



28 February 2014

Mr. Tad Dow
Industrial Permits
Water Quality Division
Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

Subject: Closure Plan, ponds 6 and 7, 28 February 2014

Dear Mr. Dow:

This letter provides the Oklahoma Department of Environmental Quality (DEQ) with FMRI's revised Closure Plan for ponds 6 and 7. The revision is in accordance with items discussed and agreed upon between yourself and James Burgess of FMRI during a site visit on February 14, 2014. The items discussed were those of correspondence from DEQ to FMRI dated December 30, 2013 which found the original closure plan not approvable for listed reasons. The reasons and a response to each are as follows:

1. The plan relies on sludge sampling done in 2007. This information is outdated and more recent sampling must be done to determine the best method for closing the impoundments.

Response: A Pre-Closure Sampling and Analysis Plan of April 2007 was approved by DEQ June 2007. The results of the pre-closure sampling were provided to DEQ November 2007. A July 2008 letter from DEQ to FMRI concluded "These sampling results will be used to determine the next steps in the closure process for Pond Nos. 6 and 7."

There have been no process or operation activities at the site since the sampling was completed. There have been no changes in site conditions beyond those associated with decommissioning under the NRC approved Decommissioning Plan. The decommissioning activities that have occurred involve materials previously handled on site and thus are not a new or different source of potential contaminants. The decommissioning activities have not and do influence the use of ponds 6 and 7; i.e., it is the same storm water, treated by the same method, for the same reasons as has been occurring for decades. The sediments of the 2007 sample event are still in the ponds and represent the predominant volume of sediment in the ponds.

FMRI knows the historical sample results to be representative of current conditions. FMRI maintains that it is unnecessary to resample ponds 6 and 7 in support of closure activities.

2. Before any sludge or soil is removed, the sludge must be sampled. ...

Response: The response to item 1 is applicable to this item.

3. The plan says that the closure will be a "Clean Closure". However, the plan does not meet OAC 252:616-13-3(d)(7), requirements for a clean closure, those requirements are as follows:
- a. Provide an evaluation of the feasibility of clean closure of the surface impoundment, tank system site including a discussion of available technology, extent of contamination, and other factors; and

Response: FMRI considers this requirement essentially and effectively satisfied by:

- The Consent Order, particularly items 13, 14, and the submittals for items 24.a. and 24.b.; and
- The Pre-Closure Sampling and Analysis Report Ponds 6 and 7, November 2007.

- b. Discuss target clean-up levels of wastewater, the possible risks at those levels, and the methods to be used to determine that clean closure has been achieved.

Response: The Closure Plan of October 2013 at Section 4.1 and Table 1 intended to represent the U.S. EPA Region 6 RCRA Human Health Medium-Specific Screening Levels, Industrial Soil Supporting, Traditional Table, May 2013 as the target clean-up levels. The possible risks at those levels are understood by definition and application. The Closure Plan of October 2013 at Section 5.2 describes the method to be used to determine that clean closure has been achieved as soil sampling over the combined footprint of ponds 6 and 7.

The Closure Plan applies the EPA screening levels as target clean-up levels and determined that only arsenic exceeded those levels. Thus the scope of the soil sampling analysis was limited to arsenic. The Closure Plan recognizes that FMRI will require DEQ input to establish a clean-up level for arsenic in soil. The determination of this limit will inherently consider risk. As previously stated, the method to be used to determine that clean closure has been achieved will be soil sampling over the combined footprint of ponds 6 and 7.

4. The plan states that soil removed from the impoundments will be relocated to surface impoundment 3 using standard earth moving equipment. However, surface impoundment 3 is out of service and there is no provision for protecting the relocated soil from the elements if the relocated soil is contaminated.

Response: Surface impoundment 3 (F05, Pond 3) was originally used to store process residues during historical operations at the site. Transfer of process residues to Pond 3 was stopped in 1989. The NRC approved a Decommissioning Plan (DP) for the FMRI site in 2003. Pursuant to the DP, the process residues have been removed from Pond 3. No additional remediation has occurred related to Pond 3. The interior of Pond 3 has been stabilized by grading and vegetation to control erosion. Any soils relocated to Pond 3 would be subject to the same stabilization.

Pond 3 includes a French drain for its entire perimeter. Storm water collected in the impoundment and water collected by the French drain each continue to be transferred to

the site wastewater treatment plant as recognized in FMRI's OPDES Permit. Relocation of any soils to Pond 3 would not influence these transfers.

5. If more than one acre of land will be disturbed during the closure process, FMRI must obtain a Multi Sector General Permit (MSGP) for storm water, prior to beginning closure activities.

Response: FMRI has made application for a MSGP in support of the closure process for ponds 6 and 7.

6. The plan estimates that 40,000 cubic feet of sludge will be removed from the impoundments and placed in surface impoundments 8 and/or 9. Placing additional sludge, particularly in this amount, into a different surface impoundment will decrease the settling time in that impoundment and is not an approvable method of sludge disposal. FMRI must propose a method of sludge disposal that complies with OAC 252:616-13-3(d)(5).

Response: FMRI routes treated storm water to Pond 8 for settling then transfer to Pond 9 for additional settling. The sediment in ponds 6 and 7 came from ponds 8 and 9 in transferred water. The volume of sediment in ponds 6 and 7 is extremely small compared to the volume of the same sediment currently in either of Pond 8 or Pond 9. Pursuant to the Consent Order at items 24.a. and 24.b., FMRI has demonstrated that the effluent from Pond 9 can flow directly to Outfall 001 and maintain compliance with effluent limits in its OPDES permit.

The NRC approved decommissioning plan for FMRI site indicates that the sediments in ponds 6 through 9 will be subject to offsite disposal. Later submittals to the NRC state that FMRI is considering alternate methods for management of these sediments. FMRI is not describing or proposing the transfer of sediment from ponds 6 and 7 to ponds 8 or 9 as disposal.

7. The proposed closure plan does not provide a schedule for closure activities. FMRI must provide a time schedule indicating the major closure activities, approximate time to complete each activity, and the estimated date of final completion of all closure activities in accordance with OAC 252:616-13-3(d)(E) [sic].

Response: FMRI will complete the closure of ponds 6 and 7 on the following schedule:

- Begin construction for closure June 1, 2015
- Begin transferring sediment July 1, 2015
- Conduct final sampling for Closure Plan August 1, 2015
- Complete construction for closure November 1, 2015
- Submit written notification of closure to DEQ December 1, 2015

FMRI established the financial budget for the site at the end of 2013. It did not include provisions for closure of ponds 6 and 7. The financial budget for 2015 will include provisions for clean closure of ponds 6 and 7.

8. The impoundments must be closed in accordance with both DEQ and NRC requirements. It is DEQ's understanding that NRC will require FMRI to perform radiological surveys of the impoundments prior to license termination. For this reason, DEQ is of the opinion that the radiological surveys should be done prior to backfill and closure. Further, FMRI must address the performance and timing of radiological surveys in the revised closure plan and schedule.

Response: The Atomic Energy Act allows the U.S. Nuclear Regulatory Commission (NRC) to enter into agreements with State governors. The respective State agrees to regulate use of radiation and radioactive material using the same standards as the NRC. The State is subsequently recognized as an Agreement State. The State of Oklahoma became an Agreement State effective September 2000. The agreements are established with certain conditions some of which may limit the scope of the agreement. The Agreement for the State of Oklahoma includes a condition at Article II specifically retaining the authority and responsibility for regulation of source material with the NRC.

FMRI maintains the Muskogee site pursuant to NRC Source Materials License SMB-911 (License). The License authorizes remediation and decommissioning activities in accordance with the approved Decommissioning Plan of 2003 (DP). The DP describes the plans to remediate the site to the unrestricted release criterion and terminate the NRC license at the completion of remediation. However, the approval recognized areas of the DP for which certain assumptions or parameters would need to be verified prior to implementation. The NRC provided conditions to the License, to which the FMRI agreed, such that NRC's needs are met. Particularly, License Condition 35 requires: Licensee shall remediate the site to residual radioactive levels to ensure that exposure to residual radiation in all media from applicable pathways will not result in a dose exceeding 25 mrem/y, as specified in 10 CFR 20.1402. Licensee will establish remediation levels (DCGLs) as part of the Phase 3 Workplan, approved by NRC, that demonstrate the 25 mrem/y dose limit will not be exceeded.

The DCGLs (derived concentration guideline level) are radionuclide-specific activity concentrations corresponding to the release criterion. The DCGLs are derived from activity/dose relationships through various exposure pathway scenarios. The release criterion for the FMRI site is provided at License Condition 35 as the regulatory limit for dose of 25 mrem/y. Satisfaction of the release criterion is evaluated by the final status survey (FSS). The FSS is comprised of measurements and sampling to describe the radiological conditions of a site, following completion of remediation and decommissioning activities. The License includes several conditions requiring NRC approval of DCGLs and plans for FSS.

FMRI expects the site to be released for unrestricted use upon satisfaction of the Decommissioning Plan (DP) approved by the NRC. The DP recognizes that the NRC will require surveys and sampling to demonstrate satisfaction of limits on residual radioactivity (DCGLs) prior to license termination and release of the site. The DCGLs and the plans for surveys and sampling (FSS) must be approved by the NRC prior to implementation. Currently there are no approved DCGLs or FSS plans for the FMRI site. Additional to lack of jurisdiction, the State also has no germane rule or criteria. Thus attempt to address this issue within the Closure Plan would be meaningless. However, closure of ponds 6 and 7 at this time will not preclude application of yet-to-be approved DCGLs and FSS plans at a later date to support release of the site by the DP.

The above responses have been to varying degree incorporated into the revised Closure Plan. The Closure Plan includes more complete reference to correspondence identified in the above responses.

Please contact me if you have any questions.

Sincerely,

James Burgess for R. Compernelle

Robert Compernelle
FMRI
#10 Tantalum Place
Muskogee, OK 74403
918-687-6303

cc: James Burgess, FMRI

Attachment: Engineering Report Closure Plan Ponds 6 & 7, 28 February 2014