



February 19, 2010

Project 1603.044.0

Ms. Mary Jane McIntosh  
Community Co-Chair  
12033 Olive St.  
Norwalk, California 90650

**Re: Second RAP Addendum Progress Update, SFPP Norwalk, 15306 Norwalk Boulevard,  
Norwalk, California**

Dear Ms. McIntosh:

Pursuant to your request, AMEC Geomatrix, Inc. (AMEC), has prepared this letter on behalf of SFPP, L.P. (SFPP), an operating partnership of Kinder Morgan Energy Partners, L.P., to summarize remediation work performed at the Defense Fuel Support Point – Norwalk at 15306 Norwalk Boulevard in Norwalk, California (the site) as part of implementation of the Second Addendum to the Remedial Action Plan<sup>1</sup> (Second Addendum) and the progress achieved through that work. This letter also describes additional work performed that was not part of the Second Addendum and provides an update to the schedule previously presented in the Second Addendum.

#### **IMPLEMENTATION OF THE SECOND ADDENDUM**

Following Regional Water Quality Control Board, Los Angeles Region (RWQCB) approval in April 2007, implementation of the Second Addendum began with expansion of the existing remediation system. Installation of seven additional soil vapor extraction (SVE) wells and conversion of four existing SVE wells to dual-phase extraction (DPE) wells was accomplished during May through July 2007. The new SVE wells were connected to the SVE system during June and July 2007. The system expansion work was performed in accordance with the Second Addendum and during a timeframe similar to that estimated for this work in the Second Addendum.

Between August and December 2007, additional work was performed to address the detection of free product in the new SVE wells and to improve the performance of the remediation system. The groundwater treatment system capacity was increased by upgrading the control system and installing larger 2000-pound capacity liquid-phase granular activated carbon (LGAC) vessels to replace the 1500-pound capacity LGAC vessels. Additional total fluids extraction (TFE) pumps were installed in eight SVE wells containing free product and an additional air compressor was installed in December 2007 to operate the additional TFE pumps. The new TFE pumps were phased in to operation during December 2007 and January 2008. This additional work was not anticipated in the Second Addendum but was found to be necessary; completion of this additional work added approximately five months to the originally-anticipated schedule. Full-

---

<sup>1</sup> Geomatrix Consultants, Inc., 2006, Second Addendum to Remedial Action Plan, Defense Fuel Support Point Norwalk, Norwalk, California, November 30.

P:\S1603\1603.044.0\Docs\Second Addendum Progress Review.doc

Ms. Mary Jane McIntosh  
February 19, 2010  
Page 2

scale system operation with these enhancements began in January 2008. After operating the full-scale enhanced system for one year, the first Annual Remediation Progress Report was submitted to the RWQCB on January 15, 2009 in accordance with the schedule outlined in the Second Addendum.

Consistent with the Second Addendum, rebound testing of the SVE system was performed according to schedule after concentrations of volatile organic compounds (VOCs) in the influent vapor had decreased and remained low. The SVE system was shut down in November 2008 and remained shut down until January 2009 to observe the magnitude of VOC concentration rebound in soil vapor. After VOC concentrations had been given time to rebound, the SVE system was restarted in January 2009. In the months prior to the rebound test, VOC concentrations in extracted soil vapor varied between approximately 25 and 65 parts per million by volume (ppmv). At system restart following the rebound test, VOC concentrations in extracted soil vapor were measured at an initial peak of approximately 1,120 ppmv and varied between approximately 100 ppmv and 200 ppmv for several months. The increase in VOC concentrations in soil vapor following the rebound test period resulted in increased mass removal rates during first quarter 2009. An additional SVE rebound test was conducted in April and May 2009 and the SVE system was again restarted based on the VOC concentrations measured. Based on the results of these first two rebound tests, the SVE system will continue to operate to remove fuel hydrocarbons that remain at the site.

The schedule presented in the Second Addendum assumed that after approximately two years of operation of the full-scale system (February or March 2010), the SVE system would be replaced with a lower flow rate bioventing system to continue ventilating the subsurface to promote biodegradation of residual fuel hydrocarbons. However, because free product is still present at the site and VOC concentrations in soil vapor showed appreciable rebound during previous testing, SVE will continue to be performed until free product has been removed or significant rebound of VOC concentrations in soil vapor no longer occurs. The SVE system is also currently being used to ventilate the subsurface to achieve the bioventing objectives that would have been addressed with a lower flow rate system.

## **REMEDIATION PROGRESS**

As of the end of fourth quarter 2009, the total mass of VOCs removed by SVE was approximately 15,631 pounds since implementation of the Second Addendum system upgrades. This cumulative mass does not include the mass removed by biodegradation. Approximately 18.5 million gallons of groundwater have been extracted since implementation of the Second Addendum system upgrades. Groundwater elevations and product thicknesses in the south-central area have generally decreased during this same period. In August 2008, the West Side Barrier system was shut down based on the reduced lateral extent and low concentrations of methyl tert-butyl ether (MTBE) and 1,2-dichloroethane (1,2-DCA) west of the site.

In July 2009, elevated concentrations of VOCs, total petroleum hydrocarbons quantified as gasoline (TPHg), and total petroleum products quantified as site-specific fuel product (TPHfp)

Ms. Mary Jane McIntosh  
February 19, 2010  
Page 3

were detected in well PZ-5. The increased concentrations of these fuel constituents are likely related to the TFE pump in GMW-O-15, which apparently had been inadvertently left out of the well since the groundwater monitoring event in April 2009. The pump was reinstalled in GMW-O-15 and restarted in October 2009.

### **ADDITIONAL ASSESSMENTS AND EVALUATIONS**

In addition to implementing the Second Addendum, SFPP performed several tasks during 2008 and 2009 that contributed to a refined understanding of site conditions. The additional information generated by these tasks supports system performance evaluation and enhancement of overall remediation progress.

During the first half of 2008, AMEC prepared for and performed additional off-site assessment to delineate the subsurface impacts observed near the off-site 24-inch block valve area during Parsons' site investigations in Holifield Park during 2006 and 2007. The 2008 assessment activities included soil gas sampling at three locations, lithologic profiling using cone penetration test (CPT) methods at two locations, and discrete depth groundwater sampling at the CPT locations. Soil gas sampling indicated that no VOCs were reported above their respective California Human Health Screening Levels (CHHSLs) in any of the soil gas samples. Discrete-depth groundwater sampling delineated the lateral extent of dissolved fuel constituents to the east (CPT-1). Vertical delineation of the dissolved fuel constituents was completed to the base of the uppermost groundwater zone.

During December 2008 through February 2009, AMEC developed and submitted to the RWQCB a Preliminary Conceptual Site Model (preliminary CSM) reflecting SFPP and AMEC's understanding of site conditions and focused on groundwater impacts beneath the site and adjacent off-site areas. The goal of the preliminary CSM was to establish a framework that will assist SFPP and DESC in developing an updated joint CSM for planning continued effective and efficient remediation efforts. The preliminary CSM will be refined and updated in the future with additional data from the Defense Energy Support Center (DESC), new data from recent investigations, and input from the RWQCB when received. It is anticipated that updates to the preliminary CSM will be submitted to the RWQCB in an updated CSM to be developed jointly by SFPP and DESC.

In January 2009, AMEC prepared and submitted a work plan to perform supplemental vertical delineation of dissolved fuel constituents in the off-site 24-inch block valve area. The work plan was approved by the RWQCB in July 2009 and field work was performed in November 2009 after finalizing the access agreement between SFPP and the City of Norwalk. The supplemental vertical delineation of the dissolved fuel constituents in the off-site area near the block valve was performed to assess the potential presence of fuel constituents in the Exposition aquifer. Discrete-depth groundwater sampling in the Exposition aquifer indicated no impact to the Exposition aquifer in this area. A report summarizing the results of this investigation is forthcoming.

Ms. Mary Jane McIntosh  
February 19, 2010  
Page 4

During November and December 2009, AMEC performed a capture zone analysis for pumping in the southeastern part of the site. This evaluation was initiated in response to increasing concentrations of dissolved fuel constituents in well PZ-5, which could have resulted because pumping from GMW-O-15 had been inadvertently discontinued as described above and during the October 2009 Restoration Advisory Board (RAB) meeting. The RWQCB requested information on the current remedial pumping configuration and confirmation of the performance of remedial pumping. The current pumping configuration, development of a groundwater model to evaluate remedial system pumping configurations, and the results of predictive simulations showing hydraulic capture based on current pumping conditions were provided to the RWQCB in a letter dated December 21, 2009. Recommendations for collecting groundwater elevation data to verify the groundwater model results were also presented.

In November 2009, selenium was detected in the groundwater treatment system effluent at concentrations above the effluent discharge limit set forth in the National Pollutant Discharge Elimination System (NPDES) permit for the system. As a result, SFPP shut down the system to comply with permit discharge limitations and performed further selenium evaluation. The selenium evaluation is ongoing and has included evaluating selenium concentrations in groundwater and potential changes to current treatment or discharge practices. SFPP discussed a TFE system restart plan with the RWQCB that included restarting selected wells with selenium concentrations below the NPDES permitted average monthly effluent limit (AMEL) of 4.1 micrograms per liter ( $\mu\text{g/L}$ ). Based on the results of selenium sampling performed during December 2009, 9 of 22 TFE wells in the south-central and southeastern areas were selected to resume operation, with other wells resuming operation as conditions allow. SFPP also performed additional maintenance and upgrades on the groundwater treatment system while the system was shut down. The groundwater and total fluids extraction pumps were cleaned and repaired or replaced as necessary, some conveyance lines were rebuilt, and components of the manifold were upgraded. The treatment system was restarted with a limited number of wells operating on February 4, 2010.

#### **UPDATED REMEDIATION SCHEDULE**

The Second Addendum presented an estimated project schedule beginning with RWQCB approval, (anticipated at that time to occur in December 2006) and ending with submittal of a Site Closure Request to the RWQCB, which was estimated to occur in August 2012. This schedule was not based on modeled removal rates, but on a desire to aggressively remediate the impacted soil and groundwater. As such, some of the target dates can only be estimated and the final completion date will be based on site conditions. As described above, the Second Addendum was approved by the RWQCB in April 2007, followed by several months of remediation system enhancements, and two years of full-scale system operation since implementing the Second Addendum. The updated remediation schedule, taking into account the additional work performed and the current understanding of site conditions including the continuing presence of free product, is presented below. The remediation schedule will be further updated in the future, if necessary, based on observed remediation progress and new findings.

Ms. Mary Jane McIntosh  
 February 19, 2010  
 Page 5

	Date Completed or Projected	Original Projected Date
<b>Completed Tasks:</b>		
Receive Approval from RWQCB	April 2007	December 2006
Begin Remediation System Expansion	May 2007	N/A
Begin Upgrades to Groundwater Treatment System	August 2007	N/A
Complete Remediation System Improvements	December 2007	February 2007
Full-Scale Remediation System Startup	January 2008	N/A
Begin SVE Rebound Testing	December 2008	August 2008
Submit First Annual Remediation Progress Report	January 2009	February 2008
Submit Second Annual Remediation Progress Report	January 2010	N/A
<b>Future Tasks:</b>		
Complete SVE Rebound Testing	As Conditions Allow	February 2009
Submit Third Annual Remediation Progress Report	January 2011	N/A
Begin Bioventing Operation	January 2011	March 2009
Submit Fourth Annual Remediation Progress Report	January 2012	N/A
Begin Bioventing Rebound Testing	January 2012	December 2009
Begin Verification Groundwater Monitoring	January 2012	June 2010
Complete Bioventing Testing	July 2012	June 2010
Submit Fifth Annual Remediation Progress Report	January 2013	N/A
Complete Verification Groundwater Monitoring	July 2013	June 2012

Ms. Mary Jane McIntosh  
February 19, 2010  
Page 6

	Date Completed or Projected	Original Projected Date
Submit Closure Request to RWQCB	September 2013	August 2012

If you have any questions regarding this project, please contact Stephen Defibaugh of KMEP at 714-560-4802 or either of the undersigned.

Sincerely yours,  
AMEC Geomatrix, Inc.



Alex Padilla  
Staff Engineer



Shiow-Whei Chou, PE  
Senior Engineer

cc: Mr. Stephen Defibaugh, KMEP  
Mr. Jeffrey Hu, RWQCB  
Lt. Col. Jon Ramer, DESC  
Mr. Kola Olowu, DESC  
Mr. Redwan Hassan, Parsons  
Ms. Mary Lucas, Parsons  
Dr. Eugene Garcia, RAB  
Mr. Bob Hoskins, RAB  
Ms. Tracy Winkler, RAB  
Mr. Jim Biederman, GSA  
Ms. Nancy Matsumoto, WRD  
Mr. Steven Hariri, DTSC  
Minxia Dong, Norwalk Regional Library  
Ms. Adriana Figueroa, City of Norwalk  
Mr. Charles Emig, City of Cerritos  
Mr. Bart MacNeil, Dolland Elementary School  
Office of Senator Barbara Boxer  
Office of Congresswoman Grace F. Napolitano  
Office of Assemblyman Tony Mendoza  
Office of State Senator Ron Calderon