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Thank you for this opportunity to comment on and ask a few questions about the OB/OD Unit Closure Determination and Report on Completion of Third Party Quality Assurance Confirmation Surveys for the Aerojet facility as well as updated cleanup activities at the facility. We also appreciate the efforts of Jeanne Garcia and Stacey Lear in getting us the 754 MB worth of information about the closure.

We couldn't open 595.55 MB worth of files on these two CD-R computer disks (list attached) meaning we were able to look at just 21% of the information. We would like to request the other 79% of the data and the time to analyze it and comment on it, if possible.

Regardless, we have comments and questions about the information we have. In order to facilitate communicating our comments/questions, and to better explain the issues to our readers later, we have uploaded photographs, maps, tables and figures that are hot-linked in this document.

If you find that many of the answers to our questions and comments are in the unopened folders and files, and that it would better for us to get that information first and then resubmit this document, that's fine with us, and indeed is our preference.

We do realize that this is a public comment document but we have a number of questions. We've assumed this must be acceptable since DTSC's Fact Sheet #4, March 2009, called "Aerojet, Chino Hills, OB/OD Closure Determination, Cleanup Activities Update, Public Comment Period & Open House," says on page 4 that "You may use the enclosed form to send in questions or comments during the public comment period."

Our comments and questions, following, are organized by sourcing information, and sometimes underlining it, followed by *italicized questions*. We invite your comments on our comments as well as your answers to our questions. Thank you!

Michael Collins & Denise Anne Duffield  
[EnviroReporter.com](http://EnviroReporter.com)

## Aerojet Chino Hills OB/OD closure comments

### **PROCESS:**

As noted in the March 21 edition of the *Chino Hills Champion* newspaper stated in an article by Marianne Napoles about Aerojet Chino Hills that "Two reports documenting the closure of the OBOD unit will be available for public review at the open house," before later stating that the documents still weren't at the Chino Hills library as of the night of the DTSC open house March 26. "DTSC spokeswoman Jeanne Garcia said she would speak with the open house team about bringing copies to the library."

Comment:

The public comment period began March 11 yet the reports to comment on were not available to the public until at least March 26, over two weeks into the process. This denied the public the information on which to comment on for at least half the comment period time.

*Would DTSC please extend the comment time an additional two weeks to have the documents available to the public? Would DTSC issue a public notice to reopen the comments to ensure that the public has the proper time and opportunity to comment on the OB/OD closure plan?*

Also, as we will show in our comments below, the surface water at the Aerojet Chino Hills site is leaving the site with extremely high levels of uranium, possibly from Depleted Uranium (DU) contamination, and making its way to the Santa Ana River during the rainy season. Over two million people in Orange County rely on the Santa Ana River for drinking water meaning that they are potentially interested and concerned parties.

*Did DTSC put notices in the Orange County media, such as the Orange County Register and/or the Los Angeles Times, to inform these people of the OB/OD closure plan and the chance for the public to comment? If not, why not?*

*Will DTSC put notices in the Orange County media, such as the Orange County Register and/or the Los Angeles Times, to inform these people of the a new comment period for OB/OD closure plan and the chance for the public to comment? If not, why not?*

Comment:

None of this material, including public notice of the recent community meeting, is on the DTSC Envirostor website at [http://www.envirostor.dtsc.ca.gov/public/hwmp\\_profile\\_report.asp?global\\_id=CAD981457302](http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report.asp?global_id=CAD981457302)

When we requested this material, as journalists and concerned parties, we were kindly sent two CD-R computer disks with, apparently, the entire file for the OB/OD closure process. However, as noted in our cover letter above, only 21% of the file size is actually readable on our computers which have fairly advanced software.

*Would DTSC consider posting all of this information on its Envirostor website, in an accessible format, for Aerojet Chino Hills to ensure that the public and interested parties, including us, have a chance to adequately inspect the information and therefore have the opportunity to intelligently comment on it? Would DTSC post this material online, post a public notice in the local media, and provide the public another full 30-day period to comment?*

*If that is impossible, would DTSC please send us amended CD-R computer disks with the entire file for the OB/OD closure process readable on a computer with generally-used computer programs? Should DTSC do this, would it allow us additional time to inspect and comment on this information?*

### **TESTING OF THE OB/OD 14-ACRE AREA'S SOIL AND SURFACE & SUBSURFACE GROUNDWATER FOR DEPLETED URANIUM (DU) CONTAMINATION**

There are a number of issues related to this commented on, and questioned about, following:

In the March 14, 2007 "Aerojet Chino Hills - Open Burn/Open Detonation Unit - Ordnance Removal - Project Final - Ordnance Removal Report," it reads on Page 49 that "In addition to the types of ordnance identified above that were removed during the mechanical screening process, an intact DU tip was removed from the pick line of the screen plant in 2003. It was commingled with other items coming across the line where a UXO technician was stationed. The DU tip did not contain explosives, and thus did not need to be managed as an explosive."

This means that the OB/OD area was used to test DU projectiles and ordnance. That shouldn't be surprising considering that "Aerojet assembled, developed, and tested depleted uranium munitions (DU) at the Aerojet Chino Hills Facility from the early 1970's until mid 1995, under a State of California radioactive materials license," according to Bernhardt, D.E. and Salsman, J.M. and Owen, D.H. and Vanderkar, D.E., *D&D of a DU munitions test facility for unrestricted use*, Proceedings of the Topical Meeting on Decommissioning, Decontamination and Reutilization of Commercial and Government Facilities (1997), pp. 81 - 6.

The preceding is available online at <http://fds.duke.edu/db/pratt/BME/faculty/dhowen/publications/65576>

Comment:

*Does DTSC have a complete and comprehensive inventory list of munitions and ordnance tested, exploded, detonated and/or disposed of at the OB/OD site?*

*Does DTSC have a complete and comprehensive inventory list of DU munitions and ordnance tested, exploded, detonated and/or disposed of at the OB/OD site?*

*Has DTSC ordered Aerojet to test the soil, surface water and groundwater at the OB/OD site for DU contamination? If not, why not?*

*Has DTSC ordered Aerojet to test the soil, surface water and groundwater at the OB/OD site for alpha, beta and total radium-226 and radium-228 contamination? If not, why not?*

*Were retrieved MECs checked for radioactivity? If not, why not? Was the scrap metal checked for radioactivity? If not, why not?*

### **POTENTIAL HEAVY METAL & VOLATILE ORGANIC COMPOUND (VOC) CONTAMINATION**

"Over 260,000 cubic yards of soil were re-excavated and re-screened with over 47,000 items and 120,000 pounds of inert fragments recovered," says the DTSC notice of March 26, 2009 meeting, available at [http://www.enviroreporter.com/files/Aerojet\\_FS\\_Cleanup\\_Activities\\_2\\_.pdf](http://www.enviroreporter.com/files/Aerojet_FS_Cleanup_Activities_2_.pdf)

Comments:

The OB/OD screening process was for fragments of actual and suspected UXO and MEC over 1/2" (half-inch) in diameter. This does not take into account the possible residual contamination of smaller UXO and MEC objects, including, but not limited to, "vaporized" objects that were destroyed upon detonation.

*Has DTSC ordered Aerojet to test the soil, surface water and groundwater at the OB/OD site for heavy metals and/or VOC contamination? If not, why not?*

### **POTENTIAL RESIDUAL MEC CONTAMINATION IN OB/OD SITE**

On page 8/27 of the 28-page PDF entitled "REPORT ON COMPLETION OF THIRD-PARTY QUALITY ASSURANCE CONFIRMATION SURVEYS - Former Open Burn/Open Detonation Area" by Geomatrix Consultants, Inc. dated March 12, 2007, it states:

"The intent of this effort was to produce a final or "clean" survey map showing that the surveyed area was as free of anomalies as possible. However, because of the presence of very small pieces of metal fragments, hot rocks, and false positives (seemingly caused by natural geologic conditions), it was not possible to provide a "clean" map that would show the area completely free of electromagnetic signals."

*Does this mean that there is the possibility that metal fragments and/or small munitions and MECs could still be in the project area? What are the implications of this? Does this present any danger of MEC exposure to future visitors and/or construction workers at the project site?*

On page 18 of the 28-page PDF entitled “5010\_Chino\_PhI-II\_Report\_082306,” it states “Although some anomalies may appear as a single target, they may actually contain two, or possibly more, items. For instance, when two metal items are near each other, their anomalies can merge, creating an irregular shaped anomaly that may be picked as only one target. In addition, if there is a large item near a small one, the anomaly from the small item may be masked by that of the larger item.”

*If a small item’s magnetic signature is masked by a larger item’s signature, is it possible that the removal of the larger item may not include removal of the smaller item? If so, what are the implications of the smaller items being left in place? There is no indication that there was a system and/or procedure to deal with this in-situ situation. Or was there?*

The reports do not give the specifications of the MEC detectors utilized on the project site. In order to ascertain relative risks from remaining MECs and/or small and large target items, it would be helpful to know how deep these instruments can penetrate.

*Can DTSC, Aerojet and/or Blackwater provide a list of all magnetometers used and their depth-detecting specifications?*

### **WORK DONE AT THE OB/OD SITE AS A RESULT OF A “SETTLEMENT”**

DTSC provided *EnviroReporter.com* a 72-PDF report entitled:

“Aerojet Chino Hills  
Open Burn/Open Detonation Unit  
Ordnance Removal Project  
Final Ordnance Removal Report”

On page 6 of this report, PDF page 12/72, it reads:

“As a result of finding MEC in the previously processed soils of the OB/OD area (suspect backfill material), URS (as successor to D&M) and Aerojet entered into a settlement agreement under which URS agreed to repeat the soil excavation and screening process in the OB/OD area under a new contract and a new plant design and protocol.

“As required by the settlement agreement, URS prepared the set of work plans described in Section 2.0, and retained Weston to provide work plan reviews and inputs, UXO technician support, and quality control activities of the field operations as they related to ordnance removal.

After all supporting documents were written and approved by all concerned parties, the rescreening project's field activities commenced in the summer of 2003."

*What "settlement" is this passage referring to? Can DTSC provide a copy of this settlement? What are the exact reasons for the settlement and "new contract"? Could DTSC provide the new contract and "protocol" mentioned here? Could DTSC provide the "work plans" that URS prepared. And, who were "all concerned parties" mentioned here and was the general public informed of this process and have the ability to comment on it?*

### **MORTAR SHELLS UNDER PAVEMENT**

In the above-referenced 72-page report, on page 50, PDF page 56/72, it reads:

"There were two 60mm mortars discovered during the spread and dry area sweep activities; however, both were located outside the affected project area. One of the 60-millimeter mortars was discovered on the northern outside edge of the spread and dry areas. The Weston UXO team discovered it while doing a sweep of one of the grids within Spread and Dry Area 1. UXO team members detected the item as they swung their Schonstedt over the edge of the grid into the adjacent area. The other mortar was discovered under the asphalt road at the far south end of the OB/OD area near the drainage culvert that ran under the road and out of the excavation area. The backhoe operator was scraping soil off the wall of the excavation area when his bucket scraped the edge of the road. That is when the round fell out from under the roadway pavement."

*Can DTSC and Aerojet guarantee that all roads within the "kick-out" area surrounding the OB/OD area, available at [http://www.enviroreporter.com/images/3-20-08A\\_-\\_OBOD\\_Kick-Out\\_radius.jpg](http://www.enviroreporter.com/images/3-20-08A_-_OBOD_Kick-Out_radius.jpg) and [http://www.enviroreporter.com/images/3-20-08C\\_-\\_Hazardous\\_Fragment\\_Distance.jpg](http://www.enviroreporter.com/images/3-20-08C_-_Hazardous_Fragment_Distance.jpg) are free from mortar shells, UXO and/or MEC by the time the OB/OD closure is completed?*

### **"KICK-OUTS" OUTSIDE OF THE OB/OD SITE AREA**

In the DTSC-provided document "Final Ordnance Removal Report on the Ordnance Removal Project" that occurred at the GenCorp Aerojet, Chino Hills, CA, Facility, from April 2003 to July 2006," inclusively, it reads:

"In the way of background of the project, Aerojet began operations at the site in 1954 loading, assembling, and packing several government munitions systems under contracts with the United States Department of Defense (DOD). A representative number of assembled ammunition rounds were selected and fired in the test areas at the site to ensure the quality of the ammunition within given batches or "lots." Rejected or "out of specification" ammunition was taken to a treatment area for destruction. Most of the out of specification ordnance items were destroyed through this process, but some items that were "kicked out" during detonation. The "kick out" items were dispersed throughout

most of the OB/OD area. Some undetonated items remained within the shot hole. Operations ceased in November 1995.”

*We realize that the answer to the question we ask here may be in the documents that we weren't able to open, but we don't know. Therefore we ask if DTSC and Aerojet can guarantee that all locations within the “kick-out” zone surrounding the OB/OD area, once again available at [http://www.enviroreporter.com/images/3-20-08A\\_-\\_OBOD\\_Kick-Out\\_radius.jpg](http://www.enviroreporter.com/images/3-20-08A_-_OBOD_Kick-Out_radius.jpg) and [http://www.enviroreporter.com/images/3-20-08C\\_-\\_Hazardoous\\_Fragment\\_Distance.jpg](http://www.enviroreporter.com/images/3-20-08C_-_Hazardoous_Fragment_Distance.jpg) are free from mortar shells, UXO and/or MEC by the time the OB/OD closure is completed or by the time of the final disposition of the property?*

### **PROVE-OUT AREA SHRINKAGE**

According to the DTSC-supplied report "GEOPHYSICAL MAPPING WITHIN THE OB/OD AREA PHASE I AND II," it says "The purpose of this survey is to conduct third-party digital geophysical mapping within the bottom of the OB/OD excavation to provide additional confirmation that URS Corporation was successful in removing unexploded/ ordnance explosive (UXO/OE) items from the OB/OD excavation area. UXO/OE is also known as munitions and explosives of concern (MEC).”

DTSC provided a January 24, 2005 “Prove-Out” figure, available at [http://www.enviroreporter.com/images/10-05-05A\\_-\\_bigger\\_OBOD\\_area.jpg](http://www.enviroreporter.com/images/10-05-05A_-_bigger_OBOD_area.jpg). However, when the Prove-Out actually occurred, the area checked was considerably smaller in area as this figure from October 2005 shows: <http://www.enviroreporter.com/images/Chino7-1B.jpg>

*Why was the Prove-Out area actually surveyed smaller in area than the one originally planned? Can DTSC and Aerojet assure that there are no UXO and/or MEC in the areas not “proved-out” as show by the actual survey map?*

### **UXO AND MEC DETECTIONS IN CONFIRMATORY SURVEY**

In the above-referenced October 2005 figure of the confirmatory survey, there is evidence that there may still be UXO and/or MEC in the soil of the OB/OD site. This is also evident on four other figures provided, available at <http://www.enviroreporter.com/images/Chino7-4.jpg> and <http://www.enviroreporter.com/images/Chino7-5.jpg> and <http://www.enviroreporter.com/images/Chino7-2.jpg> and <http://www.enviroreporter.com/images/Chino7-3.jpg>

Even more UXO and/or MEC contamination is apparent in the DTSC-provided figure from October 20, 2006, available at [http://www.enviroreporter.com/images/QA\\_1.jpg](http://www.enviroreporter.com/images/QA_1.jpg) especially in “Phase IV SPE” and “Phase IV DSG.”

We could not open the information about Phase IV in the CD-R computer disks that DTSC sent us, so we might be asking questions answered in those files we hope the department will send and allow additional time to comment on.

*Regardless, what are the plans, if any, to sweep these two Phase IV areas for UXO/MEC again to make sure they are free from contamination, unexploded ordnance and munitions? Can DTSC and/or Aerojet explain why the area immediately north of Phase IV SPE, and immediately west of Phase I South Area, seem to have the highest amount of “mV” detections? Can DTSC and/or Aerojet explain what they intend to do to completely remediate these areas and assure their safety with Quality Assurance confirmatory mapping?*

### **HARMFUL CHEMICALS/DU IN THE SURFACE & SUBSURFACE WATER**

The following excerpts are from DTSC’s 2009 “Aerojet, Chino Hills, OB/OD Closure Determination, Cleanup Activities Update, Public Comment Period & Open House”

P. 3/5:

“Results showed there were no harmful levels of chemicals in surface waters, nor were any chemicals detected outside of or migrating from facility boundaries that posed a risk to human health or the environment.”

P. 3/5:

“The assessment determined levels of uranium in site soils are well within allowable levels for human health and safety. In September 2004, DTSC concluded its review and found that levels of uranium at the site in soil, surface water and subsurface water are within acceptable human health based levels.”

*How could DTSC state this based on a report done before the OB/OD excavation and still say it when the OB/OD excavation did none of the tests mentioned above on the 14-acre OB/OD site after excavation?*

*How could DTSC make this after the high readings of uranium in the surface and subsurface waters at Aerojet Chino Hills as shown by the one DU reports on DTSC's Aerojet website available at*

*[http://www.envirostor.dtsc.ca.gov/public/hwmp\\_profile\\_report.asp?global\\_id=CAD981457302?](http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report.asp?global_id=CAD981457302?)*

This report yields two tables, one called “SUBSURFACE WATER SAMPLE RESULTS FOR URANIUM,” which is available at [http://www.enviroreporter.com/images/3-03\\_DU4\\_-\\_Subsurface\\_water.jpg](http://www.enviroreporter.com/images/3-03_DU4_-_Subsurface_water.jpg) and the other called “SURFACE WATER SAMPLE RESULTS FOR URANIUM,” which is available at [http://www.enviroreporter.com/images/3-03\\_DU5\\_-\\_Surface\\_water.jpg](http://www.enviroreporter.com/images/3-03_DU5_-_Surface_water.jpg)

*EnviroReporter.com* has analyzed the results and has found that DTSC seems to have erred in its conclusion about uranium contamination at the Aerojet Chino Hills site. Our analysis:

Table 5: Subsurface:

Upper A-12 Test Area:  $0.404 \text{ mg/l} = 0.404 \text{ ppm} = 4,040.0 \text{ ppb} = 4,040.0 \times 0.86 = 3,474.4 \text{ pCi/L}$

$3,474.4/20 = \underline{173.72 \text{ times U.S. EPA drinking water limit}}$

$3,474.4/30 = \underline{115.81 \text{ times U.S. EPA Maximum Contaminant Level}}$

$3,474.4/0.430 = \underline{8,080 \text{ times States Office of Environmental Health Hazard Assessment Public Health Goal.}}$

Table 6: Surface:

Creek Tributary ["WG-01-17"]:  $0.0885 \text{ mg/l} = 0.0885 \text{ ppm} = 885 \text{ ppb} \times 0.86 = 761.1 \text{ pCi/L}$

$761.1/20 = \underline{38.055 \text{ times U.S. EPA drinking water limit}}$

$761.1/30 = \underline{25.37 \text{ times U.S. EPA Maximum Contaminant Level}}$

$761.1/0.430 = \underline{1,770 \text{ times States Office of Environmental Health Hazard Assessment Public Health Goal.}}$

*How does DTSC explain its statement in the 2009 meeting notice/brochure that "levels of uranium at the site in soil, surface water and subsurface water are within acceptable human health based levels" with numbers like the ones we put forth above?*

**SURFACE WATER LEAVING AEROJET SUBJECT TO STRINGENT LAWS**

It is possible that DTSC and Aerojet are under the misimpression that the surface and subsurface waters at the OB/OD site, which were not tested, and other surface and subsurface waters leaving the site, including those polluted with high amounts of uranium, are not subject to regulation? That would seem to be incorrect.

In an October 17, 2000 DTSC report entitled "NOTICE OF DECISION FOR APPROVAL OF CORRECTIVE MEASURES FOR THE AEROJET ORDNANCE - CHINO HILLS FACILITY," available at [http://www.envirostor.dtsc.ca.gov/public/hwmp\\_community\\_involvement/1269406974/Aero%2520CEQA%252Epdf.pdf](http://www.envirostor.dtsc.ca.gov/public/hwmp_community_involvement/1269406974/Aero%2520CEQA%252Epdf.pdf), it reads on page 31 of the 75-page PDF:

“Surface Water Rainfall runoff from the central 01 southern portion of the Facility (covering approximately 80% of the Facility) drains toward the west into Soquel Canyon. Surface water runoff within Soquel Canyon accumulates in Lake Aerohead Lake Aerohead, located within the Facility, is used for the detention of rainwater runoff only and is commonly dry. An intermittent stream flows through the canyon toward the west for approximately 5 miles before entering a reservoir behind Carbon Canyon Dam. Rainfall runoff from the northern portion of the Facility (covering approximately 20% of the Facility) drains toward the northeast into an unnamed canyon. An ephemeral creek within this unnamed canyon flows northeast for approximately 4 miles where it drains into Lake Los Serranos, a privately owned lake used for runoff control. Overflow from Lake Los Serranos flows another 2 miles where it drains into the Prado Dam Flood Control Basin.”

The report does not make clear that the water draining into Soquel Canyon, seen here at [http://www.enviroreporter.com/images/OB-OD\\_aerial\\_POV-2.jpg](http://www.enviroreporter.com/images/OB-OD_aerial_POV-2.jpg), makes its way to the Santa Ana River, as this figure shows:  
[http://www.enviroreporter.com/images/Carbon\\_Canyon\\_Dam\\_location.jpg](http://www.enviroreporter.com/images/Carbon_Canyon_Dam_location.jpg)

So does the water from the Prado Dam as this figure shows:  
[http://www.enviroreporter.com/images/Prado\\_dam\\_map.jpg](http://www.enviroreporter.com/images/Prado_dam_map.jpg)

On p.50/75 of this PDF, DTSC writes:

“All contamination exceeding cleanup levels will be removed such that the site-wide carcinogenic risk will be less than  $1 \times 10^{-6}$  and the site-wide hazard index for a child will be less than 1.0 for a future residential land use scenario.”

In the “Response to Comments for Corrective Measures - Part 2” on the Envirostor website, dated October 17, 2000 and available at [http://www.envirostor.dtsc.ca.gov/public/hwmp\\_community\\_involvement/8276075065/Part%202.pdf](http://www.envirostor.dtsc.ca.gov/public/hwmp_community_involvement/8276075065/Part%202.pdf), says on page 10 of the 152-page PDF:

“Aerojet shall be required to submit data documenting the existing levels of uranium at the facility, and to conduct sampling of surface water and groundwater at the Facility for uranium. This requirement is being added to ensure that existing levels of uranium are protective of human health and the environment for a future residential land use scenario.”

*Does DTSC and Aerojet realize that the above-cited uranium levels, in Tables 5 and 6, for surface and subsurface waters are too high to fulfill the levels needed for unrestricted residential land use, especially when vast parts of the site, and the OB/OD in particular, have not been fully characterized for depleted uranium contamination, heavy metals, chemicals, and volatile organic compounds in the soil, surface and subsurface waters?*

*Does DTSC and Aerojet realize that “water” that flows offsite into Soquel Canyon Creek, and north into Chino Creek on its way to the Prado Dam, is regulated by the Clean*

*Water Act, the Porter-Cologne Act and a host of other strict state and regional rules, regulations and laws?*

*Could DTSC please explain how it could miss these high reading of uranium in the surface and subsurface water when it has already stated repeatedly that its goal is to release the site for unrestricted use including a residential land use scenario?*

## **LAWS APPLICABLE TO OFFSITE MIGRATION OF AEROJET WATER**

According to Santa Ana Regional Water Quality Control Board (SARWQCB), the drainage off of Aerojet Chino Hills is in their jurisdiction as this map shows:

[http://www.waterboards.ca.gov/santaana/about\\_us/full\\_screen\\_map\\_2.shtml](http://www.waterboards.ca.gov/santaana/about_us/full_screen_map_2.shtml)

“Carbon Canyon Creek” and “Chino Hills” are noted on this map.

Available at

[http://www.waterboards.ca.gov/santaana/water\\_issues/programs/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml)

is the Santa Ana River Basin Plan.

We downloaded this SARWQCB plan in a ZIP folder and opened it. It has 7 chapters which are excerpted here that are directly applicable to the water leaving the Aerojet Chino Hills site, including the OB/OD area. We include selected excerpts printed in green and highlighted it:

### **Chapter 2:**

P. 2/5 (3-2)

The SWRCB [sic] policy requires the continued maintenance of existing high quality waters unless there is a demonstration that: (1) allowing some degradation is consistent with the maximum benefit to the people of the state; and (2) that such degradation would not unreasonably affect existing or potential beneficial use.

### **Chapter 3:**

P. 18/42 (3-18)

An “I” in Table 3-1 indicates that the water body has an intermittent beneficial use. This may occur because water conditions do not allow the beneficial use to exist year-round. The most common example of this is an ephemeral stream. Ephemeral streams in this region include, at one extreme, those which flow only while it is raining or for a short time afterward, and at the other extreme, established streams which flow through part of the year but also dry up for part of the year. While such ephemeral streams are flowing, beneficial uses are made of the water. Because such uses depend on the presence of water, they are intermittent. Waste discharges which could impair intermittent beneficial uses, whether they are made while those uses exist or not, are not permitted.

P. 23/42 (3-23)

**Carbon Canyon Creek, Hydrologic Unit #845.63, designations:**

MUN: Municipal and Domestic Supply (MUN) waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.

GWR: Groundwater Recharge (GWR) waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.

REC1: Water Contact Recreation (REC 1\*) waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.

REC2: Non-contact Water Recreation (REC 2\*) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting sightseeing and aesthetic enjoyment in conjunction with the above activities.

WARM: Warm Freshwater Habitat (WARM) waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.

WILD: Wildlife Habitat (WILD) waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

RARE: Rare, Threatened or Endangered Species (RARE) waters support the habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened or endangered.

#### **Chapter 4:**

Pages 1/55 (4-1)

### **WATER QUALITY OBJECTIVES INTRODUCTION**

The Porter-Cologne Act defines water quality objectives as “...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” (§13050 (h)). Further, the Act directs (§13241) that:

“Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses as the prevention of nuisance; however, it is recognized that it may be possible for the quality of

water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

- (a) Past, present, and probable future beneficial uses of water.
- (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
- (d) Economic considerations.
- (e) The need for developing housing within the region.
- (f) The need to develop and use recycled water.”

P. 5/55 (4-5)

**Radioactivity**

*Radioactive materials shall not be present in the bay or estuarine waters of the region in concentrations which are deleterious to human, plant or animal life.*

P. 6/55 (4-6)

**Toxic Substances**

*Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to level which are harmful to human health.*

*The concentrations of toxic substances in the water column, sediments or biota shall not adversely affect beneficial uses.*

P. 15/55 (4-15)

**Radioactivity**

*Radioactivity materials shall not be present in the waters of the region in concentrations which are deleterious to human, plant or animal life. Waters designated **MUN** shall meet the limits specified in the California Code of Regulations, Title 22, and listed here:*

*Combined Radium-226 and Radium-228 5 pCi/L*

*Gross Alpha particle activity 15 pCi/L*

*Tritium 20,000 pCi/L*

*Strontium-90 8 pCi/L*

*Gross Beta particle activity 50 pCi/L*

*Uranium 20 pCi/L*

Pages 20-21/55 (4-20 & 4-21)

**Metals**

Metals can be toxic to human and animal life.

*Metals concentrations shall not exceed the values listed below in groundwaters designated **MUN** as a result of controllable water quality factors.*

*Metal Concentration (mg/L)*

*Cadmium 0.01*

*Chromium 0.05*

*Cobalt 0.2*

*Copper 1.0*

*Iron 0.3*

*Lead 0.05*

*Manganese 0.05*

*Mercury 0.002*

*Selenium 0.01*

*Silver 0.05*

[END OF SNIPPETS]

DTSC is charged with protecting the public health from toxins and making polluters obey the rules and regulations just like the rest of the public. The SARWQCB's charge is to protect the waters that feed the Santa Ana River.

*Has DTSC or Aerojet contacted the SARWQCB or State RWQCB about polluted surface and subsurface water at the site? If so, what is the extent of that contact and what was the result(s)? Is DTSC aware of any NYPDES [National Pollution Discharge Elimination System] monitoring done at the Aerojet Chino Hills site as a result of these contacts?*

*Is DTSC and/or Aerojet aware that less than 5 miles from the site is Carbon Canyon Regional Park where people fish for, and eat, channel catfish, bass, blue gill and carp in a 4-acre lake intermittently fed by Carbon Canyon Creek? If not, does the amount of uranium, and other toxic compounds leaving the site via surface water, make DTSC and/or Aerojet consider testing this small lake just downstream of where 80% of Aerojet Chino Hills' effluent flows?*

#### **\* FUTURE LAND USE RESTRICTIONS**

Radon is a daughter product of uranium and is known to cause a variety of ailments, including lung cancer.

*Considering that the amount of residual uranium/depleted uranium that is left in the OB/OD soils, IF DTSC signs off on unrestricted land use for residential development, will the department require that Aerojet and/or any subsequent landowner or developer monitor for radon in the basements of any dwellings built on the OB/OD area of Aerojet?*

[ADDITIONAL QUESTION ADDED May 3, 2009]

DTSC stated in its announcement of the March 2009 meeting that “DTSC’s main objective for cleanup is protection of human health, the environment and public safety. Before the current land use can change, DTSC will assess whether the clean up is successful and the property is safe to be used for its intended purposes.”

*Should DTSC release the land for the “intended purpose” of residential housing, will it have, as a condition of release, that any groundwater under the site, or rain water collected at the site, not be used for potable and non-potable uses at the site?*

*Should DTSC release the land for the “intended purpose” of residential housing, will it have, as a condition of release, that the soil, surface water and groundwater, be sampled and tested under the OB/OD, and the entire Aerojet Chino Hills property, for contaminants including, but not limited to, DU, heavy metals, chemicals, RDX, HMX, VOC’s and dioxins? If not, why not.*

[END OF COMMENTS/QUESTIONS FOR 21% OF TOTAL OB/OD CLOSURE AND CLEANUP UPDATE MATERIAL]

Again, Denise Anne and I thank you for this opportunity to comment on some of this important material. We look forward to your responses to our comments and answers to our questions. We also look forward to being able to read the other 79% of the material which might best be posted on DTSC’s Envirostor website for the public to have access to it.

Thank you.

Michael Collins  
Denise Anne Duffield  
[EnviroReporter.com](http://EnviroReporter.com)