



DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, MCAAP
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

November 24, 2015

U-013-16

SUBJECT: Semiannual Status Report (June 2015 to December 2015) of the Pilot Study Class V Aquifer Remediation Injection Wells at Camp Stanley Storage Activity, Boerne, Texas, TCEQ Authorization No. 5X2600645; IHWCA#69026; CN602728206/RN100662840

UIC Permits Section
Texas Commission on Environmental Quality
Underground Injection Control Permits Section
Radioactive Materials Division
P.O. Box 13087 (MC-233)
Austin, TX 78711-3087

UIC Permits Team:

The Camp Stanley Storage Activity (CSSA), McAlester Army Ammunition Plant, U.S. Army Field Support Command, Army Materiel Command, U.S. Army, is submitting this semiannual report summarizing the injection activities performed at the on-post Area of Concern (AOC)-65 site. The activities performed are part of the planned In-situ Chemical Oxidation (ISCO) remedial efforts to treat chlorinated compounds in groundwater. The ISCO injection activities include the injection of a sodium permanganate solution in concentrations of 0.44 and 0.9 mg/L into five infiltration cells located within AOC-65. Additionally, three chemical dye tracers were injected within existing wells as part of an initial tracer study.

This semiannual letter contains data as specified by the Texas Commission on Environmental Quality (TCEQ) Underground Injection Control (UIC) permit for the months of June 2015 through December 2015 including a report of the injection activities and the status of the activities over the past six months.

Injection activities during this time period included the application of 3,500 gallons of sodium permanganate solution (0.44 g/mL) in August, 2015 and 7,000 gallons of sodium permanganate solution (0.9 mg/L) in November 2015. In August, the applied ISCO solution was distributed among the new infiltration cells, with 1,000 gallons applied in each of the three exterior cells and 250 gallons applied in each of the interior vault cells. In November, distribution of ISCO solution was prioritized in the northern infiltration cell (NIC) (3,750 gallons), and the two interior vault cells (east vault cell [EVC] and west vault cell [WVC]) with 1,075 gallons split between the two. The remaining solution was applied in the remaining exterior cells with 1,250 gallons applied in the middle infiltration cell (MIC), and 925 gallons applied to the south infiltration cell (SIC), as shown in Figure 1.

Ancillary activities associated with ISCO injection efforts included the injection of three dyes in nearby vapor extraction wells (VEW-15, VEW-32, and VEW-27) for a

tracer study in July 2015 and the construction of the five new infiltration cells at AOC-65. Injected dyes included less than a pound each of Eosine (VEW-15), Fluorescein (VEW-32), and Rhodamine WT (VEW-27). Carbon packs suspended within surrounding VEWs were allowed to sit for a week before being shipped to the lab for analysis. Four weeks of dye monitoring were completed following initial dye application.

Construction of five new infiltration cells at AOC-65 began in August and was completed in October 2015. Three infiltration cells with dimensions of 10-feet-wide by 20-feet-long, and depths of 5-feet, 10-feet, and 15-feet were constructed along the road west of Building 90; and two infiltration cells with dimensions of 2-feet-wide by 14-feet-long by 2-feet-deep were constructed within a cement-lined vault inside Building 90. As-Built Drawings of the five new infiltration cells were submitted to the UIC Permits Team in a Transmittal of As-Built Drawings letter dated October 20, 2015.

Ongoing monitoring of groundwater for VOCs, metals, anions (chloride and sulfate), permanganate, water quality parameters (pH, DO, ORP, and conductivity) are completed monthly at a selection of VEWs, treatability study wells (TSWs), and within the infiltration cells. The next monitoring effort is anticipated to begin in December, 2015. Monitoring is anticipated to continue on a quarterly basis following the December sampling effort, and no additional ISCO injections are anticipated during the next six month period (January to June 2016).

If you have any questions regarding the information contained in this letter, please feel free to contact me at (210) 295-7416 or Ken Rice, Parsons, at (512) 719-6050.

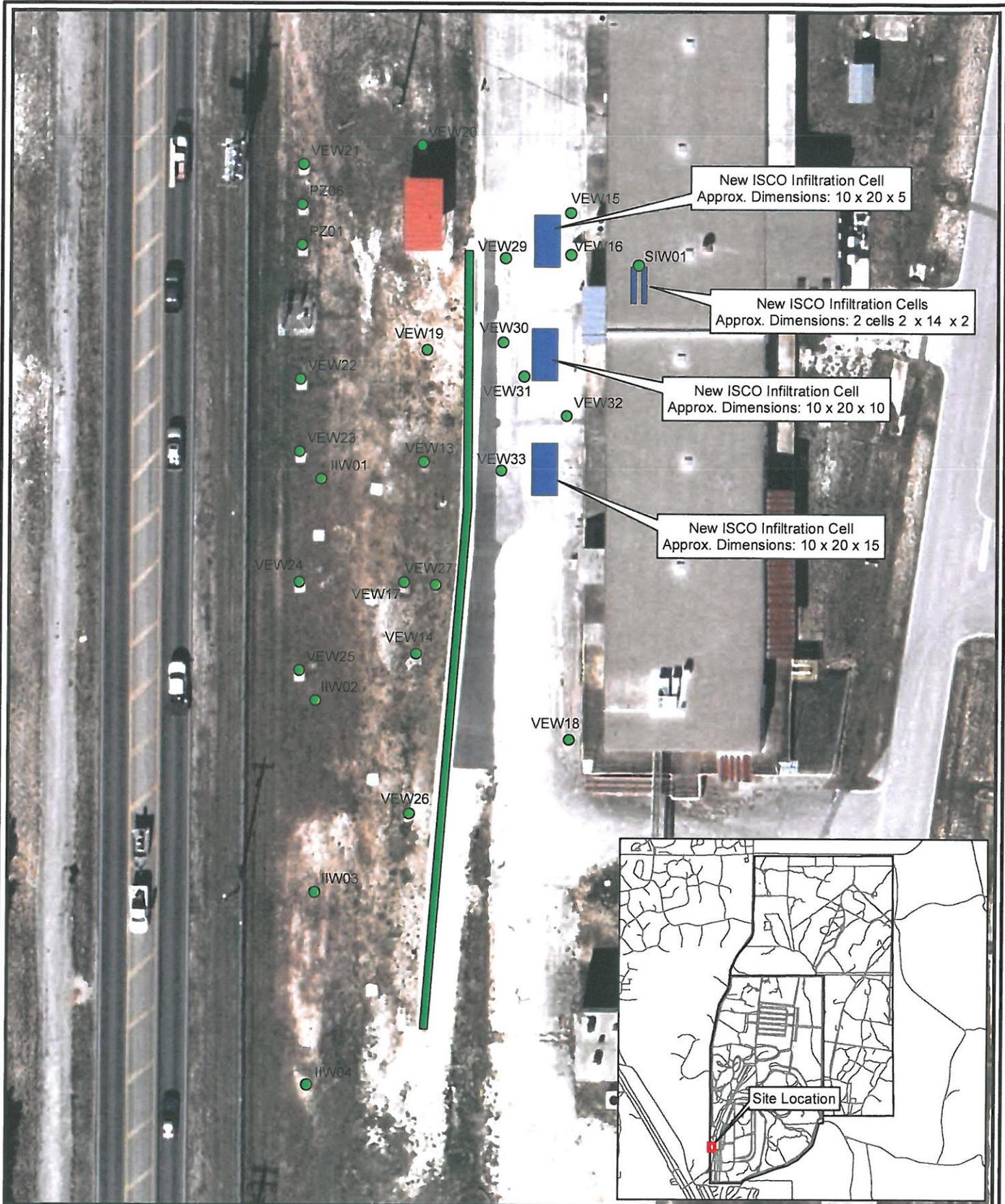
Sincerely,



Jason D. Shirley
Installation Manager

Enclosure

cc: Felicia Kraintz, CSSA Environmental Office
Julie Burdey, Parsons
Ken Rice, Parsons
File: 640149.810000.04300



New ISCO Infiltration Cell
Approx. Dimensions: 10 x 20 x 5

New ISCO Infiltration Cells
Approx. Dimensions: 2 cells 2 x 14 x 2

New ISCO Infiltration Cell
Approx. Dimensions: 10 x 20 x 10

New ISCO Infiltration Cell
Approx. Dimensions: 10 x 20 x 15



Site Location



0 50 100 Feet

- Existing ISCO Injection Wells
- █ Existing ISCO Injection Trench
- █ New ISCO Infiltration Cells

Figure 1

AOC-65 ISCO Wells and
Infiltration Cells
Camp Stanley Storage Activity

PARSONS