400619

ERM NC, Inc.

15720 John Delaney Drive
Suite 120
Charlotte, NC 28277
Tele: 704-541-8345
Fax:704-624-7928
www.erm.com

May 9, 2014



Mr. Lucas Berresford
SCDHEC - State Voluntary Cleanup Section
Bureau of Land & Waste Management
2600 Bull Street
Columbia, SC 29201
803-896-4071

ERM

Subject: In-Situ Chemical Oxidation Pilot Test Work Plan Addendum
ISCO Pilot Test Performance Evaluation Criteria
Joslyn Clark Controls, LLC Facility
2013 West Meeting Street
Lancaster County, South Carolina

Dear Mr. Berresford:

On behalf of Joslyn Clark Controls, LLC, ERM NC, Inc. (ERM) is pleased to present this Addendum to the In-Situ Chemical Oxidation Pilot Test Work Plan dated April 8 (and submitted April 22), 2014. The purpose of this Work Plan Addendum is to present criteria for gauging the effectiveness of the pilot test results.

As with any pilot test, the ultimate objective is to identify and evaluate a potentially applicable technique for reducing contaminant concentrations in groundwater. For the Joslyn Clark facility, the pilot test targets reduction of trichloroethene (TCE) at the source area inside facility building. Success or failure of a given technology is subjective. Because the proposed technology involves a known or expected chemical reaction, the theoretical destruction rate of TCE using the ISCO technology should be 100%. However, subsurface conditions rarely mirror laboratory or theoretical conditions. Therefore, an objective of the pilot test will be to evaluate the effectiveness of the delivery system; that is, the ability of the injected materials to come into contact with the VOC mass. Another objective will be to evaluate the significance and the degree of any "rebound" in TCE concentrations following the injection. In general, a successful pilot test would include the following elements:

1. The presence of sodium permanganate (denoted by a purple color) in one or more of the downgradient observation wells, illustrating a certain radius of influence;

2. A measurable decrease in TCE concentrations both in the short term and over time (60 to 70% reduction after a single injection event would be optimal) in one or more pilot test wells; and

3. A minimal amount (~20 to 30%) of rebound of TCE concentrations observed in the monitoring and observation wells following the initial injection.

The characterization of the pilot test as successful or not is a performance-oriented task, and will look at all of the above referenced elements, and others, in total. Based on the results and evaluation, a second ISCO pilot test may be recommend in order to gather additional data for further evaluation.

Should you have any additional questions or comments, feel free to contact us at (704) 541-8345.

Sincerely,

Rick Tarravechia, P.G.
Partner in Charge


Michael Pressley
Project Manager

cc: Mr. Carl Grabinski - Joslyn Clark Controls