

# STATE OF ALASKA

**SARAH PALIN, GOVERNOR**

**DEPT. OF ENVIRONMENTAL CONSERVATION  
DIVISION OF SPILL PREVENTION AND RESPONSE  
CONTAMINATED SITES PROGRAM**

555 Cordova Street  
Anchorage, AK 99501  
PHONE: (907) 269-7545  
FAX: (907) 269-7649  
www.dec.state.ak.us

File: 2569.38.015

October 11, 2007

Mr. Tommie Baker  
10471 20<sup>th</sup> St., Suite 340  
Elmendorf AFB, Alaska 99506-2200

Scott Hansen  
10471 20<sup>th</sup> St., Suite 340  
Elmendorf AFB, Alaska 99506-2200

Re: Proposed Plan for Final Remedial Actions, Groundwater Zone 1 – OT027, King Salmon Airport

Dear Mr. Baker and Mr. Hansen:

I am writing in response to the Proposed Plan referenced above, which the Alaska Department of Environmental Conservation (department) received on September 27, 2007. The department has been working collaboratively with the Air Force, EPA and the community for many years on Environmental Restoration at the King Salmon Air Station. However, we are concerned that this Proposed Plan was finalized and released for public comment without addressing department concerns on the proposed remedy and that it does not include adequate information to determine the most appropriate remedial alternative for the area in accordance with the National Contingency Plan (NCP). At this point in time, the department does not agree with the Air Force preferred alternatives described in the proposed plan.

We are also concerned that the Air Force scheduled a public meeting on the Proposed Plan without coordinating with us and set the meeting for time when the department is not available to participate.

### **Overall comments**

The department has four primary concerns over the Proposed Plan, including:

- The plan only includes three alternatives for addressing TCE contamination in groundwater: no action, monitored natural attenuation (MNA) with institutional controls (ICs), and air sparging with MNA and ICs;
- The department does not concur with the proposed revision of the TCE action level for groundwater treatment specified in the Interim Record of Decision (IROD);
- Under the *Basis for Taking Action* it states passive petroleum product removal from groundwater will continue, however, the remainder of the document is silent on product recovery; and

- Under the *Basis for Taking Action* it states “No basis for taking action is believed necessary for residual contamination found in the subsurface smear-zone soil due to existing land use controls and its inaccessibility”.

As you know, an IROD addressing Groundwater Zone 1 was signed by the Air Force and DEC in 2000. That ROD specified the Air Force would recover free-phase petroleum hydrocarbons from the watertable using a dual phase extraction process; continued operation of the Eskimo Creek Seeps water collection and treatment system; implement MNA or, if the 350 µg/L TCE action level continued to be exceeded in point of compliance wells, install and maintain a treatment wall to address TCE in groundwater; and implement a groundwater use restriction for the A and B aquifers beneath the site. The IROD also called for groundwater modeling every five years to assess TCE fate and transport to evaluate the remedy. Most of these actions were implemented; exceptions are that a TCE treatment wall was not installed, formal establishment of a groundwater use restriction has not been completed and the updated TCE fate and transport modeling has not been conducted.

TCE has been consistently detected at concentrations above the agreed upon action level in groundwater within the wetland near Eskimo Creek. However, due to the depth of TCE contamination and the hydrogeology, installation of a treatment wall to was determined infeasible.

Between 2002 and 2007, the Air Force implemented Remedial Process Optimization (RPO) at King Salmon in accordance with Air Force policy to evaluate the effectiveness of remedial actions and determine whether they should be continued, modified or changed to another alternative. This multi-year effort involved Air Force staff from the 611 CES, PACAF, and AFCEE along with Air Force contractors, the department, EPA and other stakeholders. The RPO report was finalized in June 2006 and a follow-on field activities report was completed in April 2007. Through this effort, the project team agreed upon the following:

- Installation of a TCE treatment wall is not a feasible remedy because of the depth of contamination and site hydrogeology
  - additional source area investigation was recommended and implemented
  - the TCE plume in groundwater was better delineated
  - further monitoring is necessary to determine whether the creek changes between a *gaining* and *loosing* stream based on significant precipitation events or seasonal fluctuations
  - an enhanced bioremediation should be evaluated as a remedy
    - a treatability study should be implemented
- The Eskimo Creek Treatment system had reached a point of diminishing returns, was no longer effective, and was shut down
  - water level fluctuations should be determined
  - product recovery probes should be installed, monitored and product bail-down tests conducted
  - future product recovery efforts should be focused at targeted locations, during low water levels

- in support of discontinuing the Eskimo Creek Treatment system, a bioventing system was installed to help treat high levels of petroleum and free product in the smear zone
- There is no significant source of petroleum hydrocarbons or chlorinated solvents in the vadose zone near ETMW15 or MW-28.

Through these efforts the department agreed treatment systems could be turned off (Eskimo Creek Seeps Treatment system, Bioventing at Building 76-200, and Dual Phase Extraction of free product) and that monitoring plans should be revised (the department concurred with reductions in the 2006 LTM plans to help ensure funding would be available to implement an enhanced bioremediation treatability study on TCE contaminated groundwater during 2006).

The first Five Year Review for the King Salmon AS was completed in September 2006. It recommends, among other things, conducting a field scale treatability study (commencing in Oct. 2006) to evaluate enhanced bioremediation of chlorinated solvents in groundwater within groundwater zone 1, expanding the bioventing system (Bio4X), and better defining the groundwater/surface water flow dynamics along Eskimo Creek.

It is disconcerting and unclear why the Air Force did not implement the agreed upon treatability study until this fall. The project team, the RPO report, and the draft workplan all indicate conducting an adequate treatability study would require approximately 1.5 years. Had the study been implemented as initially agreed upon, the results would be available for consideration in selecting a remedy at this time. The Air Force project manager has indicated a willingness to consider preliminary monitoring results from the study in the planned record of decision. However, it is unlikely preliminary results will provide sufficient data to determine the effectiveness enhanced bioremediation at this site; therefore, enhanced bioremediation as a remedial alternative under this context would not be fairly or accurately compared with the other alternatives.

The department has not received documentation on the effectiveness of the bioventing efforts (Bio4X) near the seeps. Thus, it is unclear whether continuing to operate the system, expanding it as recommended in the Five Year Review, or ceasing its operation as described in the Proposed Plan, should be included in the overall remedy. Similarly, continued product recovery needs to be evaluated and clarified with respect to the final remedy; it is mentioned in the Proposed Plan but not included in the remedial alternatives.

### **Specific comments**

The third paragraph on page one states, "All remaining contamination present in Zone 1, regardless of original source and affected media, is addressed in this Final Proposed Plan for Zone 1." It should be clarified that the Proposed Plan addresses contamination from Installation Restoration Program (IRP) source areas identified in the plan. It does not address contamination from compliance program sites or any previously unidentified sources.

The *Summary of Proposed Actions* and *Site Background* sections list numerous prior studies and documents that describe information used to develop the proposed plan. The Remedial

Process Optimization reports are part of the Administrative Record and should be included in information forming the basis for remedy selection.

Under *Nature and Extent of Contamination*, on page 6, typical biodegradation of TCE is described and daughter products are listed. It continues to note that only TCE and cis-1,2-dichloroethene have been found in groundwater within Zone 1, and only TCE has been found in the B-Aquifer. Other biodegradation daughter products have not been found. This does not indicate dechlorination is occurring down to ethene at the site under the natural conditions. Enhanced biodegradation may facilitate dechlorination and significantly reduce the overall time needed to achieve the remedial action objectives and may be a preferred remedy based on the NCP criteria.

The *Ecological Risk Assessment* section states that surface water and sediment monitoring results indicate contaminant concentrations do not exceed NOAA Squirt values and are, therefore, below action levels. It also states the TCE action level presented in the IROD was recalculated and shown to be almost threefold higher than what was in the IROD. Please note, the department has not concurred with the Air Force proposal to revise the action level agreed to in the IROD.

*Table 2* lists the estimated time to reach remediation goals under Alternative 2 (the Air Force preferred alternative) as 100 years, with a total estimated present worth cost ranging up to \$554,000. However, the cost estimate is only for the first 25 years. Life cycle cost should be considered.

The proposed plan should list chemical specific ARARs or cleanup levels for contaminants of concern in each media.

The *Evaluation of Alternatives* rates Alternatives Two (MNA and ICs) and Three (Air Sparging, MNA and ICs) equal with respect to Protection of Human Health, Compliance with ARARS, Long-Term Effectiveness and Performance, and Reduction in Toxicity, Mobility, or Volume through Treatment. The department does not agree that these alternatives are equal with respect to these NCP criteria. To date the Air Force has not developed and implemented enforceable ICs to restrict groundwater use and limit future land use. It is questionable whether the Air Force could develop and implement effective land use restrictions to ensure protectiveness over an estimated 100 year timeframe, especially since it appears the Air Force does not own the property. Remedies that may achieve cleanup levels in a shorter time frame should score higher under these criteria.

### **Conclusion**

Based on all of the above, the department does not concur with the preferred alternative described in the plan.

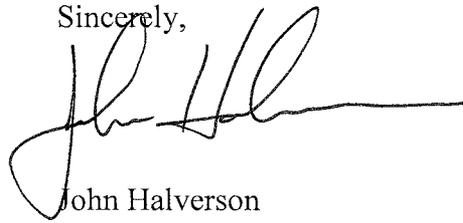
The department requests the Air Force complete the enhanced bioremediation of TCE treatability study and evaluate enhanced bioremediation as a remedial alternative for

Groundwater Zone 1. It should be given serious consideration and an appropriate comparison with MNA and ICs based on the nine criteria in the NCP.

Bioventing and product recovery components of the remedy need further evaluation and should be clarified.

If you have any questions on these comments or to discuss a path toward developing a final ROD that the State will concur with, please contact me at 269-7545.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Halverson', with a long horizontal line extending to the right.

John Halverson  
Environmental Program Manager

cc (via email):

King Salmon RAB members (c/o Richard Sherman, community co-chair)  
Jacques Gusmano, EPA  
Ron Stroman, DOT Airport Leasing  
Jim Klasen, Elmendorf AFB  
Todd Fickle, 611 CES