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Subject:	Draft Contract Record 2014-01 ETPTS Media Removal Reconfiguration for Air Stripper
Date:	Tuesday, January 14, 2014 2:59:00 PM
Attachments:	DRAFT Contact Record 2014-01 ETPTS Media Removal Reconfiguration for Air Stripper 011014.doc

Carl, here is the Draft Contact Record for review and approval.

Upon approval, after incorporating any changes required for approval, we will add the approval date, remove “DRAFT” from the footer, post to the public website and send the email notification to stakeholders.

Thank you

David Ward

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: East Trenches Plume Treatment System (ETPTS) media removal and reconfiguration for air stripper treatment

Contact Record Approval Date:

Site Contact(s)/Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); John Boylan, Rick DiSalvo, Linda Kaiser, S.M. Stoller Corporation (Stoller)

Regulatory Contact(s)/Affiliation(s): Carl Spreng, Colorado Department of Public Health and Environment (CDPHE); Vera Moritz, U.S. Environmental Protection Agency (EPA)

Date of Consultation Meeting: December 5, 2013

Consultation Meeting Participants: Carl Spreng (CDPHE); Scott Surovchak (DOE); John Boylan, Rick DiSalvo, Linda Kaiser, George Squibb (Stoller)

Introduction: The ETPTS is designed to intercept and treat groundwater contaminated with volatile organic compounds (VOCs) from the East Trenches Plume. Routine maintenance of the ETPTS includes periodic removal of spent treatment media (zero-valent iron [ZVI] filings) and replacement with new ZVI. The ZVI media is contained in two, 12-foot-diameter cylindrical high-density polyethylene tanks, referred to as Cells 1 and 2. The ZVI is obtained from a source in Detroit, Michigan, and is trucked to the site for installation. Media removal and replacement is costly and labor intensive and requires the use of heavy construction equipment. The last ETPTS media replacement was performed in 2009, and based on historical operations of the ETPTS, routine media replacement is required approximately every 3 to 5 years. Routine maintenance to remove the spent ZVI media is planned for calendar year 2014.

VOC concentrations at the ETPTS surface water performance monitoring location POM2, located downstream of the system in South Walnut Creek, continue to meet Rocky Flats Legacy Management Agreement (RFLMA) Attachment 2, Legacy Management Requirements, Table 1, Surface Water Standards. However, because the ETPTS system effluent contains some VOC constituents at levels above RFLMA standards, the RFLMA Parties have consulted on ways to optimize treatment to further reduce the potential VOC contaminant load to surface water.

Contact Record 2012-02, "Improving treatment at the East Trenches Plume Treatment System (ETPTS) by adding an air stripper component," summarizes the RFLMA parties' consultation regarding installation of an air stripper in the ETPTS influent manhole to reduce VOC constituent concentrations upstream of Cells 1 and 2. This approach was based on the effective VOC removal by a pilot-scale air stripper installed in the Mound Site Plume Treatment System (MSPTS) effluent manhole in 2011, as discussed in Contact Record 2011-01, "Replace Mound Site Plume Treatment System (MSPTS) media and maintain/repair discharge gallery." The air stripper installation at the ETPTS influent manhole was completed in March 2013.

Information on the status of operation and performance of the MSPTS and ETPTS air strippers is provided in RFLMA quarterly and annual site surveillance and maintenance reports. RFLMA contact records and site surveillance and maintenance reports are available on the Rocky Flats public website at http://www.lm.doe.gov/rocky_flats/Sites.aspx.

While the ETPTS air stripper has reduced influent VOC concentrations by approximately an order of magnitude, also resulting in a significant reduction in effluent concentrations after ZVI treatment, routine maintenance to remove the spent ZVI media is needed.

Discussion: While planning for the maintenance to remove the ZVI media, DOE also evaluated the potential for addition of a commercially available air stripper unit to dramatically reduce or eliminate ZVI media in the ETPTS. To implement this approach, the air stripper unit would be installed as one phase of the ZVI media removal project. The emptied Cells 1 and 2 would not be refilled with ZVI but would instead serve as air stripper influent and effluent equalization tanks. The ETPTS piping would be reconfigured to accommodate the air stripper. This approach would also maintain the future ability to use ZVI media in the original configuration if desired.

The DOE and CDPHE RFLMA project coordinators consulted on December 5, 2012, regarding preliminary identification of appropriately sized commercially available air stripper units. Preliminary information from potential vendors of air strippers indicates that some models could provide adequate VOC removal for the ETPTS effluent to meet RFLMA surface water standards. Preliminary information also indicates that these units could be run in a batch treatment mode using the power available from the existing solar photovoltaic (PV) system that was installed for the ETPTS influent manhole air stripper, or with only modest additional PV capacity. Batch treatment mode would involve operating the air stripper for several hours per day, rather than continuously, to treat ETPTS influent water stored in Cell 1 and discharge of treated water to Cell 2. Treated effluent in Cell 2 would then flow at a controlled rate to the discharge gallery.

Based on DOE's evaluation of the ETPTS influent VOC concentration and flow rate, the amounts and types of VOCs that the air stripper will volatilize to the air will meet Colorado Air Quality Control Regulations exemption criteria for Air Pollutant Emission Notice (APEN) reporting thresholds and permitting.

The air stripper would be housed in a small enclosure for protection from the elements and sized and configured to allow maintenance of the air stripper components. The air stripper enclosure would be placed near Cells 1 and 2 in a location to minimize the disturbance of established vegetation or adverse impact to Preble's meadow jumping mouse critical habitat.

Piping reconfiguration work, installation of the wiring from the current ETPTS PV power system, and the air stripper enclosure is expected to involve soil disturbance that would require a RFLMA Soil Disturbance Review Plan, as provided in RFLMA Attachment 2, Section 4.1.

Resolution: It was agreed that DOE will prepare engineering designs for the reconfiguration and installation of a commercial air stripper unit, to be completed based on DOE's identification of an appropriate commercially available unit after interaction with potential vendors is completed. It is estimated that the engineering designs would be completed around the end of January 2014.

The RFLMA parties will consult in a timely manner on proceeding with the ETPTS reconfiguration for air stripper treatment to allow further planning and implementation as part of the ETPTS ZVI media removal project. Approval of the reconfiguration and of any required Soil Disturbance Review Plan for the work will be documented in a subsequent contact record.

Closeout of Contact Record: This contact record will be closed when consultation on the ETPTS reconfiguration project engineering design is completed, and the RFLMA parties determine whether or not to implement the project.

Resolution: Carl Spreng, CDPHE, approved this CR.

Contact Record Prepared by: Rick DiSalvo and John Boylan

Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, Stoller
Rocky Flats Contact Record File