

Meeting Notes: Community Advisory Group - Aerojet Superfund Issues, March 16, 2005

1. Attendees

Charles Berrey (USEPA, Aerojet RPM), Alex MacDonald (Regional Water Quality Control Board), Jackie Lane (EPA), George Waegell, Jean Young (Sacramento County), Larry Ladd, Pam Martin, Michael Bendow (A-CWS), Paul Harris (A-CWS), Tom Gray (FOWD), Michael Tolin (DHS), Michael Girard (Aerojet), Tim Murphy (GenCorp), Marilyn Underwood (DHS), Greg Voedsch, Tricia Carter (Recorder, CH2M HILL)

Prior to starting the meeting, Tim Murphy stated that the January meeting minutes did not accurately reflect what was presented in the meeting during Larry Ladd's presentation. Tim emphasized his concern regarding the draft minutes which contained a brief summary that was expanded by Larry to include additional content that was not covered during the presentation but that was included a part of the final minutes. Pam Martin, the facilitator of the March meeting, and Tricia Carter, the recorder, stated that the steering committee would discuss the issue to ensure that additional comments from future presenters would be incorporated appropriately and the potential to formalize a process of finalizing the meeting minutes as part of the CAG meetings would also be discussed.

2. Update on major milestones and deliverables produced since the September meeting for OU3 and other environmental related efforts at Aerojet.

Charles Berrey updated the CAG on recent regulatory actions. Since the last meeting, the agencies have provided comments on the following submittals:

- Aerojet's 12/18/04 Western Groundwater Additional Response Actions Areas 3 and 4 (additional data was requested by 02/28/04 and is now being review by Agencies)

Charles referred to Map 1 to point out the Malaga well in Area 3 which is in a portion of Area 3 that is being evaluated to determine if the source of contamination is due to past agricultural practices. A technique has been developed to look at the isotope configuration of perchlorate to determine if it is naturally occurring or manmade. The results show some variability in the oxygen compound and more stability in the chlorine compound which may support the application of fertilizer as the source. The EPA has sent the isotope evaluation report to their lab in Cincinnati for review and comment.

- Aerojet's Prefinal/Final Design Submittal for Area 1 of OU3

The agencies required that this document be revised by 4/18/05 to include upgradient Layer D control (isometric profiles), detail on Permanent Treatment Plant on land to be leased from the County and to provide data on the Chettenham wellhead treatment (or the backup additional extraction well).

- Aerojet's Program Plan Modification Report submitted on 12/23/04

This report addresses the Aerojet Site source areas. The Island Operable Unit (OU) and the Boundary OU are to be parallel efforts. By the end of the year, Aerojet will submit to the Agencies additional information to allow the Agencies to determine if any areas in the Central OU should be moved to the Eastern OU.

- Aerojet's Draft Landfill Site Removal

Per a subsequent agreement, the draft is to be resubmitted with Aerojet's agreement to perform confirmation sampling and to submit their plan for agency review before the end of March.

- EPA approved Aerojet's Hexavalent Chromium Standard Operating Procedure

- Aerojet submitted the Perimeter Operable Unit Remedial Investigation/Feasibility Study for agency review.

This document was submitted to all that requested copies at the meeting in January.

- Aerojet's Vapor Intrusion Modeling Downgradient of the Central Disposal Area

Per subsequent discussions, Aerojet agreed to submit the Sample Analysis Plan for the effort.

Charles further described Map 1 and the zones within OU-5 and the proposed changes/modifications to address the contamination in these areas. In Zone 1, there are two groundwater extraction treatment systems (American River Ground Water Extraction and Treatment System and GET D system) for which additional work is being proposed. The American River GET will have additional extraction wells incorporated into the system. In Zone 2 (Inactive Rancho Cordova Test Site [IRCTS]), a new groundwater extraction treatment system is being proposed and the treatment system in Zone 3, GET B, will be modified. In Zone 4, minimal changes will be made to GET A to address the contamination in the area. Charles also referred to a table provided as part of his handout which summarized the options for each zone containing the cost, number of extraction wells, gallons produced per minute, years to cleanup, and other comments with regards to the OU5 RI/FS alternatives and the contaminants controlling the time period for the cleanup remedy. There is also a component of the RI/FS to address soil remediation in adjacent or within areas that are not a part of the Superfund site. After the landfill is removed, confirmation sampling will be conducted to determine if additional soil removal will be required.

The Agencies are now reviewing the RI/FS and will provide comments to Aerojet. Due to the cost of the remedy, the remedy alternatives will also need to be reviewed by EPA's National Remedy Review Board prior to issuing a Proposed Plan for public comment, which would then be followed by a ROD, enforcement document, remedial design, and remedial action.

Larry Ladd asked if any calculations were performed for a water replacement value in the ROD. Larry asked if this has been consistently applied. Charles noted that the EPA is required to enforce at the lowest federal or state Maximum Contaminant Level (MCL). An MCL has not been established for perchlorate or NDMA; therefore, the public health goal (PHG) is used. The reference dose for perchlorate was entered into the EPA's Integrated Risk Management System in February 2005 and the EPA is reviewing the enforcement policy. In 2000, the PHG for perchlorate was 4ppb. At that time, Aerojet was using biological treatment to remove perchlorate down to non detect on-property at no additional cost. In the case of the Perimeter OU (OU5), perchlorate concentrations are lower and ion exchange is being proposed for remediation treatment. Ion exchange treatment cost is concentration sensitive while biological is not. TCE in Zones 1 and 2 and NDMA in Zones 3 and 4 are the controlling contaminants for remedy duration in OU5, not perchlorate. For OU3, perchlorate detected offsite drove the expected duration of the remedy.

Tom Gray asked if there were any modifications in process or currently planned to the American River GET that would modify the amount of water currently being extracted from north of the American River. Charles noted that there are no plans beyond the alternatives presented in the RI/FS.

3. Update on Well Installation Activities in OU-3 and Beyond.

Alex MacDonald noted that there are three treatment plants operating in OU-3 (Areas 1, 2, and 3). The temporary treatment plant in Area 1 will be relocated onto Matherfield and where Aerojet/Boeing will also be constructing a treatment system. The treatment plant in Area 2 is on schedule to full operation in June of this year. The treatment plant in Area 3 will be utilized to address the plume in the center of OU5. The treatment system in the IRCTS is on hold due to the weather. Additional challenges for this treatment system include wetlands and impacts to the pipeline route. For the

Perimeter OU (OU-5), the proposed extraction wells will be piped to GET facilities E and F.

Charles announced that a meeting would be held tomorrow evening, March 16th, by Fair Oaks and Carmichael at La Sierra High School to discuss the regional approach with regard to the cleanup north of the American River for OU3 and RI/FS effort for OU5.

4. Overview of Aerojet Health Study.

Marilyn Underwood from the Environmental Health Investigations Branch, California Department of Health Services (DHS), provided a historical overview of the perchlorate contamination in Rancho Cordova drinking water supply, the health study associated with this contamination, and the impact to Rancho Cordova infants.

In 1996, health assessment activities began as a result of the detection of perchlorate in monitoring wells in the area. At the time, the reporting limit for perchlorate was 400 ppb. In 1997, recommendations were made using 12 laboratory techniques that would result in lower detection limits for perchlorate. As a result, three of the Arden Cordova water system's wells were found to be highly impacted by perchlorate and the contaminated wells were taken off-line.

Potential health effects from exposure to perchlorate include suppression of the thyroid function and the thyroid's production of thyroxine (T4). Fetus, infants, and children are most susceptible. The objectives of the Aerojet health study are to estimate the concentrations of perchlorate in the Arden Cordova Water System prior to 1997 and to see if pregnant women who drank perchlorate-contaminated water had infants with lower T4 levels than pregnant women who did not drink perchlorate-contaminated water. Three models that are being used to estimate exposure include geostatistical, transport, and distribution models. The study is still a work in progress. Efforts are being made to finalize the estimation of perchlorate exposure and writing and reviewing the final report. Additional challenges involve the contractual process with UC Davis, obtaining available data or lack of data, and uncertainty with the modeling (ranges of risk vs. point estimates of risk).

Larry noted that the hormone measure for infant thyroid function changed in the late 1990s and asked when she became aware of this. Marilyn noted that she did not know about the Genetic Disease Branch of DHS prior to the initiation of the study in 1997. Marilyn also noted that this study is easier to conduct with mothers who were not exposed and from within the same drinking water system (to avoid changing the data set and to be able to better compare "apples to apples"). Marilyn added that there are a number of factors that affect infant thyroid function including the age of the mother and the number of hours after the blood sample has been taken.

Charles asked about the distribution modeling and if the nine dosing groups identified in the legend pertained to the dose groupings that were run in the epidemiological analysis. Marilyn noted that modeling has only been conducted for 4 dosing groups and not necessarily the ones depicted in the handout. The nine realizations show that concentrations vary over the distribution of the system. Mike Girard also asked how the study differentiated between time of year and time of day. Marilyn noted that the data is based on monthly changes in the water system (different wells turning on and off). Daily pumping averages were not available from Arden Cordova. Larry asked if there was any potential to look into NDMA exposure. Marilyn noted that NDMA is not a part of the study and that the function of the study is to evaluate the GET systems and perchlorate impacting the supply wells. Marilyn stated that this study evaluated exposure within one census tract in an attempt to narrow the study to those whom were most impacted by the perchlorate. The idea is to reduce the statistical group to better define who is exposed.

Greg Voedsch asked Marilyn how the affected subjects of the study are selected. Marilyn indicated

that any child that was born to a woman whose address was contained within the Arden Cordova water system modeled area when perchlorate was in the drinking water and prior to 1997 were included in the study. Marilyn noted that you do not know who is affected unless the testing comes back with unusual results. Greg informed Marilyn of his condition and exposure to perchlorate as an adult so that she was aware it and so that it could be included in a study.

5. Aerojet Community Involvement Plan Update.

Jackie Lane reviewed the background of the update to the CIP. Interviews were conducted in 2002 and again in 2004 to address the contamination detected north of the American River. Jackie reviewed the concerns identified during these interviews (i.e. plume movement, impacts to groundwater basin, land use conflicts, etc.). The tools/activities for involvement include planning, interaction, outreach, and support. The draft is ready to be submitted to the interviewees and the CAG next week for their review and comment.

6. Next Meeting.

Next meeting: Tuesday, May 17, 2005, Sheriff's substation, Community Room, 10361 Rockingham Way (just off Mather), Rancho Cordova, 7 p.m. to 9 p.m.