

Meeting Notes: Community Advisory Group - Aerojet Superfund Issues, January 11, 2005

1. Attendees

Charles Berrey (USEPA, Aerojet RPM), Alex MacDonald (Regional Water Quality Control Board), Tricia Carter (Recorder, CH2M HILL), Don Hodge (EPA), George Waegell, Janis Heple (CAG member), Jean Young (Sacramento County), John B. Hervey (Gold River resident), Leo Winternitz (Water Forum), Larry Ladd, Steve Nugent (Carmichael Water District), Vicki Lee (Sierra Club), Pam Martin, Cindy Caulk (Aerojet), Rick Bettis (League of Women Voters), Michael Bendow (A-CWS), Clayton Nye, Rob Roscoe (Sacramento Suburban Water District), Paul Selsky (Carmichael Water District)

2. Update on major milestones and deliverables produced since the September meeting for OU-3 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:

- Draft Pre-final/Final Design Submittal Area 2 Operable Unit 3 (11/01/04). Revised document due 1/14/05.
- Aerojet's 11/03/04 Quality Assurance Program Plan modification for modeling. Revised Modeling Section due 02/07/05.
- Aerojet's 12/17/04 Final 2004-5 General Monitoring Plan. Comments to be incorporated in Addendum to the Plan (due 30 days after Area 2 Treatment Facility is fully operational).
- Aerojet's 12/15/04 Short-term and Long-term Water Replacement Contingency Plans requesting resubmission date by 02/07/05. Review California American wells proximity to the 4 ppb perchlorate line and how revisions to the plan are made.
- Aerojet's 11/29/04 Perimeter Groundwater Operable Unit Remedial Investigation/Feasibility Study Extension for Area 39. A five month schedule extension was not approved. Area 39 was removed from the scope to stay on schedule.
- Aerojet's 11/17/04 Response to Comments 2004-5 Area 41 Groundwater Monitoring Work Plan. The Work Plan has been approved.
- Aerojet's 12/09/04 response to comments on Quality Assurance Implementation Report. A request was made to obtain a copy of the two past field audits by 1/19/05. Cindy Caulk will provide the field audits.
- Application of 12/04 Site-wide Background Levels of Soil Trace Elements Report. 18 of 25 inorganics require some additional statistical manipulation. Aerojet background data will be presented based on the appropriate soil class (3 soil classes at Aerojet).

Charles reviewed a figure showing Areas 1, 2, 3, and 4 in the Western Groundwater Operable Unit and noted the number of wells and their combined yield in each area. Rob Roscoe asked where the extracted groundwater (9,500 gpm in total) will be discharged. Charles noted that the extracted groundwater will be treated and discharged into the American River and a small portion will be discharged into the Sacramento River. The group discussed the potential for discharge into the Folsom South Canal and the lower Cosumnes area. Jean Young noted that the selection of all alternatives has not yet been determined and noted that a number of discharge points are being considered in a cleanup plan. Jean stated that the Bureau has not yet approved the use of the Folsom South Canal. An NOP is out and an EIR will be prepared by September 2005.

Rob asked if Sacramento Suburban could receive a copy of the Additional Response Action Report (ARA). EPA is already sending copies to Sacramento Groundwater Authority (SGA), Water Forum (WF) and potentially impacted water purveyors. Rob asked if the SGA and WF were given a copy of the ARA for comment and the response was yes they had. The EPA added Sacramento Suburban Water District and the CAG chair to the distribution list.

The County of Sacramento Department of Water Resources (County) is required under its August 2003 agreement with Aerojet to provide replacement water first to impacted water purveyors south of the American River from extracted and treated groundwater rights transferred by Aerojet to the County.

Paul Selsky expressed his concern regarding the amount of groundwater that will be extracted out of Area 4 and requested that it be reused in the Carmichael area. Alex MacDonald stated that the reuse has not yet been determined but noted the potential for reuse in the area (i.e. golf course).

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

Alex MacDonald reviewed the extraction wells, monitoring wells, and treatment facilities that have been installed and/or that are operational in OU-3. Aerojet completed a number of monitoring wells that will help define the contaminant plume in different aquifer layers/zones. Monitoring wells have also been completed in the Perimeter Operable Unit.

Vicki Lee asked to what standards the groundwater will be treated. Alex noted the contaminants of concern will be treated to drinking water standards. Rob expressed his concern of the potential for the contaminant plume or “fingers” of the plume to move between the monitoring wells north of the American River. There is an immediate need for contingency water supply planning well in advance, before additional water supplies are directly impacted by the contamination and taken out of service. The County and Water Board stated that the remedial investigation and feasibility studies for many of these impacted areas have either been completed or are in the process of being completed to address this issue.

4. Update on Activities North of the American River.

Leo Winternitz began the discussion by providing a background on the Water Forum Agreement of April 2000. The two main objectives of the agreement are to provide a reliable and safe water supply for the region’s economic health and planned development through to the year 2030 and to preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The contaminant plume could threaten this agreement. As a result, conjunctive use programs were established (i.e. Sacramento Groundwater Authority). Stakeholders requested that the Water Forum coordinate with these groups to address the issues the region is facing. As a result, a White Paper was developed to define the concerns of all parties and to provide recommendations in an attempt to start a dialogue to begin addressing these issues. The stakeholders met with the state and federal regulatory agencies to address these issues. Monthly meetings were established starting this month (20 January), and quarterly meetings were planned for managers to meet and discuss policies regarding these issues.

Vicki asked if the water budget would have to be reevaluated and expressed her concern about the aggressive plans for development in the area. Leo noted that this could happen if the plume(s) continues to spread and is not contained. Leo also noted that the Water Forum concept of conjunctive use is based on an assumption of a safe and reliable groundwater basin. Conjunctive use will not only provide for a reliable water supply, but will also help protect aquatic resources of the lower American River, particularly in the drier years. In the drier years, water purveyors have agreed to reduce surface water diversions from the American River and rely more heavily on groundwater.

Steve Nugent noted that the issue of development and new water supplies is critical to the Carmichael Water District and commented that he was pleased with the direction that the group is heading in and that all parties are building a better working relationship. Steve also noted that there is a need for long-term planning to immediately address impacts to water supplies. Steve will be approaching the legislature of Congress for funding. Rob noted that the other purpose of the group is to look at regional implications (other contaminant plumes in the groundwater basin) such as McClellan, rail yards, dry cleaners, and underground storage tanks in the area.

5. Briefing on Wilms/Neuroblastoma Cancer Clusters in the Los Angeles County.

Larry Ladd presented two handouts taken from Thomas Mack's "Cancers in the Urban Environment: Patterns of Malignant Disease in Los Angeles County and Its Neighborhoods." The first handout illustrated other potential contaminants of concern at the Aerojet Superfund site (benzidine and beta-naphthylamine). The second handout showed how current monitoring for nitrosodimethylamine (NDMA) may be inadequate given the 3-order-of-magnitude variability of NDMA levels in the Lante Street well of Baldwin Park and Rancho Cordova's Cristobal well. A likely adverse health outcome of undetected surges of NDMA into the water supply would be an Insulin Growth Factor II (IGF II) dependent childhood cancer like neuroblastoma, nephroblastoma (Wilm's tumor), or embryonic rhabdomyosarcoma.

The trichloroethylene-benzidine-beta-naphthylamine handout highlighted increased risk to cancer of bladder transitional cells in the vicinity of the trichloroethylene (TCE) plume (Azusa, Irwindale) from Aerojet Azusa in the San Gabriel Valley, and presented an abstract showing that benzidine and beta-naphthylamine are likely to work together with trichloroethylene to produce this type of cancer. Larry requested that the distribution of benzidine and beta-naphthylamine from solid rocket binder production be defined in the groundwater beneath Aerojet Rancho Cordova.

Larry then reviewed the reports of IGF II juvenile cancers from former residents of Old White Rock Road (Rebel Hill Ditch NDMA plume) and Ambassador Drive (Buffalo Creek NDMA plume), and the case of Renaud vs. Martin Marietta and the Denver Water board involving IGF-II cancers and exposure to NDMA from hydrazine rocket fuel. In the second handout, Mack shows four clusters of IGF II juvenile cancers in Los Angeles County during the 27 year of record. Two were in El Monte, one at the juncture of Interstate 10 and the San Gabriel River, the other at Aerojet's former headquarters at the junction of Interstate 10 and the Rio Hondo, a distributory branch of the San Gabriel River. Aerojet left El Monte in 1979 when the first detections of TCE in the San Gabriel Valley became public knowledge. A third cluster was in the East Canyon Country neighborhood of Santa Clarita, where (according to Lynne Plambeck of the Newhall water board) residents were served water tainted with NDMA and perchlorate from the Whittaker-Bermite site.

The fourth cluster in the Balboa Lake neighborhood of the lower San Fernando Valley has no documented exposure to NDMA or perchlorate, although it's not clear that groundwater there has been examined for those contaminants. This neighborhood, however, is immediately adjacent to Mr. Laurence Rockefeller's Marquardt ramjet plant, where unsymmetrical dimethyl hydrazine was used extensively for a long period of time. Both Marquardt and Lockheed Missile Systems at Van Nuys airport collaborated on the UDMH-powered X-7 ramjet test drones, which first flew in 1951. A 15-census tract area around the Sepulveda basin south of Van Nuys airport (Lake Balboa, Encino) has elevated risk for either follicular (RAS-driven) thyroid cancer, multiple endocrine cancer, soft connective tissue cancer, or papillary thyroid cancer (either RAS or BRAF-driven, RAS being most likely linked to NDMA exposure). Mr. Tim Brick of the Metropolitan Water District of Southern California is investigating the past and present water supply system in this area to rule out that hydrazine from Marquardt dumped into the Sepulveda basin eventually entered the local water

supply. If NDMA and perchlorate exposure is established in the Balboa Lake-Encino neighborhood, cancer patterns from this area on the census tract level should be compared with other areas of elevated thyroid and connective tissue cancer on the State Economic Scale in the National Cancer Institute's Atlas of Cancer Mortality. State Economic Areas that fit this cancer profile and have an industrial history of rocket fuel or explosives production include Ogden UT, Provo UT, Las Cruces NM, Amarillo TX, Waco TX, Paducah KY, Columbus MS, and the Mesabi Range mining region of Duluth MN-Superior WI. In New England the salient example of high connective tissue/thyroid cancer is Pittsfield MA, where PCB contamination is widespread. If the multiple endocrine cancer involves simultaneous papillary thyroid, medullary thyroid, and neuroendocrine pancreatic cancer (contrary to the pattern of MEN gene defects) it can be compared with a case from perchlorate-NDMA-exposed Rancho Cordova.

The group discussed the new perchlorate level established by the National Science Academy and the ramifications and impacts to the cleanup order. Charles stated that the RODs that have been issued (i.e. the ROD for OU-3) will not require an update unless there is an impact to public health or a change in the remedy. The new perchlorate levels would impact future RODs and there is a potential for there to be different cleanup levels for different operable units.

6. Next Meeting.

Next meeting: Tuesday, March 15, 2005, Sheriff's substation, Community Room, 10361 Rockingham Way (just off Mather), Rancho Cordova, 7 p.m. to 9 p.m.