL and our concern that LNAPL will be a continuing source of EDB. This also is completely relevant to any consideration to scale up the biodegradation option. Rather than focusing simply on the success or failure of the EDB biodegradation, it is equally important to keep this in context with the overall site remediation. Any remedy that would contemplate utilization of an EDB biodegradation option would clearly need to include alternatives to address any LNAPL to help assure success of the remedy in a reasonable period.

Specific comments in our Disapproval letter that I would like to address and clarify:

Comments 10, 19, 23, and 34 highlight anomalies that may have resulted from well construction, specifically the filter pack being placed from ten feet above the screen to the bottom of the screen. This design was consistent with the approved workplan. Our comments simply note that this design may have contributed to some variability in the data. As our letter indicates these comments require no response.

On comment 11, I want to clarify that this comment was associated with the use of this well for future monitoring that was mentioned in section 3.2.5.1 of the workplan. As our letter indicates this comment requires no response.

On comment 21, LNAPL recovery was not the focus of this pilot so I want to clarify that actions taken during the study, as outlined in the report, to prevent drawdown below the top of the screen were appropriate. As our letter indicates no response to this comment is required and the comment may be disregarded.

On comments 12, 23, and 24, biofouling is a concern identified. Section 3.4.2 of the workplan includes contingencies for biofouling, but it is unclear in the report if these contingencies were employed.

Comment 27, Pertains to a remedial option and potential future work rather than the Report itself. The Permittee statement on 3-12 of the Report is appropriate for this pilot study and the well design is consistent with the workplan. This comment may be disregarded.

I hope this helps. We would be happy to discuss this further with you either before or after your response to our comments. Let me know if you have any questions.

Kevin Pierard, Chief
Hazardous Waste Bureau
NM Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM. 87505
(505) 476-6035
kevin.pierard@state.nm.us
<https://www.env.nm.gov/>

From: LYNNES, KATHRYN D HQE USAF AFGSC 377 MSG/SAF/IEE <kathryn.lynnes@us.af.mil>
Sent: Friday, March 13, 2020 4:03 PM
To: Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>
Cc: Stringer, Stephanie, NMENV <Stephanie.Stringer@state.nm.us>; CLARK, SCOTT C GS-13 USAF AFCEC/CZO <scott.clark@us.af.mil>; KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>
Subject: [EXT] I got your message

Hi Kevin:

My iPhone sends calls from numbers it doesn't recognize directly to voice mail. I will put you in my contacts list so that doesn't happen again.

I have attached the following:

- The 12/12/2016 NMED approval of the work plan
- The 08/07/2018 NMED approval of the deferral of the bioaugmentation
- The 10/26/2016 NOI for the injection well
- The 12/16/2016 letter from the GWQB stating we do not need a discharge permit

Let me know if you need anything else. Stay safe!

Kate

Kathryn D. Lynnes, HQE

Senior Advisor, SAF/IEE
Bulk Fuels Facility Project
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117
505-846-8703 DSN 246-8703

kathryn.lynnes@us.af.mil