

National Aeronautics and  
Space Administration  
**Ames Research Center**  
Moffett Field, CA 94035-1000

N60211\_000329  
CROWS LANDING  
SSIC NO. 5090.3.A



Reply to Attn of:

QE:218-1

OCT 15 2001

Marianna Potacka  
BRAC Environmental Coordinator  
BRAC Operations  
Southwest Division, Naval Facilities Engineering Command  
1230 Columbia Street, Suite 1100  
San Diego, CA 92101

Dear Ms. Potacka,

NASA has received from the Navy the following document: Action Memorandum for Time-Critical Removal Actions at the National Aeronautics and Space Administration (NASA) Crows Landing Flight Facility, Administration Area Plume, 1-2 Dichloroethane (1,2-DCA) and Carbon Tetrachloride Source Areas at Installation Restoration Program (IRP) Site 17. NASA has reviewed the documents and the comments are provided as Attachment 1 with this letter.

Thank you for the opportunity to review this document. NASA looks forward to your responses to these comments. If you have any questions, please call me at 650-604-0237.

Sincerely,

A handwritten signature in black ink that reads "Donald M. Chuck". The signature is written in a cursive, slightly slanted style.

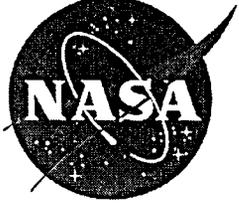
Donald M. Chuck  
Manager, Restoration and Subsurface Programs

cc: Lynn Hornecker, SWDIV  
F. Andrew Piszkin, SWDIV  
Marie Avery, SWDIV  
James Barton, RWQCB  
Francesca D'Onofrio, DTSC  
Richard Jantz, Stanislaus County  
Brad Hicks, Stanislaus County  
Sandy Olliges, NASA (letter only)

# ATTACHMENT 1

DESIGN AND DOCUMENT REVIEW - COMMENTS

JOB ORDER NO.

COMMENTS BY Don Chuck	CODE QE	PHONE 650-604-0237	DATE 10/2/2001
PROJECT TITLE AND LOCATION Action Memorandum for Time-Critical Removal Actions at the NASA Crows Landing Flight Facility, Administrative Area Plume Crows Landing, California US Navy			

## GENERAL COMMENTS

Time-critical removal actions are a response to a release that poses a risk to the public health and the environment such that actions must be initiated within six months following the approval of the Action Memorandum (USACE, 1994, NAVFAC, 1997). This document has not demonstrated the need for a time-critical removal action (TCRA). The proposed actions in this TCRA are not supported by any data that show a significant reduction in mass or potential harm to public health or the environment. No rationale has been provided as to why groundwater extraction is limited to 120 days or 30,000 gallons. Considering the amount and extent of contamination present, a non-time-critical removal action is more appropriate for addressing the groundwater at Crows Landing.

A conceptual model of the hydrogeology must be presented to support the actions proposed in this TCRA. At a minimum, the model should discuss in more detail the geological setting, the transport mechanism for spreading the contamination, and the rationale for the location of extraction wells and observation wells.

Earlier data presented in previous investigations indicate that the soils at Crows Landing get finer as one goes from the Corcoran Clay to the surface. Soils at the Corcoran Clay have coarse sands and gravels. As a result, most of the agricultural and domestic wells are screened right at this level as well as below the clay. Pumping from the agricultural wells may have caused downward vertical gradients that have drawn contaminants down lower into the aquifer. A case could be made that the vertical gradients may be the major transport mechanisms. This is especially evidenced by the fact that the carbon tetrachloride is already being seen at Corcoran Clay and the petroleum contamination at Cluster 1 is as deep as it is. Once at that level, the contamination could then spread horizontally along the clay through more transmissive sands and gravels. The implication of this is that there is more of a risk of spreading of contamination downward and then horizontally along the Corcoran Clay than there is of horizontal spreading at the groundwater surface. This is evidenced by the fact that even after more than 60 years, contamination has not left the base. A removal action to address the vertical migration of the plume could be considered more urgent than what has been proposed in this action.

## COMMENT 1

Sect. I, 1<sup>st</sup> Par., Last Sent., Pg. 1

The groundwater gradient direction is described as northeast. In past groundwater reports the groundwater exhibited a divide in the area of the administration plume with some flow directed toward the southeast. The position of the divide and the flow directions varied with time. The flow maps that have been presented in the last three quarterly reports were based on data using fewer of the wells than previous reports. Using only partial data may give a false impression of the gradient slope and direction. Failure to use all data in determining gradient and flow direction could miss areas that may not be flowing to the northeast. Having a clear picture of the flow conditions at the Crows Landing Flight Facility (CLFF) is important if any injections are to be done.

## COMMENT 2

Sect. 1, Par. 5, Pg. 2

While it is correct that the Navy is the lead federal agency, 42 U.S.C. Section 9620(a)(4) [CERCLA 120 (a)(4)] states:

### (4) State laws

State laws concerning removal and remedial action, including State laws regarding enforcement, shall apply to removal and remedial action at facilities owned or operated by a department, agency, or instrumentality of the United States or facilities that are the subject of a deferral under subsection (h)(3)(C) of this section when such facilities are not included on the National Priorities List. The preceding sentence shall not apply to the extent a State law would apply any standard or requirement to such facilities which is more stringent than the standards and requirements applicable to facilities which are not owned or operated by any such department, agency, or instrumentality

Also, from 10 U.S.C. Section 2705(b)

### (b) Comment by EPA and State and Local Authorities. -

(1) Release notices. - The Secretary shall ensure that the Administrator of the Environmental Protection Agency and appropriate State and local officials have an adequate opportunity to comment on notices under paragraphs (1) and (2) of subsection (a).

(2) Proposals for response actions. - The Secretary shall require that an adequate opportunity for timely review and comment be afforded to the Administrator and to appropriate State and local officials after making a proposal referred to in subsection (a)(3) and before undertaking an activity or action referred to in subsection (a)(4). The preceding sentence does not apply if the action is an emergency removal taken because of imminent and substantial endangerment to human health or the environment and consultation would be impractical.

## COMMENT 3

Sect. I, Par. 8, Pg. 2

This paragraph includes aquifer testing as part of this TCRA. A work plan should be provided along with a figure describing the wells to be used (both pumping and observation) and the procedures to be followed for the test. The purpose and the objectives for the test must be provided. It is also necessary to provide the conceptual model of the hydrogeology that is being used to determine locations of aquifer tests and extraction wells.

## COMMENT 4

Sect. I, Par. 9, Pg. 2

The first sentence states that TCRA will "... will reduce the potential exposure to nearby human populations and animals from hazardous substances, and will reduce the potential for migration of the plume to the adjacent properties." It is unclear from this memorandum how the proposed TCRA will accomplish these goals. The extraction of the contaminated water and storage on site will increase potential exposure to the environment. As long as the contaminated water is on site in a tank, it could be released to the environment through a leak or spillage during pumping to and from the storage tank. Additional potential exposure is involved with the transport of the waste to the disposal/treatment facility.

It is unclear how the TCRA will reduce migration from the site since the pumping rates are low and depths are shallow.

Finally, the memorandum should explain how the TCRA will provide information on aquifer characteristics. In order to obtain robust data on the aquifer for remedial selection and design, the aquifer will need to be stressed more and monitored in several wells. Additional information needs to be provided to show how this will be done.

## COMMENT 5

Sect. II. A. 1., 4<sup>th</sup> Par., 2<sup>nd</sup> Sent., Pg. 5

Please define what is meant by "optimization activities."

## COMMENT 6

Sect. II. A. 1., 5<sup>th</sup> Par., 3<sup>rd</sup> Sent., Pg. 6

The sentence states that the TCRA at the dry well was completed in late June 2001. Did the TCRA achieve its goals as stated in the action memorandum? Did the TCRA make any significant reduction in contaminant mass? Data on the amount of original mass present and mass removed by that TCRA should be provided in this memorandum. Such information will help in the evaluation of the proposed actions in this TCRA and their ability to reduce mass.

**COMMENT 7**

Sect. II. A. 1., 8<sup>th</sup> Par., Pg. 7

In the 6<sup>th</sup> sentence, it is stated that the TCRA will provide verification testing of residual vapor concentrations at 117-EX-01 and 117-EX-02. The proposed actions for this TCRA are groundwater extraction and *in situ* treatment (Sect. V). Please explain how these actions will verify the presence of any vapors in the vadose zone. A TCRA should not be required to test these wells for vapors.

**COMMENT 8**

Sect. II. A. 1., Par. 8, 2<sup>nd</sup> Sent., Pg. 7

Selected data is provided in Table 1. What was the basis for the selection of the data?

**COMMENT 9**

Sect. II. A. 1., Par. 14, Last Sent., Pg.8

This sentence, as written, is incomplete.

**COMMENT 10**

Sect. II. A. 1., "Evaluation of the Release..." 3<sup>rd</sup> Sent., Pg.10

The sentence notes potential impacts to plume migration caused by pumping of nearby agricultural wells. Please explain how the TCRA will address these potential impacts, especially since the TCRA extraction is operating at 0.5 gpm or less. Additionally, during the BCT conference call held on 9/26/2001, the Navy reported that only one of eight wells tracked by data loggers showed any influence by agricultural wells. This well was not in the 117 area. The draft feasibility study for the administration area plume had also noted at one point that pumping from agricultural wells flattened the gradient. If pumping did indeed flatten the gradient, then the potential for plume migration appears moot.

**COMMENT 11**

Sect. III. A., Par. 2, Pg. 16 -17

The paragraph states that the proposed TCRA will reduce the spreading of the plume. To prevent further migration or spreading, pumping at higher rates than 0.5 gpm will be needed to provide any hydraulic control on movement. It is also questionable that mass removal at low rates (the previous Cluster 1 TCRA removed only 3 lbs/week) will be effective at reducing the risks of plume spreading (by diffusion and/or advection).

Further clarification will be needed to show how *in situ* treatment will "abate" potential plume spreading. Does the substrate require advection or diffusion to work, or a combination of both? How will the substrate and daughter products be controlled or constrained from migrating themselves?

## ATTACHMENT 1

Finally, the memorandum should clarify as to how the TCRA will reduce exposure. There are no present known complete exposure pathways at Crows Landing. The extraction, storage, and transportation does provide possible complete pathways for exposure.

### COMMENT 12

Sect. IV, Pg. 17

This document needs to show more directly how there is an imminent and substantial endangerment to public health, welfare, or the environment if this TCRA is not implemented. As noted in previous comments, it is questionable that the proposed extraction will be able to control plume migration or make any real reduction in mass at the low flow rates presently being used. The in situ portion of this TCRA also needs to be better described as to how the process works, how it will be controlled, and how it will provide protection to receptors.

### COMMENT 13

Sect. V.A.1, "Groundwater Extraction" Pg. 18

This section states that the groundwater extraction will continue 30,000 gal are extracted or for 120 days. How much mass will be removed with the extraction of 30,000 gal? What was the basis for choosing this quantity or the 120 day duration? The extraction of 30,000 gal in 120 days is approximately 0.2 gpm. How will such a small flow rate have any effect on reducing plume migration?

### COMMENT 14

Sect. V.A.5, Par. 5, Pg. 20

This paragraph states that only state standards that are identified in a timely manner may be ARARs. Since this document went out as a final and not a draft, how was the state or any other party able to identify ARARs in a timely manner?

### Reference:

NAVFAC, 1997. Navy/Marine Corps Installation Restoration Manual, Sect. 3.2.2, Naval Facilities Engineering Command, February, 1997.

USACE, 1994. Technical Guidelines for Hazardous and Toxic Waste Treatment and Cleanup Activities, EM 1110-1-502, Sect. 2-31, US Army Corps of Engineers, 30 April 1994.

## TRANSMITTAL

Date: 22 Oct 2001

From: Lynn Marie Hornecker  
CROWS LANDING

To: Diane Silva  
Code 01LS.DS

**Subj: CERCLA Administrative Record Materials**  
Former Naval Auxiliary Landing Field, Crows Landing

**Installation:** Former Naval Auxiliary Landing Field, Crows Landing

**UIC Number:** N60211

**Document Title (or subject):** Review Comments

**Author:** Donald M Chuck, NASA

**Recipient:** Marianna Potacka, SWDIV

**Record Date:** 15 Oct 2001

**Approximate Number of Pages:** 6

**EPA Category:** 01.1

**Sites:** Site 17

**Key Words:** removal action, action memorandum

**Contract:** N/A

**CTO Number:** N/A

Note: Navy responses refer to e-mail  
dated 9 October 2001. This letter is the  
formal transmittal for the comments.  
NASA