



**Buck King – PG, CHG**

**12/4/2009**

California Department of Toxic Substances Control (DTSC)  
700 Heinz Avenue, Berkeley, California 94710 (Via U.S. Mail and E-mail)

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**Comments on the Group 3 Remedial Investigation (RI) Report formerly known as RCRA Facility Investigation (RFI)**

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ACME (Aerospace Cancer Museum of Education) has provided the below comments on Group 3 Remedial Investigation (RI) Report. The drainages from the majority of the Group 3 RI Reporting areas reach the Silvernale Reservoir in The Boeing Co. owned AREA III and is then released into the R2-Pond in the National Aeronautics and Space Administration (NASA) owned AREA II of the Santa Susana Field Laboratory (SSFL) and then released into Bell Creek – The Headwaters of the Los Angeles River.



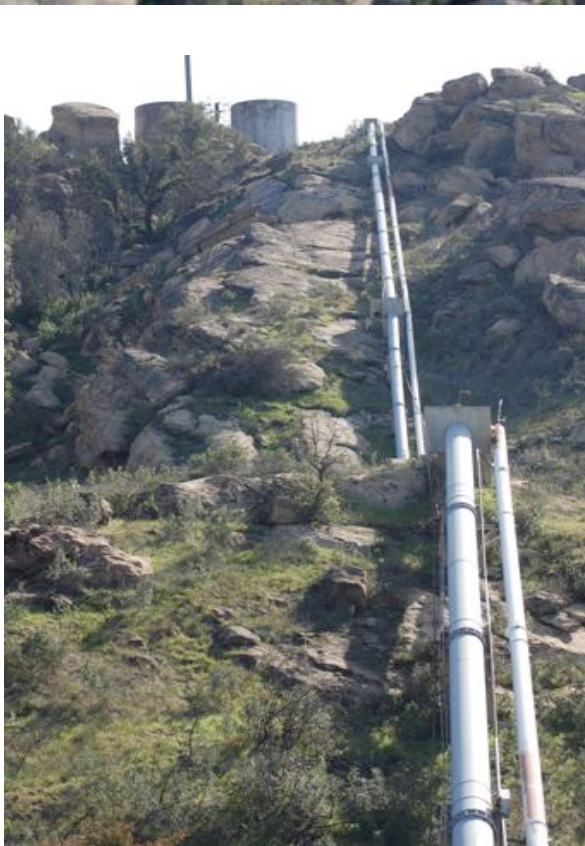


Areas around Building 204 in the NASA AREA II of the SSFL were used as staging and holding areas of solvents and other chemicals that impact the asphalt and then into the soil through cracks as seen in the photo above. This area sits high above other reporting areas and samples should be taken in logical step-out points from here on out.

As a geologist you may understand the complexity of the Chatsworth Formation, a highly jointed and fractured, and as such it does have a secondary permeability and porosity that is much higher than the formation primary permeability and porosity. Accidents have happened at this site as documented and we need to follow these spills before they reach the water table. There needs to be further testing done to find out the true nature of the groundwater movement, to be sure that it is not moving down into the deeper groundwater. There should be the consideration that there was a very high potential for near surface groundwater or water which infiltrated into the near surface, especially in the holding ponds, to infiltrate into the deeper Chatsworth Formation Operable Unit along the many open and connected joints and fractures.



<http://www.youtube.com/watch?v=nu0vmibHvYM> This link should be viewed to understand the amounts of water used in a single engine test, it is incredible. I would say thousands of gallons. This water was taken from the reclaimed tanks at skyline drive.



Where these pipes come into the ALFA Test Area in the NASA AREA II of the SSFL there appears to be an obvious contamination problem as we see the Stripping Towers in place, yet it has been stated that these were turned off several years ago to study if the groundwater contamination will stay on site or migrate.



Now that we saw the amount of water is used in these tests we have to look at this Reclaimed Water and where it travels. We see the cracks of the Chatsworth Formation.



Here we see the drainage is lined with concrete. The Below photo shows it was not there during earlier test fires so earlier tests had a bigger impact to subsurface groundwater.





An estimated 800,000 gallons of Trichloroethylene (TCE) were used to clean engine parts before and after each firing. This ultimately leached into the groundwater forming several plumes as well as impacted several areas of surface waters.

TCE is the cause of many Health Problems including Cancer.

TCE was detected in 355 of 425 monitoring wells sampled at the site.

Source: February 8, 2007 Report "Santa Susana Field Laboratory Groundwater Investigation"  
Prepared by Thomas Seckington, P.G., C.H.G. Department of Toxic Substance Control (DTSC)

Trichloroethylene (TCE) was used much more recently at the ALFA Test Stands than what was known. From meeting with former workers and from data in the Boeing Worker Health Study it is documented that TCE use went into the mid 1990's. I would think that this is a RCRA violation as it occurred and continued after 1979.



TCE use is very much a mystery as well as the amounts used. I urge the DTSC to sample under LOX tanks as from what I am told by NASA that TCE is used in flushing LOX lines. Please read this quote... "Immediately before a kerosene-burning engine was tested, TCE flushing was performed on the thrust chamber, or chambers in the case of a cluster engine, and the LOX Dome. The LOX Dome would have TCE run through it for a specified period of time". The above quote was taken from the Final Report, Santa Susana Field Laboratory (SSFL), Air Force Plant No. 57 Site Operations/Ownership History, Prepared for the U.S. Army Corps of Engineers, Omaha District, Prepared by Techlaw, Inc. October 4, 1990. Please make this report available online to the rest of the community and inform ACME when the link is active so we can direct people to it.

In the past anything that was labeled as LOX was pushed aside for other issues of contamination, but now we know that TCE was used in LOX operations, these areas should become suspect. Some of the highest concentrations of TCE vapors from the SSFL come from the NASA AREA I LOX Plant Facility in the Northern Drainage of the SSFL. I request that the DTSC find and locate the LOX lines that ran up to the SSFL from the Rocketdyne Spur railroad facility in Simi Valley and sample along this pathway for TCE contamination. This system of pipes could have a potential impact on the neighboring communities and should be looked into immediately.

ATTACHMENT 1(33)  
WASTE CHARACTERISTICS - EPA 2

NAME AND QUANTITY OF CONSTITUENT	EPA NO.	DESCRIPTION OF SIGNIFICANT COMPONENTS	PHYSICAL STATE AT THE TIME OF DELIVERY**
FLOXINE 75,000 LBS.	PC56 0001 0002	LIQUID CHROMIC OXIDIZER	VAPORS FROM ANY LEAKS OF LIQUID WHICH WOULD IMMEDIATELY GASIFY AT ROOM TEMP
28% (DILUTED) RED FUMING NITRIC ACID	0002 7074 (FOR NO.)	NITRIC ACID WITH ADDED NITRIC OXIDE (NO <sub>2</sub> ) AND BACHTIN ADDED INHIBITOR.	
1,000 LBS.		HYDROGEN FLUORIDE HF 0.8%	
HYDROGEN PEROXIDE 500 LBS.	0001	ROCKET PROPELLANT OXIDIZER @ 90%	USED AT VARIOUS CONCENTRATIONS IN WATER FOR REMEDIAL TREATMENT TO NEUTRALIZE HYDRAZINES TO IMMEDIATE PRODUCTS
NITROGEN DIOXIDE (GAS) DECOMPOSITION PRODUCT OF NITROGEN TETRAOXIDE 10 LBS.	7076 0001	NITROGEN OXIDES ARE THE PRINCIPAL COMPONENTS OF 0000	VAPORS FROM GASIFIED OXIDIZER (BRN RINGS)
HYDROGEN TETRAOXIDE (LTD) LIQUID 10,000 LBS.	0002 7078	ROCKET PROPELLANT OXIDIZER; THE LIGHTER REDDER GREEN NITROGEN DIOXIDE (NO <sub>2</sub> ) AT ROOM TEMPERATURE	VAPORS FROM ROCKET ENGINE COMBUSTION PROCESS OR LIQUIDS FROM ANY LEAKS (BRN RINGS)
NITRIC ACID 10,000 LBS.	0001	OXIDIZER, CORROSIVE ACID	BRN RINGS
HYDROGEN FLUORIDE 100 LBS.	013A 0001	OXIDIZER, CORROSIVE REACTIVE PRODUCT OF FLOXINE AND WATER	LIQUID

\* Total amount, in pounds of constituent, that has passed through the impoundment intermittently during a 24 year period.

\*\* DELIVERY means TRANSPORT OF CHEMICAL COMPOUNDS, by whatever PHYSICAL PROCESS going into the impoundment environs.

ATTACHMENT 4(33)  
WASTE CHARACTERISTICS - ALPHA-BRAVO SKIN POND

NAME AND QUANTITY OF CONSTITUENT	EPA NO.	DESCRIPTION OF SIGNIFICANT COMPONENTS	PHYSICAL STATE AT THE TIME OF DELIVERY**
RP-1 (STRAIGHT-RUN KEROSENE FRACTION - SOME CROSS HAZE NAPHTHENE, CYCLIC PARAFFINS) 2,000 LBS.	CALIFORNIA ADMINISTRATED CODE 22, SEC. 0117 (FOR EPA # 011)	KEROSENE-BASED FUELS	VAPORS FROM ROCKET ENGINE OR LIQUID FROM ANY LEAKS
HYDRAULIC OIL	CALIFORNIA ADMINISTRATED CODE 22, SEC. 0117 (FOR EPA # 011)	LUBRICATING OIL	ENGINE LEAKS
TRICHLOROETHYLENE 22,000 LBS.	0128 0001		
MISCELLANEOUS CHLORINATED SOLVENTS 50 LBS.			
1,1,1-TRICHLOROETHANE 50 LBS.	0124 0001		ALL WERE TESTED IN SUPPORT OF SUBSEQUENT OPERATIONS AND MAINTENANCE PARTS DECOMPOSITION
1,1,2-DICHLOROETHANE 1,1,2-TRIFLUOROETHANE (DECOMP. PRODUCT) 1 LBS.	0001 0001		

\* Total amount, in pounds of constituent, that has passed through the impoundment intermittently during a 24 year period.

\*\* DELIVERY means TRANSPORT OF CHEMICAL COMPOUNDS, by whatever PHYSICAL PROCESS going into the impoundment environs.





When you drive up to Bravo from below, the test stands are to the left of the road. The below photos show a paved area is to the right. There is a Drying Wall to hang parts on after there are cleaned with solvents. Please note there are streetlights installed in this area for night work. This area needs to be sampled extensively.





The below photo shows an area just to the North of the Drying Wall and it is a natural drainage course that needs to be sampled. The pipelines above could have been compromised at one point and cleaned with solvents or TCE and had a potential impact to this drainage.



A spray system from the BRAVO LOX Tanks near WS-9 drain into a swale that leads into the drainage channel we saw above. These pipes are labeled Reclaimed Water and this area has historic documented contamination and should be looked into more thoroughly.



This photo shows a sump that drains into the above drain swale from the catch basin of WS-9, a highly contaminated well.



There have been reports from a former employee and has been documented by a visit from the DTSC and Region IX of the Environmental Protection Agency (EPA) regarding his accounts of draining waste into WS9 and it was said to be a standard practice.



The above Yellow Push Pins indicate the areas of the Drying Wall (The Yellow Push Pin to the very left of the photo) and the waste draining into WS9 was located at the other Yellow Push Pin. We also see the Hazardous Waste Storage Area/Hazardous Waste Coolant Tank (HWSA/HWCT) area in the upper left (Cleared Field with off-white colored soil) an area that again, drains through SPA to Silvernale.



The photo above shows the ALFA/BRAVO Fuel Farm and as you can see the catch basin is designed to have runoff into the natural drainage that leads into the Storage Propellant Area (SPA) located in the NASA AREA II of the SSFL.





The drainages from the majority of the Group 3 RI Reporting area reach the Silvernale Reservoir in the Boeing AREA III and is then released into the R2-Pond in the NASA AREA II of the SSFL and then released into Bell Creek – The Headwaters to the Los Angeles River. There was a plan initiated by The Boeing Co. that was rejected by the Triunfo Sanitation District on November 23<sup>rd</sup>, 2009 and issues like these are falling under the radar of the DTSC, EPA and the Los Angeles Regional Water Quality Control Board (RWQCB). See the agenda...

<http://www.triunfosanitationdistrict.com/TSD%202009%20Meetings/TSD%2011-09%20Meetings/TSD%20Nov%202023%202009%20Packet.pdf>

The Boeing Co. proposed everything from Silvernale Reservoir to be directed past the National Pollutant Discharge Elimination System (NPDES) permitted outfall by the RWQCB and drain into Bell Creek – the L.A. River Headwaters. This would bypass detection and go into public areas offsite without knowing the contaminant levels. This needs to be looked into and the DTSC should require this plan to go public before they present it to Triunfo or any other agency in the future.

Transparency is a big issue with the community, what they don't know, may impact ones health. This would also go with the title page of the report and who created it. CH2MHill does not appear on the reporting signature page and the community should know who is doing the investigations.



Below we see the Skyline Drive Reclaimed Water Tanks with BRAVO seen through them. Tanks numbered 826, 827 and 828 are not included in the Group 3 RI Report and should be as they are reclaimed and lead into the Group 3 areas.



The above photos are right outside Building 204 in the NASA AREA II of the SSFL and below is the berm that drops down into the Boeing owned AREA III. Whenever you see storage or a safety shower there are chemical and/or radiological impacts to the underlying soil and should be investigated. Why is building 775 in the NASA AREA II excluded. Is there any historical data on this facility that you can provide to the public?



The photo on Page 58 of your Powerpoint Presentation to the Community is a photo of the APTF in AREA I and is not in the Group 3 RI reporting area. These reports are hard enough to read as it is and to download these online can take hours for someone who has an older computer or a slower internet service. A simple One Page Reporting Map should be available for future reporting groups to make this easier for the public to comment on. The building Documentation Feature Logs should include all drains and sinks as every drain and sink was used at least once for waste disposal according to several former employee interviews.

With the President Obama Stimulus monies allocated for the investigation of the Radiological Background Study and Historical Site Assessment the EPA has uncovered amazing aerial photography that goes back 75 years and this information should be shared with DTSC as they are Sitewide photos and could be of great help in investigating historical storage and dumping areas. The agencies need to coordinate more with each other so our tax dollars related to the cleanup are spent more wisely. I would like to study a few photographs that you included in your powerpoint presentation. Could you please provide ACME with High Resolution Images from Page 31, 35 and 44 of your powerpoint?

We need to ensure public health and safety by additional sampling, re-working/re-writing the entire Group 3 RI Report and request the No Further Action in regards to the Hazardous Waste Coolant Tank be reconsidered. Every single inch of this site needs to be characterized as it sits above several communities with the potential to risk ones health every time it rains or the wind blows. With a complex research site operated with a "Learn as we go" approach the words "No Further Action" should not be considered anywhere sitewide or even in the adjacent offsite areas.

Sincerely Concerned,

William Preston Bowling

Co-Founder/Director - ACME (Aerospace Cancer Museum of Education)

<http://www.ACMELA.org> 23350 Lake Manor Drive, Chatsworth, California 91311

cc: Allen Elliot & Merrilee Fellows - NASA, Tom Gallecher - The Boeing Co., Cal EPA Secretary Linda Adams, Maziar Movassaghi & Susan Callery - DTSC, Billie Greer for Governor Arnold Schwarzenegger, Assemblymember Audra Strickland, Assemblymember Cameron Smyth, Louise Rischoff for Assemblymember Julia Brownley, Rebekah Rodriguez-Lynn for Senator Fran Pavley, Christina Walsh -

CleanupRocketdyne.org, Phyllis Winger for Los Angeles County Supervisor Greig Smith, Los Angeles County Supervisor Dennis Zine, Shelly Backlar - Friends of the Los Angeles River, Millie Jones for Los Angeles County Supervisor Michael Antonovich.

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