

Meeting Notes: Community Advisory Group - Aerojet Superfund Issues, February 17, 2010

1. Attendees

Janis Heple, Tim Murphy (Aerojet), Jackie Lane, Gary Riley, and Kevin Mayer (EPA) , George Waegell, , Rick Bettis (League of Women Voters/Sierra Club), Jimmy Spearow, Kathy Lawson (Golden State Water Co.), Alta Tura (Sacramento Area Creeks Council,), Stephen Green, (SARA), and Claudette Altamirano (Recorder, Weston Solutions, Inc.).

2. December 2009 minutes were approved with minor changes.

3. Aerojet Community Updates: Tim Murphy, Aerojet

Mr. Murphy summarized the following:

- Fair Oaks –Park Ave: Installation of the monitoring well is complete and sample results are anticipated in four to six weeks. Once results are evaluated the status of the extraction well will likely follow.
- Ancil Hoffman Park – Operations of the system is expected to begin in June, 2010.
- Two wells just north of Highway 50 will be connected to the to the GET H-A system on Mather Field.

4. Aerojet Cleanup Discharges and Monitoring (Handout provided by Alex MacDonald, Review Kevin Mayer).

Janis Heple suggested that, due to the change in our meeting schedule that made Alex MacDonald unavailable for this meeting, the detailed discussion of discharges and monitoring be delayed until the next meeting.

A number of questions were asked:

Question: Concerns were raised regarding the drainage ditch near the administration area and concerns regarding PCB and metal contamination.

Answer: The excavation of contamination from the ditches has been completed and included removing soil two feet deep and two feet from either side of the ditches.

Question: Which contaminants are in the aquifer?

Answer: Generally TCE, Perchlorate and NDMA, however all contaminants are not in each well. Note per Alex: Other pollutants include Freon, and other VOCs such as PCE, 1,4-dioxane, DCE.

Question: Where are the plumes and at what concentrations are the contaminants?

Answer: Refer to the plume maps included in the reports.

Question: regarding the Central OU do we know the contaminate levels?

Answer: Yes free product TCE, and perchlorate are found in shallow soils. Note "free product" as a liquid not fully dissolved in the water; also the Island OU is likely to have higher amounts of perchlorate than Central.

Janis Heple added that all Aerojet cleanup documents are available in the Sacramento State University Library.

A discussion regarding temperature concerns of water discharged to the American River revealed that some temperature studies have been done by Save the River. Approximately 13,000 gpm is discharged to the American River.

The comment period closed February 27th for comments regarding the proposed Aerojet NPDES permit renewal. Kevin Mayer pointed out that normally permits are not required for Superfund sites however they do still have to comply with all substantive requirements of the laws and regulations (ARARs). In this case Aerojet is obtaining an NPDES permit covering all discharges (Superfund related and non-Superfund)

Question: Are there activities regarding the Aerojet vs. County lawsuit?

Answer: Aerojet will propose new alternatives to the County. The county will get a gallon for gallon exchange through downstream removal. Progress reports will be given at future meetings.

General Aerojet Cleanup Overview: Kevin Mayer (for Alex MacDonald), (handout)

- A **GET L-A** Construction: Construction underway—anticipation completion in April 2010.
- B **GET KA**: Operating with all initially planned wells operating, including former **AC-7** (Georgetown). Flow is approximately 1700 gpm and could be increased up to 1900 gpm. Golden State has been asked to run **AC -12** on a lead basis from now on and sampling by Aerojet will be on a monthly basis. It will be hooked up to treatment plant when concentrations of pollutants reach trigger levels. Aerojet is looking at having an “open house” for the public at **GET KA** this spring/summer.
- C **AC-6** will be provided with treatment this summer. One to two months of testing will take place prior to use within the Golden State system. Discharge is under Aerojet’s NPDES permit.
- D **AC-18** and **AC-23** will be provided with perchlorate ion exchange units with completion being in May/June 2010. Similar process to AC-6 prior to use within the system

- E **GET H-A:** Working on getting two new extraction wells (White Rock Park and Coloma Road area) on north side of US 50 back to GET H. CALTRANS encroachment permit has been received to allow the work on the undercrossing of US 50 to begin.
- F **GET B –** GET B will be expanded to accept transfer of **GET A** facility to the **GET B** location and to accept water from new extraction wells located in southern Zone 3 near Teichert. Pipeline from **GET A** to **GET B** is completed. Solar field adjacent to the facility has been completed and is already being expanded. Working on design for treatment of **GET A** at **GET B** – installation of UV system for **GET A** initially and pilot testing a UV/HiPox system. Completing work on two extraction wells to allow them to be turned on in March (at Teichert facility on Grant Line). Two other wells will follow – south on **Teichert Facility** next to the Tracy property.
- G White Rock Road North Dump – 90% Design going out to bid to hook up two extraction wells and treat the water at the system at AKT-1. Water will be discharged to **Teichert** for their use or to Rebel Hill Ditch near **GET B**.
- H New Monitor Wells:
- i) Monitor Well planned in Fair Oaks prior to extraction well on **Park Avenue** has been completed. Sampling will happen shortly.
 - ii) New Monitor well completed west of **Haggin Park**. Put in at the request of Sacramento Suburban Water as an early warning well upgradient of their well field north of the American River.
- I **Chettenham Well Testing Continues:** NO CHANGES. The concentrations of perchlorate in the well have dropped to approximately 3-4 ppb, down from initial concentrations of over 90 ppb. Aerojet has reached an agreement with Cal-American Water Company concerning the Chettenham Well.
- J Perimeter Operable Unit - Excavation of PCB and metals contamination in **10D and 11D ditches** in the Administration Area has been completed. Aerojet is working on the completion report.
- K Treatability Studies:
- i) **Line 03.** Column studies on-going. Looking at various ways to bioremediate/degrade perchlorate and TCE.
 - ii) **HOGOUT – NO CHANGES.** Treatability study on-going to look at in-situ treatment of soils and groundwater. Various difficulties have arisen over the last couple of years of the study – lack of native bacteria able to degrade perchlorate, pH of soils is not optimum to allow bacteria to degrade perchlorate, low permeability of soils – among the issues causing problems. Aerojet has constructed an in-situ bioremediation well where the water is

amended, released at the bottom of the well, the water moves up through the well filled with packing material that provides media to support bacterial growth, the water reaches the top and overflows back down the well and into the subsurface and groundwater. Flowrate is down to around 0.5 gpm to 1 gpm due to fine-grained materials. Successfully reducing perchlorate and nitrate to non-detect levels. Looking at applying this type of technology to the IRCTS at the Propellant Burn Area and Former GET F Sprayfield

- L Island OU Remedial Investigation Field Work: Second round of field work is complete. Commencing assessment of data for the RI/FS
- M Eastern Operable Unit – all initial proposed sampling has been completed. Supplemental sampling is now on-going to fill some data gaps. Agencies reviewed supplemental work plan.
- N Central Operable Unit – Draft sampling plan has arrived and is under review.

Inactive Rancho Cordova Test Site – NO CHANGES in FIELD WORK.

- i) **Sigma Complex In-situ Bioremediation** of Groundwater. NO CHANGES System has been operational for over a year. Boeing is adding an electron donor to remediate high concentrations on perchlorate in groundwater at the Sigma Complex. Boeing is recirculating groundwater and adding an electron donor (acetic acid) to stimulate biological growth and reduction of perchlorate. Initially the system will include one extraction and one recharge well, and several monitor wells. System is working very well. The system will be expanded after obtaining operational data from the initial wells to deal with the high concentrations of perchlorate (>4000 µg/L) in the upper groundwater.
- ii) An in-situ perchlorate remediation system has been constructed for pilot testing at the **Propellant Burn Area**. A gaseous electron donor, hydrogen, along with propane and nitrogen is being used. System operational with no results to report at this time. Switched to a propane-only injection to evaluate its use. Project completed and analysis. Waiting for report of results.
- iii) Additional soil sampling to define extent of perchlorate at the **Former GET F Sprayfield** has been completed.
- iv) **White Rock Road Dumps 1 and 2**. These two old burn dumps will be combined at the Dump 2 location on the IRCTS. That area is slated to be a park in the Rio Del Oro development. Work may not begin this year depending on the time it takes for the construction bidding process to be completed.

5. Site Reuse Project. Gary Riley and Kevin Mayer, EPA

EPA asked a consultant, E² Inc. to prepare a presentation identifying municipal land use planning authorities, relevant development processes and planned future uses for

consideration in near-term remedy selection processes at the Aerojet General Superfund Site (Aerojet Site). EPA considers reasonably anticipated future land use along with other criteria during remedy selection to ensure the selected remedy will be protective of human health and the environment under the anticipated use scenario. With information from the land owner, local land use authorities, and the community EPA considers the reasonably anticipated future land use when selecting a remedy. The attached presentation is to summarize development plans affecting Operable Unit (OU) 5 and to identify potential future use considerations that may inform the OU 5 Record of Decision.

A number of development plans overlap OUs 5&6, the Perimeter and Boundary OUs. EPA is required to consider current and future land use when selecting remedies. Please see the attached copy of the presentation slides.

A number of questions were generated during the presentation including:

Question: Did EPA comment on the Environmental Impact Report (EIR on the development plans).

Answer: It is not part of the Superfund program to comment on development plans. Other EPA groups may have commented.

Janis – Sacramento County Environmental Management did not have the funding to review the EIR.

Tim – The County did review the EIR.

Gary – The Superfund cleanup will be completed before development occurs.

Question: Did you review indoor air contamination.

Answer: Kevin- Two years of vapor intrusion investigation was completed. EPA and the State are allowing some portions of the property to be allowed to have unrestricted use, while other portions will have restrictions. Most of the restrictions are due to the potential for volatile organics in shallow groundwater to potentially pose an adverse condition in indoor air if residences were allowed to be built there.

The plume and contaminant levels are well understood. There are a couple of areas around the edge of the inner barrier that will need source areas cleaned up to avoid unacceptable concentrations in groundwater from migrating into OU5.

Risk assessment evaluates exposure under a residential use scenario.

It may be technically infeasible or unnecessary to clean up to a level of unrestricted use. EPA prefers cleanup to unrestricted levels without controls. Westborough has an area where the soil column is contaminated with perchlorate all the way down to groundwater; EPA is looking at treatment options and engineering controls. Land Use Controls for groundwater will be required by EPA.

Question: Does the County understand Superfund issues?

Answer: EPA encourages reuse of Superfund sites once they are cleaned up. EPA contracted with land use consultants and sat down with County and City planners and various staff from Folsom and the City of Rancho Cordova to discuss Superfund-related activities on Aerojet and development plans.

Question: Is Aerojet evaluating industrial activities for the site?

Answer: Tim – Yes, Aerojet considers all current and future uses with current Aerojet operations. The solar array will provide about 30% of the electricity for environmental needs. They are looking at additional energy producing opportunities.

6. Next meeting date set for April 28, 2010. 2010 Proposed Schedule for the Aerojet CAG Meetings

June 23

August 25

October 27

December 22 – suggest changing to December 15 to avoid holiday interference.

Reuse Assessment for Aerojet Site (DRAFT)

Future Land Use Plans and
Remedial Considerations

January 2010



Prepared by E² Inc. for EPA Region 9

Overview

Study Purpose (Aerojet Reuse Assessment Phase I)

- Identify municipal land use authorities and relevant development processes.
- Identify planned uses for consideration in near-term remedy selection processes.

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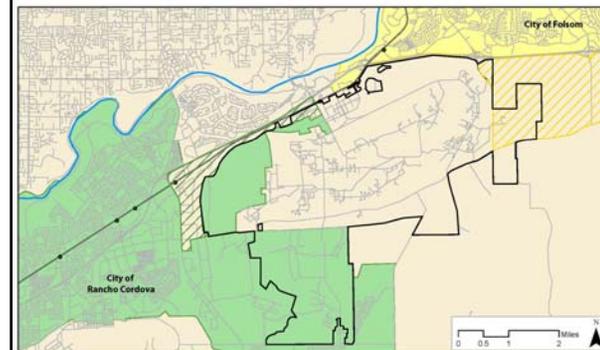
Aerojet Site Reuse Assessment

Presentation Overview

- Reuse assessment purpose
- Site background and remedial status
- Proposed developments and land use planning
- Remedial considerations

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Aerojet Property & Jurisdictional Boundaries



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Overview

Aerojet Property Background

- Approximately 12,000-acre property owned by Aerojet-GenCorp and used to support development and testing of rocket propulsion technologies.
- Approximately 5,900 acres of Aerojet property are included in the Aerojet Superfund Site.
- Aerojet maintains active industrial uses at portions of property; portions of property are in-active.
- GenCorp is re-positioning in-active areas for a broad range of real estate development opportunities.

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Aerojet Site Operable Units

Note: All boundaries are approximate.

General Features	Operable Unit Boundaries
Aerojet Property Boundary	OU5 Perimeter Groundwater (Groundwater Medium; divided into Zones 1-4)
Roads	OU5 Western Groundwater (divided into Zones 1-4)
Light Rail	OU5 Central
American River	OU5 Eastern
Landfill	OU6 Boundary
Carve-out Lands	OU6 Perimeter Groundwater (Soil Medium)
	OU6 Western Groundwater (divided into Zones 1-4)
	OU6 Central
	OU6 Eastern
	OU6 Southern
	OU6 Northern

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Overview

Site Remedial History

- In mid 1980's, interim response actions conducted to address ground water contamination threats.
- In 1989, EPA, California Department of Toxic Substances Control (DTSC) and Central Valley Regional Water Quality Control Board (RWQCB) signed Partial Consent Decree (PCD) with Aerojet to conduct Remedial Investigation/Feasibility Study (RI/FS).
- In 1983, Site placed on EPA's National Priorities List.
- In 2001, PCD modified to delineate and remove Carve-out lands and establish operable unit approach for RI/FS activities at remaining Site property.
- Site is currently divided into nine operable units.

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Aerojet Site Operable Units 5 & 6

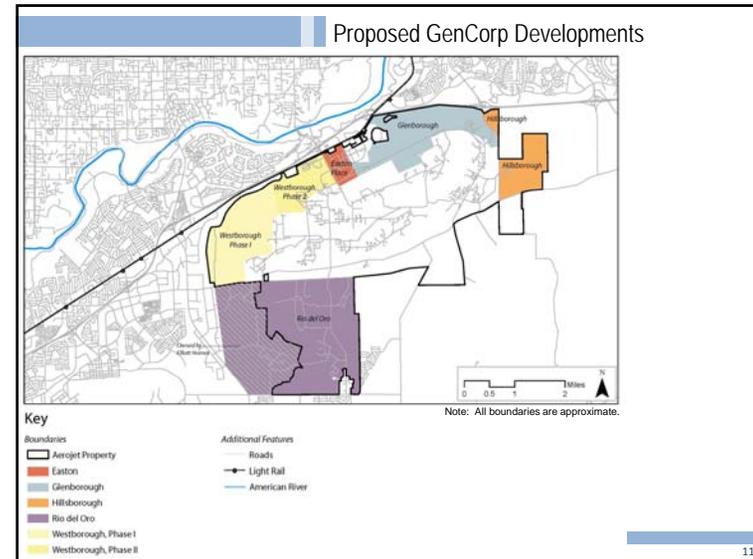
Easton Place & Glenborough

General Features	Soil Medium Operable Units
Aerojet Property	OU5 Perimeter Groundwater (Soil Medium)
Proposed Developments	OU6 Boundary
Roads	
Light Rail	
American River	

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Aerojet Site Operable Unit Status		
Operable Unit #	Operable Unit Name	Status
1	Overall Site	Study and remedy selection underway.
2	American River GET	Addressed under Perimeter Groundwater Operable Unit (OU 5) and other operable units.
3	Western Groundwater OU	ROD signed in 2001.
4	Area 41 Soil & Groundwater	Study and remedy selection underway.
5	Perimeter Groundwater	Proposed Plan issued for public comment in August 2009; ROD anticipated in Spring 2010. Landfill included in OU 5, with closure overseen by state and county authorities.
6	Boundary OU Groundwater and Soil	Study and remedy selection underway.
7	Islands OU Groundwater and Soil	Study and remedy selection underway.
8	Eastern OU Groundwater and Soil	Study and remedy selection underway.
9	Central OU	Study underway.

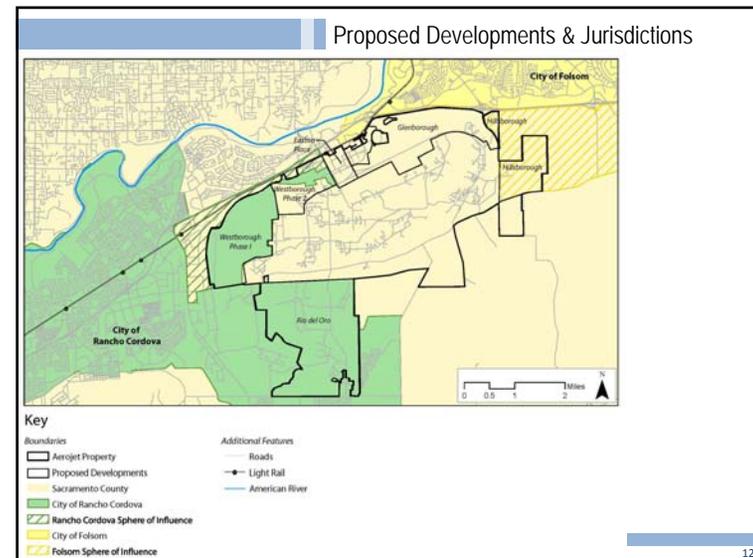
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- Proposed Developments**
- ### GenCorp Proposed Developments
- **Easton Place:** 183-acre transit-oriented community, high-density residential, retail and commercial office.
 - **Glenborough:** 1200-acre mixed use development featuring low to medium density residential, retail, commercial office, and natural preserve areas.
 - **Westborough:** 1,695-acre development featuring residential uses, a new regional town center, village centers, parks and open space, a high school, and commercial uses.
 - **Rio del Oro:** 3,828-acre development (2,328 acres owned by GenCorp) combining several village and town centers, business and industrial parks, a wetland preserve area, and residential uses.
 - **Hillsborough:** 629-acre mixed-use town center, commercial office, regional parkland and low-density residential uses.

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Municipal Jurisdictions & Planning Areas

Jurisdictions	Land Use Planning Areas (existing)	Annexation Areas (future)	Operable Units
Sacramento County	Aerojet Special Planning Area (land use plan, zoning regulations, design standards)	N/A	4, 5, 6, 7, 8, 9
Rancho Cordova	Aerojet Special Planning Area (land use plan, zoning regulations, design standards)	Rancho Cordova Sphere of Influence	3, 5*, 6, 7, 9
Folsom	N/A	Folsom Sphere of Influence (South of 50 Specific Plan)	7 (Area 40)*

* Portion of OU to fall within future annexation area.

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- Municipal Land Use Planning Authorities**
- ### Sacramento County Development Review Process
- **Application to Planning Department**
Applicant proposes development plans and requests approval of Specific Plan, General Plan and zoning amendments, and other entitlements.
 - **Environmental Review**
Municipality issues Notice of Intent (NOI) to prepare draft Environmental Impact Report (EIR) and potentially Environmental Impact Statement (EIS) for proposed development; draft EIR/EIS reviewed by municipal planning and environmental review departments, zoning administrator, subdivision review committee, federal and state agencies; Board of Supervisors certifies final EIR/EIS.
 - **Land Use Approval**
Amendments to planning policy documents such as General Plan, zoning code and subdivision maps are reviewed by municipal planning and environmental review departments who make recommendations for subsequent approval actions by municipal planning commission, board of supervisors, and others as appropriate.
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- Municipal Land Use Planning**
- ### Typical Land Use Planning Tools
- **General Plan**
Identifies land use zones, specific plan areas, and special planning areas – includes text and map exhibits.
 - **Zoning Code**
Describes permitted uses within each land use zone – formal land use regulations.
 - **Subdivision Regulations**
Identify parcels, use designations, and development conditions at parcel level – includes maps and subdivision regulations.
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Approval Status for GenCorp's Proposed Developments

Jurisdiction	Proposed Development	Development Status	Operable Unit
Sacramento County	Easton Place (183-acres)	<input checked="" type="checkbox"/> Application Submitted (1/20/04) <input checked="" type="checkbox"/> Environmental Review (12/10/08) <input checked="" type="checkbox"/> Land Use Approval (1/28/09)	5, 6
	Glenborough (1,200 acres)	<input checked="" type="checkbox"/> Application Submitted (1/20/04) <input checked="" type="checkbox"/> Environmental Review (12/10/08) <input checked="" type="checkbox"/> Land Use Approval (1/28/09)	5, 6, 8
Rancho Cordova	Rio Del Oro (3,828 acres)	<input checked="" type="checkbox"/> Application Submitted <input type="checkbox"/> Environmental Review <input type="checkbox"/> Land Use Approval	
	Westborough (1,200 acres)	<input checked="" type="checkbox"/> Application Submitted <input type="checkbox"/> Environmental Review (in process) <input type="checkbox"/> Land Use Approval	5,6,7,9
Folsom	Hillsborough (629 acres)	<input checked="" type="checkbox"/> Application Submitted <input type="checkbox"/> Environmental Review <input type="checkbox"/> Land Use Approval	7

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Development Restrictions

Current Development Restrictions (Easton Place / Glenborough)

- **County Approval Conditions**
Development restrictions established in General Plan, zoning amendments, and tentative subdivision maps (e.g., Zoning Code of Sacramento County – Aerojet Special Planning Area [amended 1/28/09], Easton Rezone Conditions [approved 1/28/09], Easton Tentative Large and Small-Lot Subdivision Maps [approved 12/17/08].
- **Partial Consent Decree**
The 1989 Partial Consent Decree (PCD), and subsequent modifications to the PCD establish specific provisions for the transfer of Site property owned by Aerojet and require deed restrictions for Carveout Lands.

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Proposed Developments

Easton Place (Sacramento County) Remedial Considerations



- Approved by County for transit oriented development, high-density residential, public, retail and commercial office uses.
- High density residential uses approved for area impacted by OU 5 soils; high density residential, mixed-use commercial and public uses approved for area impacted by OU 6.
- Cleanup will likely need to include targeted use restrictions (e.g., development standards, construction methods or engineering controls) or allow for unrestricted use in order to support County approved land use.

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Proposed Developments

Aerojet Site Operable Units & Proposed Developments



Note: All boundaries are approximate.

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Proposed Developments

Glenborough (Sacramento County) Remedial Considerations



- Impacted by OUs 5, 6 and 8.
- Residential uses, community resource area and open space approved by County for area impacted by OU 5.
- Commercial and high-density residential uses proposed for portion of OU 8.
- Medium density residential uses approved by County for area impacted by OU 6.
- Cleanup at OUs 5, 6 and 8 and landfill will likely need to include targeted use restrictions (e.g., development standards, construction methods or engineering controls) or allow for unrestricted use in order to support County approved land use.

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