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October 19, 2015

Mary Kauffman
Caribou-Targhee National Forest
1405 Hollipark Dr.
Idaho Falls, Idaho 83401

Subject: Biological Selenium Removal Treatment Technology Fluidized Bed Bioreactor Pilot Study September 2015 Progress Report

Dear Mary,

This progress report summarizes key activities in September 2015 associated with the fluidized bed bioreactor (FBR) pilot study located near Hoopes Spring. This pilot study is being conducted as part of the Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS) to provide information on the effectiveness of the active biological treatment system in removing selenium and other COPCs from South Fork Sage Creek Springs and Hoopes Spring. Operation and monitoring of the pilot study follows the *Pilot Study Work Plan and Sampling and Analysis Plan (Work Plan/SAP), Biological Selenium Removal Treatment Technology Fluidized Bed Bioreactor* (prepared by Formation Environmental, dated September 2014, with revised text and tables dated March 5, 2015), along with Work Plan/SAP Addenda 01, 02, and 03 which Simplot submitted to the Agencies (and were subsequently approved) in the summer of 2015.

The FBR system has been offline since August 3, 2015. Similar to the previous shut downs, the FBR unit has been isolated, and no water has been processed through the reactor. In order to keep the sand filter media fluidized, untreated creek water was allowed to flow through the aeration tank and sand filter. During this shut down period, it was determined that filamentous sulfide oxidizing bacteria were growing in the aeration tank and fouling both the tank and the sand filter. Therefore, Work Plan/SAP Addendum 03 was proposed by Simplot and approved by the Agencies to add an oxidation step to the treatment train to remove sulfides prior to the aeration tank. The oxidation step consists of dosing the water with 27% hydrogen peroxide. In early October, the peroxide injection system was installed and initiation of the system is occurring.

Identification of Deliverables and Data Transmittals

No data were collected for the FBR Pilot Study during the month of September.

Upcoming Activities

The following activities associated with the fluidized bed bioreactor pilot study are scheduled through November 2015:

- The peroxide injection will be optimized as the system is restarted.
- Monitoring of the FBR system, according to Work Plan/SAP Addendum 01, will be initiated with Week 0 sample collection which is anticipated during the week of October 19.
- After review of the data collected from Weeks 0 through 4, Simplot will meet with the Agencies to discuss identification of interim water quality target parameters. This discussion is anticipated near the end of November, assuming Week 0 monitoring occurs the week of October 19.

Please contact me if there are questions regarding this monthly progress report.

Sincerely,

Monty Johnson
Environmental Engineering Manager
J. R. Simplot Company

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