

**Final Meeting Notes: Community Advisory Group (CAG) –
Aerojet General Corporation Superfund Site Issues
Meeting Date: November 19, 2014**

1. Introductions and Attendees

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

Attendees:

Burt Hodges (Save the American River Association [SARA])	Jimmy Spearow (CAG)
Brit Snipes (City of Rancho Cordova)	Julie Santiago (EPA)
Chris Fennessy (Aerojet Rocketdyne [Aerojet])	Jerald Drobesh (Community Member)
Jackie Lane (U.S. Environmental Protection Agency [EPA])	Kathy Lawson (Golden State Water)
Janis Heple (CAG Chair)	Kevin Mayer (EPA)
Jessica Cooper (Recorder, Sullivan International Group, Inc.)	Larry Ladd (CAG)
	Stephan Green (SARA)
	Steven Ross (Department of Toxic Substances Control [DTSC])

The Draft Meeting Notes from the meeting on September 19, 2014 were finalized.

2. Aerojet Community Update – Chris Fennessy, Aerojet

Mr. Fennessy said there has been quite a bit of activity, including monitoring well installation. He said a resident requested Aerojet to postpone monitoring well installation on Trinity River Drive until after the holidays. Therefore, he said after next week, drilling at this location will be done until next year in 2015. He said a couple of extraction wells were being installed in the Gold River area. Additionally, he said Aerojet is working on installing pipeline across White Rock Road for groundwater treatment system expansion.

3. Aerojet Cleanup Updates – Julie Santiago, EPA and Kevin Mayer, EPA

Note: A schedule and maps were distributed (see attachments with final meeting notes).

Mr. Mayer said he visited Area 49000 in Perimeter Operable Unit (OU-5), and the soil vapor extraction (SVE) system pilot test is up and running. He said the system is not fully built-out yet. He said the extraction wells pull the volatile chemicals from the soil, and the air is run through carbon treatment vessels. He said currently, Aerojet is running only a core part of the 5-acre area, and the radius of influence (ROI) from the SVE system is centralized in an approximately 1-acre area. He said Aerojet can easily add more vapor points to this system, and it can be replicated in another area of Aerojet as well. He said this unit can be detached from the piping, used for an entirely different part of Aerojet, and can also be built-out to a full-scale system.

Question: Is the contamination only in the 1-acre area of Area 49000? Mr. Mayer said the contamination covers about 5 acres, and the currently 1-acre test is not yet built to the full 5-acres. The amount of contaminants removed in this one acre hot spot may be more than the rest of the five acres combined. He said there are 6 vapor extraction wells in the “hot spot” area, and more will be added without expanding the treatment plant. He explained the SVE not just protecting groundwater, but also addressing risk from vapor intrusion; He explained if there was a structure in the area of this kind of contamination, the pressure in the building could pull vapors from the subsurface if it is not cleaned up.

Mr. Mayer said groundwater data is continually analyzed, particularly for drought conditions.. He said when the Western Groundwater Operable Unit (OU-3) was fully operational, that started the clock ticking for the 5-Year Review. He said the Review will check the effectiveness of the flow rates and pump rates, review changes in toxicity information to ensure the remedy is still protective

Ms. Santiago said the Boundary Operable Unit (OU-6) Record of Decision (ROD) is still in the progress; EPA wanted to release it this week to the peer reviewers, but there were a few hiccups, particularly working around holiday schedules. She said the document will be submitted for a second internal EPA review, and hopefully the effort to address any comments will be minimal.

Ms. Santiago said she is also reviewing the Island Operable Unit (OU-7) documents. She said Aerojet requested to split Area 40 from Island Operable Unit (OU-7), and make it separate Operable Unit (possibly OU-10) in response to a request from the City of Folsom. She said it sounds like the right approach for Area 40. The idea is to expedite the cleanup of lands east of Prairie City Road to accommodate City of Folsom plans to create a recreational area that extends to the north and to the south. She said if the area is separated and formed into its own Operable Unit, it would in turn have its own Proposed Plan, Remedial Investigation/Feasibility Study (RI/FS), and ROD. She explained the EPA can't add more money at the moment for contract support, because there is no capacity within their contract at the moment. She explained there are also limited personal resources within the EPA, such as fewer Project Managers.. At the moment, it is an EPA management decision. Though EPA wants to collaborate with the City of Folsom, it might take a while to achieve the extraction of Area 40 from IOU (OU7).

Question: Will the area be a public area, and the CAG needs the opportunity to focus on Area 40. Mr. Mayer said yes, and the CAG may receive future presentations regarding Area 40.

Mr. Mayer explained that although Aerojet reimburses the EPA for regulatory costs, the resources within the EPA are limited. He said the City of Folsom proposed to complete the process for Area 40 by 2018. Ms. Heple commented that 2018 seemed ambitious.

Question: Are there plans for residential development in this area? Mr. Mayer responded in the affirmative. Mr. Fennessy said residential development is proposed to the east, and also potentially to the north and south of the area.

Mr. Mayer reiterated that money is not the issue with EPA; the issue is labor time and employee resources. He said once Julie gets the final signatures for the BOU (OU6) ROD, that is when the real work starts. He said this includes initial effort to compile the scope of work, contractor negotiations and budgeting, and other tasks needed to implement the design.

Question: If Area 40 becomes its own Operable Unit, is the City of Folsom aware of the level of effort? Mr. Fennessy said yes, Aerojet explained the entire process to the City. He said it is a very small area compared to others, and explained how long the process can take. He said with fewer source areas and smaller footprints, it should be a smaller effort compared to the larger Operable Units.

Question: Is the EPA going to have toxicology support? Mr. Mayer responded in the affirmative, and explained EPA has toxicologist to review work, but much of the support is provided by contractors.

Question: Does the Department of Defense provide funding to Aerojet? Mr. Fennessy explained the funding is not provided as cost reimbursements, and Aerojet needs to win work, which is different than asking the government for the money directly. Mr. Mayer reiterated that funding is not the source of delay. Additionally, he said the creation of a new Operable Unit may delay work on other OUs.

Mr. Mayer said feedback from the CAG on this matter is important. Ms. Heple commented that the 73 source areas in Island Operable Unit (OU-7) appeared to be an intense effort, and this would allow the CAG to focus on one area; however, there may be unintended consequences to this idea. Mr. Spearow, Mr. Green, and Mr. Hodges stated concern regarding the idea of splitting off Area 40 into its own Operable Unit, and it was agreed the CAG would need to weigh out the pros and cons. Mr. Mayer said EPA will need time to assess the situation, and will report back to the CAG. Mr. Fennessy said that if it is separated out, the plan may be to submit the RI/FS next spring, in 2015.

Question: Who can community members talk to and ask questions? Mr. Mayer said the CAG is welcome to contact him, Ms. Santiago, and/or Ms. Lane.

Comment: The CAG is concerned that work on other areas of Aerojet will be slowed down if there becomes an additional Operable Unit. Ms. Santiago agreed that there may be less attention for some parts of Aerojet, and there will be quite a lot of effort needed for progress on all of the 73 source areas identified in Island Operable Unit (OU-).

Comment: The federal budget may not be funded through September. Mr. Mayer explained EPA costs are recovered, but funding goes into what is like a revolving fund for Aerojet, and he reiterated that money is not an issue; it's having employees and contractors. Ms. Santiago said approximately 25 percent of her time is spent managing contracting issues, but they are definitely needed. Ms. Lane said the budget has been shrinking over the last three years.

Mr. Mayer said the CAGs input will make a difference, and he is looking forward to further discussions with the CAG.

**4. Island Operable Unit (OU-7) Remedial Investigation, Line 3
– Chris Fennessy, Aerojet**

Note: PowerPoint slides and maps were presented (see attachments with final meeting notes).

Mr. Fennessy presented a brief history of the Island Operable Unit (OU-7), and said there are a total of 73 source areas, 25 of which are located within the Line 3 area. He reminded the CAG that he has previously discussed Area 40 and the Hog Out area within Island Operable Unit (OU-7). Mr. Fennessy explained that there were manufacturing line areas designed to build specific aspect of former rocket motor manufacturing such as “fuel and liner preparation”, “oxidizer preparation”, “propellant mixing”, etc.

Mr. Fennessy said there is unconfined groundwater at 75 feet below ground surface (bgs), and contaminants include volatile organic compounds, perchlorate, dioxins/furans, metals, and semi-volatile organic compounds.

Mr. Fennessy presented and discussed the risk assessment maps, which are for commercial/industrial use. He said Line 3 is limited to only one building in the area, which is used as a storage facility. He said there are no workers in this area, and it is mostly open space.

Question: What screening levels were used for the risk assessment? Mr. Fennessy said the previous investigation report compared the sampling result data to the Preliminary Remediation Goal from 2004, and not the Regional Screening Levels from 2012. He said the previous data was mapped and Aerojet identified a lot of areas with data gaps after comparing the previous data with the updated screening levels.

He further explained there were different types of manufacturing, and contamination found is likely from these areas where manufacturing was conducted, such as mixing, casting, washing, etc. He said the maps showed most of the risk in the southern area of the site.

Question: Was the manufacturing conducted on concrete pads? Mr. Fennessy said there were approximately 30 buildings where the manufacturing was conducted. He said buildings had concrete floors, and all operations were conducted above ground (e.g. the mixing chambers were all above ground). He said all the equipment used was cleaned as well, such as the bowls used for mixing. He said everything would be washed out and the washing liquid was directed to floor drains, which exited the building in concrete, open trenches draining to gunite lined ponds positioned outside of the buildings. He said solvents were used for cleaning; mainly trichloroethylene (TCE).

Question: Was this an area used for the manufacture of parts for the Polaris rockets? Mr. Fennessy said that information is unknown at this time.

Mr. Fennessy continued to discuss the cleaning operations; he said tooling was cleaned with TCE and rinsed with water. The solution was then diverted to ponds next to the buildings. He said the important thing here is to ensure there is good sample coverage.

Question: Was this an area used for the manufacture of solid fuel rocket? Mr. Fennessy responded in the affirmative. He said nitrosamines are not an issue at this site. Mr. Ladd mentioned that a family lived nearby, south of the site, and developed cancer.

Question: In what direction does groundwater flow in this area? Mr. Fennessy said the groundwater flow is generally west-southwest, and heavily influenced by the treatment systems.

Question: Where is Rebel Hill ditch in comparison to this site? Mr. Fennessy said it is southwest of the site, and it crosses Line 4, not Line 3.

Mr. Fennessy discussed the soil sampling data, which was collected from 0 to 12 feet bgs, and it was compared to current and future use with the cancer risk and hazard index.

Question: What is the duration of the construction worker exposure? Mr. Fennessy said the standard EPA regulations were used. Mr. Spearow said it may be a 1-year exposure duration, 8-hours exposure per day. Mr. Fennessy said the duration is not manipulated, and procedure follows EPA regulations.

Mr. Fennessy added the following information on January 22, 2015 for clarification about the construction worker exposure.

The exposure assumptions listed in the DTSC guidance are used: *Human Health Risk Assessment (HHRA) Note Number 1. Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Hazardous Waste Sites and Permitted Facilities. May 20, 2011; Cal/EPA, 2011; website.*

Please note these were recently updated in September 2014, and if there were updates at this time, they would not have been incorporated into our document.

Specific parameters used in the Island Operable Unit (OU-7) HHRA for construction worker were:

Exposure duration = 1 year

Exposure frequency = 250 days

Exposure time = 8 hours/day

Question: Is the contamination mostly TCE? Mr. Fennessy responded in the affirmative. He said TCE is an order of magnitude more than the other chemicals, which is

problematic because with the gas chromatogram analysis, the TCE masks other chemicals – we can't see the other chemicals.

Question: How large is the area? Mr. Fennessy said it is approximately 30 acres.

Mr. Fennessy discussed the groundwater contamination, which is throughout the entire area. He said groundwater is generally 80 to 100 feet bgs in the area, and there are also vapor intrusion issues.

Question: What is the not-to-exceed level for TCE? Mr. Fennessy responded that it is 5 µg/L in groundwater, and mitigation will be needed. He said a vapor intrusion risk assessment has been conducted for all existing buildings, especially where people work. He said at this site, there are no workers, and all future construction goes through the environmental department.

Comment: The maps were very useful; this was good imagery.

Question: How long did the manufacturing occur? Mr. Fennessy said from the 1950s possibly to the 1980s, so approximately 30 years. He said Aerojet purchased the property in 1952 and a lot of the area was previously farmland and used for dredging for mining. He said the dredging operations altered the environment, and the dredge tailings have clay in the middle; therefore, vegetation in the middle. He said the dredging operations ceased in 1962. He said the water used for the dredging and mining operations flowed in a ditch from the American River.

Mr. Fennessy said he can plan to present Line 1 during the next CAG meeting.

Comment: There are differences between Alex's map from the EPA map, such as the boundary of the outer plume.

The CAG discussed upcoming water projects in the area. Mr. Fennessy explained that Aerojet is discharging treated water to the American River. The proposed design is to divert water 4-feet under the river and tie it to Golden States water system. If this water agreement occurs, 5,000 acre feet of Aerojet treated water will be diverted.

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

Note: Although Mr. MacDonald was not present at this meeting, the presentation notes and activities map were distributed (see attachments with final meeting notes).

6. 2014 Meeting Dates

The next CAG meeting is scheduled for Wednesday, March 18, 2015 in the American River South Room.

The subsequent meeting is tentatively scheduled for Wednesday, May 20, 2015 in the American River South Room.