Final Meeting Notes: Community Advisory Group (CAG) –
Aerojet General Corporation Superfund Site Issues
Meeting Date: May 21, 2014

1. Introductions and Attendees

Janis Heple, CAG Chair, began the meeting with introductions at 7:00 p.m.

Attendees:

Alex MacDonald (Regional Water Quality Control Board [RWQCB])
Alta Tura (Sacramento Area Creeks Council)
Blair Stone-Schneider (Skeo Solutions) (via telephone)
Chris Fennessy (Aerojet Rocketdyne [Aerojet])
Dan York (Sacramento Suburban Water District)
Daniel Stracka (U.S. Environmental Protection Agency [EPA])
Daniel Wolfe (City of Folsom)
Jackie Lane (EPA)
Janis Heple (CAG Chair)
Jessica Cooper (Recorder, Sullivan International Group, Inc.)
Jimmy Spearow (CAG)
Julie Santiago (EPA)
Larry Ladd (CAG)
Paul Schubert (Golden State Water Company)
Stephen Green (Save the American River Association)
Steven Ross (Department of Toxic Substances Control [DTSC])

The March 19, 2014, Draft Meeting Notes were finalized, pending review by Mr. Spearow.

Ms. Heple said a meeting regarding the needs assessment was held immediately prior to this CAG meeting. She said it was great that a City of Folsom representative attended, but the turn-out was not as good as she would have liked. She said she may coordinate with EPA to experiment with a different time and date than that of the CAG meeting for the next meeting regarding the needs assessment.

2. Aerojet Community Update – Chris Fennessy, Aerojet

Mr. Fennessy said there have been drilling activities in the community and that some over-excavation associated with Area C4 was conducted without a significant number of trucks traveling through the community.

3. Aerojet Cleanup Updates – Julie Santiago, EPA

Ms. Santiago said Mr. Kevin Mayer (EPA) is on vacation and therefore, he was not present. She said EPA is going through the comments on the Proposed Plan for Boundary Operable Unit 6 (OU6), and that all will be included in the Record of Decision (ROD). She said some comments implied there was too much information and other comments implied there was too little information, so the EPA will be challenged to provide a balanced amount of information for future sites. She said it appears there are some issues

with communication to the community and EPA will try to better convey the information (adding that Aerojet is a complex site). She said this is a learning process and EPA is learning a tremendous amount from the needs assessment; these lessons will be applied to the next sites: Operable Unit 7 (OU7) and Operable Unit 8 (OU8). The ROD for these sites will mostly address source areas, soil, and protection of groundwater, and will include a human health risk assessment.

Ms. Santiago said there are also issues regarding the understanding of Institutional Controls (ICs), specifically regarding the risk to future residents and how they will be protected. DTSC is responsible for writing and enforcing the ICs, called Land Use Covenants. EPA's ROD specifies the objectives for the ICs, and DTSC is working with EPA, RWQCB and Aerojet to prepare documents for OU3 and OU5 that accomplishes those objectives and also meets DTSC requirements. Both legal and technical staff is involved.

Comment: Ms. Heple said this should be an agenda item at a future meeting.

Ms. Santiago discussed the 5-year review for Aerojet, which Mr. Mayer has begun.

Ms. Santiago said there have been issues regarding the communication of land reuse and development, which appear to be the foremost concern of the communities. She hopes that EPA can address this in a future CAG meeting.

4. Aerojet Update: Water Distribution and State Policy Standards – Alex MacDonald, RWQCB

Mr. MacDonald presented an update regarding Aerojet's Groundwater Extraction and Treatment (GET) system facilities, water distribution, and pumping, as well as an explanation of the state policy cleanup standards (see attachment with final meeting notes).

Note: Slide numbers cited below refer to those from Mr. McDonald's presentation.

Mr. MacDonald said the GET system facilities water is covered under the National Pollutant Discharge Elimination System (NPDES) permit, but that the GET AB facility is still listed on the partial consent decree (where it will remain until it is fully operational, at which time all water discharged by Aerojet will be covered under the NPDES permit). He said the current total permitted flow for Aerojet is 28,750 gallons per minute (gpm), which is approximately 40,000 acre-feet per year.

Mr. MacDonald said Aerojet discharges water mostly to the local surface waters (for example, to Buffalo Creek, which flows to the American River). He explained there are surface water sampling locations along Buffalo Creek, Morrison Creek, and the American River (Slide 4).

Mr. MacDonald explained how water from the GET LA and GET LB facilities is treated and discharged (Slide 5). He said the current flow of GET LA water is 800 gpm, the permitted flow is 2,000 gpm (to allow for expansion), the water is discharged to the Ancil Hoffman Golf Course, and that when this water is not needed there, it is discharged to the American River. He said the current flow of GET LB water is 800 gpm, the permitted flow is 1,000 gpm, and that the water is discharged to the American River. Additionally, he explained that GET LA uses ultraviolet (UV)/peroxide to remove N-Nitrosodimethylamine (NDMA) while GET LB only uses UV for treatment of water.

Mr. MacDonald explained how water from the GET KA and AC-6 facilities is treated and discharged (Slide 6). He said the current flow of GET KA water is 2,300 gpm, the permitted flow is 2,800 gpm, and that the water is discharged to a drainage ditch that connects to the American River.

Question: Ms. Heple asked if AC-6 water belonged to Golden State Water Company; Mr. MacDonald responded in the affirmative. The AC-6 water is provided to Golden State's customers.

Mr. MacDonald said that facility water from AC-18 and AC-23 is discharged directly to a storm drain during shut-down and when the treatment system is turned on and turned off. Otherwise the treated water is provided to Golden State's customers.

Mr. MacDonald explained how water from the GET HA and GET HB facilities is treated and discharged (Slide 8). He noted that the "A" in "GET HA" indicates "Aerojet" and the "B" in "GET HB" indicates "Boeing". The water is discharged from these facilities to a drainage ditch, which empties into Morrison Creek just south of Mather Field. This area is where Granite and Teichert have large sand and gravel mines.

Question: Ms. Heple asked if Granite and Teichert has to pay for the use of water; Mr. MacDonald said they do not have to pay as they pump groundwater for use at their facilities. The water discharged to Morrison Creek eventually seeps back to groundwater.

Mr. MacDonald discussed the treatment and discharge of water from the Southern Groundwater Study Area (SGSA) and White Rock GET facilities (Slide 9), the GET AB facility (Slide 11), the ARGET and GET J facilities (Slide 12), and the GET EF facilities (Slide 13).

Question: Ms. Heple asked if GET EF included the older facility; Mr. MacDonald said no: E and F were combined in 1998. The present GET EF facility was constructed between 1998 and 2001.

Question: Does GET EF water discharged to Buffalo Creek make it to the American River? Mr. MacDonald said most of the water reaches the river, while there is some infiltration.

Mr. MacDonald discussed miscellaneous facilities, such as the Sailor Bar System and Sprayfield facility that is a part of the Inactive Rancho Cordova Test Site (IRCTS).

Question: Previously, there had been a build-up of mercury in one of the surface waters. Is that addressed anywhere? Mr. MacDonald said Buffalo Creek and Alder Creek are sampled monthly and that mercury has not been detected. He also said a study was conducted by the University of California at Davis, but had not seen the results of that study. He said he had not seen data for Morrison Creek.

Mr. MacDonald discussed the state versus federal cleanup standards (Slide 17). He said EPA uses risk assessments to evaluate human health and ecological impacts from pollutants. He explained that EPA cleanup standards generally mean that pollutants fall within the cancer risk range of from 1 in 10,000 (1×10^{-4}) to 1 in 1,000,000 (1×10^{-6}). Non-cancer related risks are assessed looking at a hazard index (HI), with a HI of less representing no adverse effects to human health. He said EPA uses Maximum Contaminant Levels ([MCL] primary drinking water standard), when one is available, as the cleanup standard for drinking water.

Mr. MacDonald said the RWQCB cleanup standards differ from the federal cleanup standards (Slide 18) and explained Resolution 68-16, which refers to the maintaining of high quality of waters in California (which infers that water is a valuable resource). He noted the first number in a resolution refers to the year (i.e.; the "68" in "Resolution 68-16" refers to 1968). He said Resolution 92-49, which has been revised a couple of times since 1992, requires cleanup of water to background levels or to the best water quality that is reasonable if background levels of water quality cannot be restored.

Mr. MacDonald said that Title 23 of the *California Code of Regulations* further requires cleanup to the extent technically or economically feasible. He said the Water Quality Control Plan (Basin Plan) for the California RWQCB Central Valley Region includes numerical and narrative objectives. He explained that numerical objectives include specific cleanup standards (for example, MCLs) and narrative objectives include maintaining beneficial uses of a water body (for example, limiting pH levels of a creek used for agricultural irrigation).

Mr. MacDonald explained the following unofficial approach he uses to implement the RWQCB cleanup standards.

1) Initial screening levels for soils and groundwater include background levels.
2) The second tier of screening levels for soils include evaluating concentrations when modeled will not enter groundwater at concentrations exceeding background concentrations in groundwater.
3) The third tier of screening levels for soils includes evaluating concentrations when modeled will not enter groundwater concentrations exceeding incremental 1 in 1,000,000 excess cancer risk values, an HI of 1, or Water Quality Objectives ([WQOs] with no mixing).

4) The fourth tier of screening levels for soils include evaluating concentrations when modeled will not cause groundwater to exceed WQOs (with mixing allowed).

Comment: Mr. Schubert mentioned he has observed that MCLs do not generally increase, but that they do decrease; Mr. MacDonald concurred.

5. Regional Board Aerojet Cleanup Overview – Alex MacDonald, RWQCB

Note: presentation notes and activities map were handed out (see attachments with final meeting notes).

Mr. MacDonald described the presence of perchlorate in Layer D of Area 1 of OU3. He said extraction wells were drilled in Layer D near the existing extraction wells in Layer C, and are expected to be operating sometime this year. He mentioned that sampling would continue at AC-12 (now known as with another name) and additional monitor wells have been constructed to help further define the plume and capture zones at GET K.

Mr. MacDonald said extraction wells for Layer E will be constructed to cut off the Trichloroethylene (TCE) plume in the Gold River area.

Mr. MacDonald said approximately 5,000 acre-feet of water may be allotted to Golden State Water Company from Carmichael Water District. Mr. Schubert indicated this would be completed by Carmichael pulling GET water from the American River, treating it at their Bajamont Plant, and piping it to Golden State Water Company; however, this idea is still under consideration.

Question: There has been reference to soil from Aerojet cleanup sites being used as imported fill at other sites. The DTSC Clean Imported Fill Guidance states that fill should not be from sites undergoing an environmental cleanup or industrial and/or commercial sites where hazardous materials were used. Although chemicals of concern may have met screening levels, what if the screening levels decrease in the future and the chemicals left in place are now above screening levels? Also, there may be concern about additional chemicals of concern being released, such as a constituent that was not previously known to pose a risk. What if these new chemicals with a new potential risk were released in soils that was imported as fill to other sites, how is potential risk evaluated if the location of the soil is unknown?

Mr. Ross responded that the soils used for imported fill are tested prior to delivery to a different site. He said that the soil used from imported fill is tracked as well: where it came from and where it goes. Mr. MacDonald added that soil from imported fill is taken only for areas that are deemed usable for unrestricted use. He said soil from former or existing source areas are not used as imported fills, and the only future potential for this is at the Sprayfield facility.

6. 2014 Meeting Dates

The next CAG meeting is scheduled for Wednesday, July 16, 2014.

The following meeting is tentatively scheduled for Wednesday, September 17, 2014.