



Linda S. Adams  
Secretary for  
Environmental  
Protection

# California Regional Water Quality Control Board Central Valley Region



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N60211\_000737  
CROWS LANDING  
SSIC NO. 5090.3.A

24 January 2007

Mr. Jim Sullivan  
Department of the Navy  
Base Realignment and Closure  
Program Management Office West  
1455 Frazee Road, Suite 900  
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**27 DECEMBER 2006 DRAFT INTERIM REMEDIAL ACTION TECHNOLOGIES  
EVALUATION, INSTALLATION RESTORATIONS PROPRAM (IRP) SITE 17,  
ADMINISTRATION AREA PLUME, NASA CROWS LANDING FLIGHT FACILITY, CROWS  
LANDING, STANISLAUS COUNTY**

We have reviewed your 27 December 2006 *Draft Interim Remedial Action Technologies Evaluation*, which your consultant, Tetra Tech EC, Inc., prepared. A summary of the proposed interim remedial action is presented below.

- **IRP Site 17**
  - Constituents of concern (COCs) are carbon tetrachloride (CT) and chloroform (CF).
  - Proposed remedial technologies are anaerobic enhanced in-situ bioremediation using EHC™ (a slow release plant-based proprietary substance that aids in the growth of indigenous microorganisms) and in-situ chemical oxidation.
  - Injection of zero valance iron (ZVI) is to be retained for consideration, but will not be pilot tested because it is thought to be a proven technology.
- **UST Cluster 1 and UST Site 117**
  - COCs are benzene and 1,2-dichloroethane (1,2-DCA).
  - Proposed remedial technologies are aerobic enhanced in-situ bioremediation using EHC-O™ (a source of slow-release oxygen, macro- and micro-nutrients, and a pH buffering agent) and in-situ chemical oxidation.

*California Environmental Protection Agency*

Biological treatment is considered the least expensive technology and the treatment that is most compatible with monitoring and natural attenuation (MNA), which is believed to likely be the final remedial action. Both biological and chemical remedial alternatives will be pilot tested because it is unknown which, if either, will perform effectively. However, biological treatment, because of its cheaper economics, will be pilot tested first, and if proven effective, will be implemented without conducting chemical oxidation pilot testing.

Prior to conducting the pilot tests, a workplan will be prepared outlining the pilot testing and will be submitted for agency review.

Once the pilot tests are completed, a report summarizing the evaluation of the technologies will be provided, including a recommendation as to which remedial alternative to implement.

### Comments

The remedial alternatives selected for evaluation appear reasonable. Additionally, the proposed approach to evaluating the various technologies also appears reasonable. As such, the Water Board has no objections to the Navy proceeding with evaluating the various remedial technologies.

If you have any questions, please contact Greg Issinghoff at 559-488-4390.



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