

EnviroReporter.com analysis of Runkle Canyon documents and tests

SUMMARY:

In an e-mail to Simi Valley resident Frank Serafine dated May 20, 2008, Norm Riley, Department of Toxic Substances Control (DTSC) Project Manager for the cleanup of the Santa Susana Field Laboratory (SSFL or Rocketdyne), wrote, "We understand there are concerns about contamination [in Runkle Canyon], but those have yet to be substantiated by scientific proof. We are continuing with our evaluation and will keep the public informed."

EnviroReporter.com and other citizens of Simi Valley (primarily the residents group "Radiation Rangers") respectfully disagree. Information has been generated by licensed laboratories that, while not comprehensive enough, should trip DTSC guidelines to precipitate further soil, surface water and subsurface water testing at the site.

For example, in the first analysis presented herein, "Rock with White Evaporate," heavy metal levels found at Runkle Canyon exceed the Department of Energy's own levels that call for further investigation.

The Rangers have always maintained that the developer's Environmental Impact Report (EIR) is inadequate and needs to be done over. After examining the 41 documents supplied by KB Home as well as the additional testing and information related to the site, *EnviroReporter.com* concurs.

Furthermore, there is evidence contained herein that the developers' and the city of Simi Valley's labs utilized inappropriate testing methodologies and either inadvertently or deliberately misinterpreted results or didn't test at all for certain contaminants.

This document looks at the data already generated on the site, data that DTSC has either not inspected, inspected closely, or has already dismissed out of hand even when the data is a result of DTSC's own lab results as was the case with the "rock with white evaporate" sample given to Riley by Serafine May 18, 2008.

This analysis covers material included, and not included, in KB Home's 41 documents given to the Department of Toxic Substances Control as part of the agreement the company and agency signed by DTSC's Norm Riley April 23, 2008. According to the agreement, a report on these documents is/was due 75 days after the signing of the agreement which would be July 7, 2008. Those documents are analyzed under a separate document entitled "KB Home 41 document analysis."

EnviroReporter.com endeavored to submit this analysis to DTSC well before that deadline, as well as posting it on its website, however was delayed by analyzing the results of DTSC's laboratory testing of rock with white evaporate. DTSC's report on this evaporate contains lab testing results but no other analysis other than to characterize the material as a "salt evaporate" two weeks before the lab results were obtained. We feel that the delay is justified especially considering that our analysis of the white evaporate revealed regarding alarmingly high levels of chromium and other heavy metals.

This document contains information not provided to DTSC by KB Home, some of which is not analyzed by *EnviroReporter.com* because the information itself does not need our analysis or interpretation. Other material does include our analysis including various reports submitted by KB Home that overlap with the “KB Home 41 document analysis.”

This document/web page contains a summary that includes our focus and materials, the contents of the analysis with supporting documentation, and our conclusions.

EnviroReporter.com was not compensated by any person or entity for this work which took several weeks to complete and was submitted to DTSC on July 3, 2008 and posted on our website thereafter. It is our hope, however, that the department actually exercise due diligence inspecting these materials and not simply dismiss them as seems to be the case with the rock with white evaporate lab results which showed high heavy metal concentrations including chromium which was not further analyzed for valences.

Focus and materials

This investigation of Runkle Canyon pollution issues began in [2004](#) and is ongoing for several newspapers and *EnviroReporter.com*. Comprehensive analysis of a large number of known Runkle Canyon-related environmental documents is provided in order to further this investigation and to educate and inform our readers.

This examination will also provide assistance to California-EPA’s Department of Toxic Substances Control as they investigate Runkle Canyon, the first phase of which is analysis of written documentation provided to the department by the developer. These documents were provided DTSC by KB Home as part of their April 11, 2008 agreement that we reported on in our April 24, 2008 *Ventura County Reporter* article “[Reassessing Runkle](#).”

The agreement also states that DTSC will be examining the developer-related documents “as well as additional reports and appendices, tables and figures, correspondence, and other documents.” Our analysis falls into this later category.

EnviroReporter.com is also completing this ongoing work at the request of the Simi Valley citizens group, the Radiation Rangers, who have provided material assistance to us, in the form of photographic documentation, sample collection and lab analysis. The Rangers have requested that this analysis be included in DTSC’s documents investigation as part of their public comment in this process.

This document examines environmental data, much in the form of [41 reports](#), provided to DTSC by the developers, KB Home. We address those documents as well as those not included in the KB Home portfolio including the Radiation Rangers May 18, 2007 Pat-Chem report that focused on heavy metals that the developer’s Environmental Impact Report failed to test. We examine the subsequent July 2, 2007 City of Simi Valley Tetra Tech report which also found higher levels of some heavy metals than the Rangers’ test and additional ones of concern. We also include studies and data relevant to Runkle Canyon that are not included in the aforementioned material.

Contents

March 2008: [Rock with White Evaporate](#) -- Material collected in Runkle Canyon by the Radiation Rangers and tested by DTSC. *EnviroReporter.com* [article](#), [analysis](#) and [photographs](#) are included in our investigation of this disturbing phenomena.

January 10, 2008: Southwick receives [Environmental Inc's laboratory techniques](#) for detecting strontium-90. The techniques are from 1967 by a federal agency that is no longer in existence.

January 10, 2008: Simi Valley's assistant city manager Laura Behjan sends a [letter explaining Dade Moeller's activities](#) and confirming that the outdated [Environmental Inc. laboratory techniques](#) were the same ones that had been used to test the Runkle Canyon soil samples.

January 7, 2008: Radiation Ranger Rev. John Southwick questions how both Dade Moeller and the city's lab, Environmental Inc. Midwest Laboratory, could have come up with such low results for strontium-90 in Runkle's soil.

[Southwick demands explanation of suspect strontium-90 readings.](#)

December 27, 2007: Simi Valley's Laura Behjan sends Southwick the [Environmental Inc. report](#) on the ten "split samples" that the city took to cross check Dade Moeller's results. They also read only a quarter of typical background.

December 18, 2007: [Dade Moeller radiological report](#) on 63 soil samples from Runkle Canyon tested for strontium-90. Test results are so low that they average a quarter of normal background for strontium-90 in area.

December 14, 2007: [MWH "Offsite Data Evaluation Report](#) - Santa Susana Field Laboratory - Ventura County, California" for Boeing, Department of Energy (DOE), and NASA shows trichloroethylene (TCE) found in ten percent of Runkle Canyon groundwater samples taken. Report claims, however, no sampling in Runkle Canyon had taken place.

October 30, 2007: Larry Walker Associates' [Tetra Tech analysis for Simi Valley](#) deems Runkle Canyon safe. "None of the surface waters in the Simi Valley area," the analysis says, "are designated as having a [Municipal and Domestic Supply] beneficial use. Therefore, the State drinking water standards do not apply to Runkle Canyon or downstream surface waters."

However, the very Tetra Tech report it was supposed to analyze says "Potential human consumption of surface water is reasonably possible under the Municipal and Domestic Supply, Water Contact Recreation, and Non-contact Water Recreation beneficial use scenarios. In these types of situations, water quality criteria, such as the MCLs, PRGs, PHGs, and NLs, may be used as screening values to determine whether further evaluation of surface water may need to be considered."

September 20, 2007: [Simi Valley letter to Larry Walker Associates](#) asks for "expert opinion" on its Tetra Tech report. "Do the test results indicate that contact with the water and/or soil presents

a risk to the public," the letter asks. "Is there any action the City is obligated to take (e.g., reporting to regulatory agencies) in view of the test results [?]"

August 23, 2007: *Ventura County Reporter* article "[Spin Cycle](#)" shows how city's testing revealed higher levels of heavy metal pollution. "[A]rsenic found in one soil sample, about a quarter of what was detected by the Rangers," the article says. "[E]ven the lower reading was more than 20 times the federal Environmental Protection Agency's "preliminary remediation goal" (PRG) for arsenic in residential soil."

The reading for arsenic, which causes bladder and lung cancers as well as diabetes, developmental problems, gastrointestinal illness and heart disease, was 25 percent higher. That translates to 26,478 times tap water's PRG and 47,000 times California's "public health goal" for the toxin in drinking water.

[snip]

Another regulated heavy metal found by the Rangers in Runkle Canyon water, barium, was detected at levels 233 percent higher than the citizens' sampling. Nickel came in 33 percent higher and vanadium 55 percent more elevated than the earlier tests. That is 2.8 times the "notification level" which are "health-based advisory levels for chemicals in drinking water ... when a chemical is found in or threatens drinking water sources," according to California's Office of Environmental Health Hazard Assessment.

[snip]

Chromium ...was detected at 20 percent higher than the state's "maximum contaminant level" (MCL) for tap water. Cadmium was found at nearly three times more than the PRG for tap water and 700 times the public health goal... Lead was also discovered in the city's water samples with the highest reading 33 percent higher than the state's MCL for the metal.

August 20, 2007: [EnviroReporter.com's Tetra Tech report analysis](#) highlights important passages of reports and its mistakes.

August 14, 2007: The city of [Simi Valley's Tetra Tech report](#) gives contradictory signals on the safety of Runkle Canyon. While getting many key facts wrong, the 88-page document recommends further and more expansive testing. (Note: the Tetra Tech report is 22 MB and takes a few minutes to load.)

July 26, 2007: The Radiation Rangers' website StopRunkledyne.com's "[Runkledyne Arsenic](#)" analysis which shows that Pat-Chem's arsenic result is many times over Rocketdyne's arithmetic mean and should warrant "further investigation" according to Boeing's lab.

June 21, 2007: Analysis of Pat-Chem report by *EnviroReporter.com* included in *Los Angeles CityBeat* cover story "[The Radiation Rangers](#)":

Surface water readings for arsenic are 15 times the MCL for drinking water, over 21,000 times the EPA's "preliminary remediation goal" and 37,500 times the agency's "public health goal" for potable water.

The mud sample was laced with arsenic as well, coming in at over 548 times the EPA's preliminary remediation goal for the contaminant in soil. That amount of the toxin is also 213 percent of the Department of Toxic Substances Control (DTSC) arsenic "field action level," where further investigation is warranted.

Nickel was over 12 times the EPA's public health goal in water and vanadium came in at 1.8 times the notification level which is a threshold at which the most local government entity should be informed.

June 11, 2007: "[Brandeis-Bardin Institute Strontium-90 readings](#)" data sent in requested letter to city of Simi Valley by Michael Collins regarding California Department of Health Services (CDHS) contention that here was only one elevated Sr-90 reading detected at the institute that is between Runkle Canyon and Rocketdyne's Area IV where nuclear work was done from the 1950s until 1988. "Our analysis shows that there are at least 25 soil samples with elevated Sr-90 readings," the letter reads before going on to prove it.

May 30, 2007: [Entire Pat-Chem report performed for the Radiation Rangers](#), including the [pertinent two pages](#).

April 10, 2007: [California Department of Health Services' review and response](#) to Southwick and Serafine's questions about the soil testing which CDHS says "were limited in scope" therefore did not need a report to substantiate their findings. CDHS says that the default EPA residential soil PRG ("preliminary remediation goal") in Runkle Canyon is nearly 4.85 times higher.

February 28, 2007: Rev. John Southwick and Frank Serafine, both Radiation Rangers, "[Questions for the California Department of Health Services](#)," regarding their June 7, 2005 visit to Runkle Canyon where it participated in lab Dade Moeller's sampling of five soil specimens for strontium-90 contamination.

December 2006: [EnviroReporter.com's brief analysis of the Runkle Canyon EIR](#), or Environmental Impact Report.

December 2006: "[Radioactive Contamination at Runkle Ranch from the Santa Susana Field Laboratory](#)," by Daniel Hirsch, Committee to Bridge the Gap contends that strontium-90 in Runkle is from SSFL.

October 2006: "[Land-use conversion and its potential impact on stream/aquifer hydraulics and perchlorate distribution in Simi Valley, California](#)," By M. Ali Tabidian, Ph.D. Prepared under contract to the Santa Susana Field Laboratory Advisory Panel. The work of the panel was conducted under contract to the California Environmental Agency.

January 19, 2006: In response to a request of Simi Valley Council Member Barbra Williamson, [EnviroReporter.com](#) creates an [annotated version of "Neighborhood Threat"](#) which was the [original exposé](#) that broke this story in *Los Angeles CityBeat/ValleyBeat* on March 10, 2005.

This includes [excerpts of the February 5, 1999 QST Environmental report](#) that indicates high strontium-90 and that “it would appear that there may have been some impact of radionuclides to the site from the Rocketdyne facility.”

The annotated article also details the October 25, 1999 report Foster Wheeler Environmental with excerpts from “[Final Report - Runkle Ranch Site Investigation](#) - Simi Valley, CA.” which show high strontium-90 soil readings across the property with the highest one, and the one closest to Rocketdyne’s former nuclear testing Area IV was 411 times background of 0.030 pCi/g.

Also sourced were parts of the [September 17, 2003 Miller Brooks report](#) that the city of Simi Valley used for the Runkle Canyon EIR that was consisted of just six soil samples which were sent to a lab that had instruments too insensitive to be of any use, as even the CDHS later admitted. The report also mysteriously calculated a very low number of fatalities based on strontium-90 exposure not attributed to any method, let alone one approved by the EPA.

January 19, 2006: “[Hot Property](#)” annotated article by Michael Collins that explores and questions the five soil samples taken at the Runkle Canyon property on June 7, 2005 by California Department of Health Services with split samples tested by lab Dade Moeller. [CDHS samples test 2-19 times lower than Dade Moeller’s](#). Collins shows that the EPA strontium-90 background of [0.052 picocuries per gram](#) of soil (pCi/g) is actually lower and [averages 0.030 pCi/g](#).

January 2006: *EnviroReporter.com*’s conservative [112-ton dust estimate caused by construction](#) of Runkle Canyon is mathematically delineated.

March 10, 2005: *Los Angeles CityBeat/ValleyBeat* cover story, “[Neighborhood Threat](#)”:

In December 1998, when GreenPark began its environmental investigation of the property, the developer hired Phoenix-based QST Environmental to do preliminary soil sampling of the canyon to see if the former Rocketdyne lab “had impacted on-site soils, based on surface run-off carrying radionuclides to the site.” The results “indicated the presence of Strontium in all samples collected ... that exceeded the EPA average local background concentration.” Indeed, the four soil samples contained up to 17 times the amount of the radionuclide that the EPA says is naturally occurring in the area. “Based on the analytical results of the soil samples, it would appear that there may have been some impact of radionuclides to the site from the Rocketdyne facility,” the report said.

[snip]

Foster Wheeler’s 58 soil samples averaged 1.39 pCi/g, or six times the EPA’s preliminary remediation goal and nearly 27 times above the typical EPA background level for Sr-90 in the area. The hottest sampling spot, and the one closest to Rocketdyne’s Santa Susana Field Laboratory, measured 12.34 pCi/g, which is over 54 times the EPA’s PRG and 237 times the normal background for the radionuclide.

April 26, 2004: “Text of [Patricia Coryell Remarks to the Simi Valley City Council](#).” Radiation Ranger Coryell shows that residents questioned Runkle Canyon’s Environmental Impact Report

before it was approved over concerns about adjacent Rocketdyne. And those sentiments have continued as the “Text of [Patricia Coryell Remarks before the Ventura Board of Supervisors](#)” on July 17, 2007 show.

May 21, 2003: “[Report for Asphaltic Material and Surface Water Sampling Program on the 550-Acre Parcel within the Runkle Canyon Property Located South of Simi Valley, in Ventura County, California.](#)”

Excerpt from previous Runkle Canyon developer’s sampling for heavy metals showing only Title 22 heavy metals tested for were from a pool on top of asphalt and not in the creek adjacent.

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Conclusions

The information analyzed in this document demonstrates that the developer’s Environmental Impact Report, approved in 2004 and previously reported on extensively by *EnviroReporter.com*, shows abnormally high strontium-90 soils readings. A retesting of Sr-90 in the soil by the developer last year came in over 100 times less than previously and averaged less than a quarter of the area’s normal background for the substance. The Rangers questioned these results and pointed out that the city of Simi Valley’s split samples, which yielded the same results, was in fact an outdated testing [technique from 1967](#) and therefore unreliable.

- The Rangers maintain that a new EIR must be performed with the soil again retested under the supervision of DTSC with samples tested at DTSC’s laboratory to ensure accuracy utilizing current testing methodology. *EnviroReporter.com* concurs.
- The KB Home-provided documents show that the developer did not test for heavy metals in Runkle Canyon’s soil or water other than on a small patch of asphalt. Not included in the documents, but provided herein, are the results of limited tests for heavy metals conducted by the [Rangers](#) and the city of [Simi Valley](#) which show high levels of arsenic, nickel, vanadium, cadmium, chromium and lead. Water running down Runkle Canyon ends up in the Arroyo Simi watershed which currently supplies 20% of Simi Valley’s blended tap water.
- The Rangers maintain that more extensive tests of Runkle Canyon’s soil and surface water for heavy metals is necessary to assess the potential threat to human, animal and plant life. The city’s lab also recommends additional testing for these heavy metals and to determine where they came from. *EnviroReporter.com* concurs with the recommendation that the in-situ sampling be under the supervision of DTSC and that DTSC provide lab analysis.
- Additionally, the Rangers recommend that the local water purveyor be told of the vanadium in the surface water which exceeds the Notification Level. They also suggest that the water purveyor inform its customers of this contaminant threat and how it deals with it before it reaches the consumer. *EnviroReporter.com* agrees that the law be followed in this matter but has no position otherwise.

- The Santa Susana Field Laboratory's former nuclear testing Area IV borders Runkle Canyon and has 11-acre drainage into it. On December 13, 2007, lab owner Boeing submitted an [Offsite Data Evaluation Report for the Santa Susana Field Laboratory](#) to DTSC that includes evidence that toxic trichloroethylene (TCE) had been detected in Runkle Canyon groundwater.
- However, the report says that "Runkle Canyon and the SSFL do not share a common property boundary," when maps in the document show that it clearly does. The document goes on to say "No environmental investigations have been performed by Boeing, NASA, or DOE on the Runkle Canyon property" when the map showing the TCE hits in Runkle groundwater is on page 184. Perhaps ironically, the last page of this report combines the two falsehoods, showing the groundwater sampling spot on Runkle Canyon and the common Rocketdyne border and says, in conclusion, "Offsite sampling sufficient with no data gaps."
- The Rangers recommend that DTSC investigate these discrepancies and also determine whether Runkle Canyon's contamination is result of lab off-site migration. They also recommend that if DTSC determines that radiological and/or chemical pollution found in the canyon, using as sources all the reports cited in *EnviroReporter.com*'s analysis and further testing as the department decides and orders, that Boeing pay for any past and/or additional sampling, lab analysis and any short-term, medium-term and long-term remediation. *EnviroReporter.com* concurs with the recommendation to determine if the lab is the source of the radiological and/or chemical contamination in Runkle Canyon.
- On March 27, 2008, Rangers Frank Serafine and Rev. John Southwick espied extensive white evaporate on an area where it had not previously been seen since the last time they had visited the area, which was before the winter rains. Nothing was growing where this unusual distribution of white evaporate/precipitate occurred. The two men gathered some of this material and gave it to DTSC's Norm Riley at that evening's quarterly Santa Susana Field Laboratory Workgroup meeting. DTSC tested this material and shared the results with the Rangers who then imparted them to *EnviroReporter.com* for analysis.
- Abnormally [high amounts of chromium, iron, molybdenum, nickel and potassium](#) were found in the white precipitate. The chromium registers over 20 times the Department of Energy's Preliminary Action Levels for "industrial" zones, of which Runkle Canyon is not, over 6 times EPA Region 9's Preliminary Remediation Goal for the metal, and over 35 times the average amount of total chromium found throughout SSFL's soil.
- The Rangers recommend that DTSC retest this white material to determine the valence ratio of trivalent and hexavalent chromium. They also recommend that the material be tested for other possible contaminants and that DTSC try to "fingerprint" the source of such material. *EnviroReporter.com* concurs and further recommends that corrective action and remediation take place if the material is found to contain dangerous amounts of hexavalent chromium and, if it does, direct that KB Home and the city of Simi Valley immediately post warning signs by the contamination as well as on the perimeter of the

Runkle Canyon property. *EnviroReporter.com* also recommends that DTSC investigate the substrata hydrogeologic conditions that may have transported this material off of SSFL and resulted in this phenomenon.

- The Tetra Tech report notes that the July 2, 2007 city of Simi Valley sampling yield surface water vanadium readings up to 9.33 times the OEHHA's Notification Limit (NL) for vanadium and 2.8 times the CDHS vanadium NL. The average reading of these four samples is 0.102 which is 6.8 times the OEHHA NL for vanadium and double the CDHS vanadium NL. Geocon itself collected a surface water sample that contained the highest amount of vanadium sampled in Runkle Canyon to date: 0.17 mg/kg. The Geocon vanadium result is 12.67 times OEHHA's NL and 3.4 times the CDHS vanadium NL. The Radiation Rangers request that the local water purveyor be informed of these facts so it can inform its customers of the presence of vanadium in a source for their drinking water and what the local water purveyor is doing about it. *EnviroReporter.com* concurs.
- A reading of 330 parts per billion of perchlorate was detected in Runkle Canyon's groundwater, five times higher than any detection there before. The Rangers request that wells MW-1 and MW-2 be reactivated in order to further test the groundwater. *EnviroReporter.com* concurs.
- There has been benzene in a tarry material found in Runkle Canyon that is nearly 55 times its PRG for residential soil, the limit of which is 0.62 mg/kg and that, according to the EPA's 2004 PRG list for contaminants, exceeds the chronic, 100% chance of contracting a cancer from this substance which is 33 k/g/mg. The Rangers agree with the developer's lab that the substance should be removed and deposited in a proper dump.
- Test results of Polynuclear Aromatic Hydrocarbons include a result of 24.3 mg/kg for benzo(a)anthracene which is 39.19 times its PRG of 0.62 mg/kg. The Rangers and *EnviroReporter.com* recommend further investigation of this contamination.