

---

23350 Lake Manor Drive, Chatsworth, CA 91311

May 14<sup>th</sup>, 2009

RE: RCRA Group 5 SSFL  
Comments for Santa Susana  
Field Laboratory Areas III and  
IV as defined within the RCRA  
group guidelines

Ms. Laura Rainey  
Senior Engineering Geologist  
Department of Toxic Substance Control  
5796 Corporate Avenue  
Cypress, CA 90630

Dear Laura,

First we wanted to say how much we appreciate the technical meeting to help us review these group submittals on a more detailed level so that our comments and concerns can be of a higher quality, leading hopefully, to more productive and effective clean-up actions. In reviewing this group submittal which encompasses most of Area IV and part of Area III, with over 70,000 documents and a million pages of reference material included in the report, we find that this group is too large to be able to properly review in the time allowed. Each of these facilities had significant history and therefore significant documentation from historical operations. Because of the massive nature of the report, we believe you will likely receive far fewer substantive comments from the public review process. We ask that it be considered to divide Group 5 into 5-North and 5-South to be able to better accomplish the necessary work involved in critical technical review of these documents, and provide additional time.

After meeting with DTSC and Boeing to discuss our concerns on the building documentation logs that were done for STL IV and other areas, it became even more apparent that we need to understand the operational use of the buildings within the context of the field-work that still lies ahead. Key decision points are made based on the information provided in these reports and the research that goes into building the reports. It is crucial that each piece, be able to stand on its' own, as a useful and usable reference tool that will provide the needed information to the reader.

When we review the sampling, done so far for Group 5 (and this is consistent with our prior concerns since our involvement at the site) it is seriously deficient. It simply does NOT seem as if the sampling will find the contamination that might be present because of what we view as inadequate characterization and delineation of the areas of concern. By excluding areas that are important to the operational history, and those that connect the dots between the various facilities, important

and relevant information is potentially excluded from that decision-making process.

The purpose of the Building Feature Documentation log as certainly changed since the initial intent, and it is appreciated that the suggestions we made, in order to make these reports more complete and useful to the field people that may be using them during the subsequent sampling and remedial phases of the RCRA Facility Investigation process are being heard and considered.

**Building Feature Documentation Logs - purpose:**

- ❖ Understanding the sink traps, drainages, pipes and sewage systems are crucial to understanding where the footprint of impact will be delineated.
- ❖ Having the context of the surrounding facility features as we discussed and will be included on all future reports to better document the remaining features so that the most complete picture of operational use is understood.
- ❖ We have included some of our aerial photos of the site that enhance the understanding of effluent drainage and pipes as well as operational use areas. We feel that some basic features need to be provided in the field so that the Sampling Analysis Plan is based on likely release areas and how they may have moved in the environment since that initial release.
  - Where was the door?
  - Was there a high-bay area? Crane?
  - Where did people park?
  - Where were decontamination efforts implemented? i.e. for workers as well as the decontamination or cleaning of materials or equipment
  - Where did they store the more/most hazardous materials that were used at the facility?
  - How did those materials arrive (liquid form? Solid? By Truck, loading/unloading process? container type used?)
  - Who was the subcontractor used for waste disposal?
  - How often did they come?
  - What was the process? How were things handled?

**Additional detailed comments on the building feature documentation log**

In order to demonstrate the need for these corrections and contextual feature additions to the existing maps. We also look forward to discussing further the use of words such as “intact,” “removed,” and how those will be used in the decision making process to determine the necessity for additional sampling. By having a reference notation that provides brief prior sampling data, it will better be able to justify some of the decisions being made to NOT sample these areas further.

As we continue to read through the details of this report which is much too large in its’ scope and should be sub-divided in to several areas because of the multitude of complex facilities, some of which were already removed but without EPA oversight, and others remaining today, but inadequately describe their prior uses, we notice discrepancies. Instead of listing the few areas designated as “CMS” and then declaring the balance of the inclusive areas NFA by default. On the contrary, we should be looking at each key-decision point for NFA where the bases of these decisions are described in detail. We note that Buildings 4462/4463 (the largest sodium pump test loop in the world) and Building 55 which is a nuclear materials building where uranium scrap metal pellet

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

recycling program among other things, went on, are not even located within the boundary of the DOE LF3 designation as noted on Figure 4-2<sup>1</sup>. Not only are they not included in the CMS areas, they are barely acknowledged in the form of sampling, and the related pond is not even indicated on the map despite its obvious existence.



We would like to emphasize that we feel that all significant operational areas should be clearly described and investigated, as well as clearly shown on all reference materials as belonging to the designated areas they belong to.

**Our concern about the exclusion of existing facilities to the delineated RFI Site Boundaries is emphasized by the statement made in Appendix U where Sampling protocols are discussed:**

## U.5 Sampling Results

All sampling location with the exception of debris locations 1001, 3007, and 3009 were contained within the investigation boundaries of one of the 17 RFI sites. The results of current and historic surveys within RFI site investigation boundaries, are presented in the appropriate site reports (Appendices D through T where applicable). Since debris locations 1001, 3007, and 3009 lie outside of site investigative boundaries, the dateable results are presented in this section and in Table 5-1.

This clearly indicates that review of areas outside of these boundary lines will be handled differently and without the same level of priority.

This separates the data from these facilities from that of the others that are considered “RFI Sites” when all operational areas within the Santa Susana Field Laboratory boundaries, as well as related drainages as needed, are to be investigated. We see this throughout the report where existing and important buildings are excluded from the RFI Site boundaries, such as Buildings 55, 462, 463, 100, 6, etc.

---

<sup>1</sup> Santa Susana Field Laboratory, VOCs Summary for Soil and Groundwater, Group 5 Reporting Area, CH2MHill, Figure 4-2, October 29, 2008.

**Our comments will be grouped by RFI site, as much as possible:**

We are very concerned about the many areas that are being recommended for No Further Action (NFA) and are pleased that DTSC does not concur with this decision and will require more work. Much more, we hope. In looking a little deeper into the CMS areas versus those, designated for No Further Action (NFA) I came to understand the area division had some issues:

Additional comments on these areas are further detailed below:

- **DOE LF 1** - which is designated for NFA, shows detects exceeding both background and the ECO RBSL for metals. Firstly, this does not consider SB990 standards, which need to be applied to “where we look.” This is significant as the decision for further characterization is being made based on the findings to date. This makes looking in all the right places, even more important. There should be no detections along the outer limitations of the CMS area delineation, since the idea is to “step out” from the detections to “clean.” This is also an important example where a building feature log (that includes former buildings) is necessary to developing a comprehensive Sampling and Analysis Plan (SAP). Currently, there are concrete slabs remaining, as well as, swales and culvers that would more accurately show where contaminants might likely be present.

We have many photographs of this area depicting the remaining slabs and pipe systems throughout the former facility. With the pipes remaining, it would be recommended that a proper building feature log be created for this area prior to any further demolition or removal of concrete or remaining piping. Considering the extensive communications wiring that was used at this facility, we believe the further research is necessary to determine possible COPCs that may not be identified as yet.



It is problematic to define this area as the DOE LF1 when there were additional facilities that are excluded from consideration by use of this label.

This area includes building 4641 where shipping and receiving to Area IV took place. As indicated by the pink sampling points, there were contaminants found at levels above background as well as residential RBSLs and the delineation of the area shows that two of these sampling points are located on the northern-most edge of the defined area. These detections have not adequately been explained to be “un-important” or how their exclusion will affect the risk-assessment process and therefore should designate this area as eligible for the upcoming Feasibility Study phase of the characterization and clean-up of the site. SB990 Standards must be applied to the characterization process and here, we are seeing detections being ignored despite there being contamination present at levels exceeding those set forth in 990 as codified into State law.

- **DOE LF2** - is an area of several buildings involved in the PDU Coal Gasification that were demolished in the last five years or so (they appeared on Google Earth in our earlier shots taken) and show many elevated concentrations, all based on a screening level that is not as protective as SB990 standards, and again these areas are inappropriately labeled all part of a “leachfield” that diminishes their role in the contamination present at the site.
  - The fact that these areas have already been remove, and yet show elevated concentrations now, shows that further investigation is necessary to be sure the appropriate measures are applied.
  - The area may have also received flow from the RMHF prior to the piped tank replacing the pond area below. That may not have always been well defined.
  
- **PDU-1** delineation of the CMS area to be further examined for corrective measures is incorrect as it excludes the concrete storage and staging area that shows severe staining.
  
- **DOE LF3 - inappropriately groups several facilities together.** It is possible that this was done because of the sheer size of Group 5. Perhaps it would be more appropriate to split the group into two smaller groups so that proper attention can be given to the details of the many operational uses each of these areas has undergone over the years. Part of this area is where there was a former test-stand that was removed many years ago, but based on the very limited sampling shown on Figure 4-6<sup>2</sup>, there were many detects above the levels that, as defined here, are already not protective enough to meet SB990 standards, and here are don’t even appear to be willing to properly look in these areas.

#### **Other areas co-mingled with the DOE LF3 RFI Site:**

- **SPTF buildings 4462 and 4463** should be separately designated RFI sites, and should include

---

<sup>2</sup> Santa Susana Field Laboratory, Metals Summary for Soil and Groundwater, Group 5 Reporting Area, CH2MHill, Figure 4-6, October 29, 2008.

clear delineation of the included pond system and what sort of contaminants would be present, as well as the complex series of culverts and concrete swales that receive over-flow from this area, draining toward STL IV and away from Area IV.

- This area also includes elevated concentrations in remote locations (lower right of leach-field outline) that were either storage/disposal or destruction areas, or areas that may have received storm-water flow from other contaminated areas, such as the neighboring Building 55 or the Hot-Lab.

- **B4463:** Component Handling and Cleaning Facility (CHCF): used to assemble, disassemble, and clean pumps and other parts of the Sodium Pump Test Facility (SPTF).



Photograph - Building 4463



54

As we can see, this facility was used to clean things, which means washing off, and rinsing. Here we see a pond that is not even on the diagram in Group 5

The pond shown here, is not indicated in the SAP maps included in the Group 5 Report.



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



Please notice that Building 100 is incorrectly placed on top of buildings 463 and 462 and that the Building 56 landfill is placed on top of the hole or “excavation” area resulting in unclear information.

The pond area is not clearly marked in any of the maps and this was a burn/runoff pond that was clearly constructed for that specific purpose. Sampling needs to occur for all COCs in the pond area and the effluent drainage leading away.

It is noted that the area designated as a parking lot to support Building 100, is also indicated to be a leachfield for the building (Figure Q.1-1)

Very few samples taken at the actual SPTF facility, and the trench, while filled with detects, has not been recommended for further action. It is disturbing that these very significant areas are not within the delineated portion of the LF1 area. The continued confusion as to what Building 100 is vs. the Building 100 Trench RFI site, vs. the SPTF Buildings 462 and 463, must be clearly explained as well as the operational uses and relationships between these facilities.

- **Building 55 Nuclear Materials Building** is also not included within the RFI boundary despite the obvious need for investigation. According to the Building Feature Log, 4055-001, it states that this area included analytical chemistry and research for uranium plutonium scrap pellet recycling programs, fission research, mixed uranium-plutonium oxide pellets for irradiation tests, liquid metal fast breeder reactors, demonstration of reduced trans-uranic solid waste with the use of a molten salt combustor, and alpha emitting highly radio-toxic nuclear and radio-isotopic fuels. From this description, the facility is then described to be a “non nuclear” building and not part of the Corrective Measure Study (FS) Feasibility Study. This is

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

inappropriate and a basis for this exclusion must be provided to the public.

- Further review of the building feature documentation log includes item 4055-003 described as a sanitary waste conveyance. This is a janitorial sink where spills cleaned would include hazardous materials. This feature is also indicated that “sampling is not warranted” and associated chemicals is shown as “unknown.” This should in no way be taken to mean that no chemicals were likely discharged, but rather, that it would be a co-mingled set of COPCs due to the likely operations of a janitorial sink in this facility.
- Item features identified as “stain” (4055-008) are inappropriately designated to be sourced from an air-conditioning unit even though the stain is much larger and appears to come from several areas.

**B4055:** Nuclear Materials Development Facility (NMDF).

- Used to support Fast Flux Test Facility through analytical chemistry and research for uranium-plutonium scrap pellet recycling programs.
  - Conducted fission research on microscopic dispersion of tungsten in uranium-plutonium fuel.
  - Fabricated mixed uranium-plutonium oxide pellets for irradiation tests.
  - Participated in Advanced Fuel Systems Program for liquid metal fast breeder reactors.
  - Demonstration of reduced transuranic solid waste with the use of molten salt combustor.
  - Support for D&D and non-rad research.
- Based on the description of this building that still exists with activity today, storage of new crates, ever changing over the course of our observations of the site, it seems astonishing that it would be described as a non-nuclear building when the only non-nuclear activities that went on at this particular facility is the last on the list: “support for D&D”.
  - Based on the other descriptions of activities that went on at Building 55, the fabrication of plutonium from uranium involved an enrichment process, that also has other radionuclides that are created in the process of neutron bombardment.
  - The metals used for these “highly penetrating” pellets as described in the shooting range activities adjacent at the ESADA, should be looked for here.
  - The drainage and loading areas seem to be overlooked and should be examined with higher scrutiny for potential as migration pathways for contaminants. Please note the drainage culvert in the upper right corner of the photograph below, that leads stormwater toward STL IV.





- **Building 100 Trench/SPTF** Facility does not adequately acknowledge the pond system that includes a concrete lined pond and drainage system that must be properly identified and sampling must include these effluent areas as well as the surrounding soils as pipes may have leaked over the years. <sup>3</sup>
  - This area also does not adequately acknowledge the burn area that was used to dispose of waste and construction debris from potentially contaminated buildings.
  - Building feature log should be updated and/or completed, identifying all pipes, drainages, sink traps etc. prior to further demolition.
  - The trenching or excavating that is shown in Figure N.2-1<sup>4</sup> does not demonstrate adequate sampling or any sampling in many of the trenching examples. This is an area that has been incorrectly identified in almost every single report to date. It is not adequately known as to exactly where the burn operations vs. effluent drainage system of chemical and potential radioactive contaminants flowing to this area from the Building 100 area toward sampling location BHSV1001 and therefore, all trenching

---

<sup>3</sup> Santa Susana Field Laboratory, Site Location, Building 100 Trench RFI Site, Group 5 Reporting Area, CH2MHill, Figure N.1-1, November 3, 2008.

<sup>4</sup> Santa Susana Field Laboratory, Sampling locations, Building 100 Trench RFI Site, Group 5 Reporting Area, CH2MHill, Figure N.2-2, November 4, 2008.

should include sampling. Most of the nearby trenches show no sampling whatsoever, having been conducted.

- SPTF is separate from B100 Trench, which is also separate from Building 100 and these areas and how they inter-relate are not adequately explained or delineated. The SPTF Facility description describes two sodium fires and several “accidental” releases of metallic sodium, ethanol, oil, diesel fuel, among others. Very little sampling is shown, so we request an explanation as to why no sampling is “warranted” in the report pages describing this area.
- Building feature 4462-006 indicates it is a pipeline/other, and the operational use and associated chemicals are shown as “unknown” and yet no sampling is indicated as warranted. This is inappropriate since we have several release channels, which are not adequately investigated to determine that no sampling should be done, ESPECIALLY when this entire area is recommended for NFA. Additional examples of this decision process that seems inadequate as it does not seem to consider the stain itself as indicative of potential chemical presence (4463-003, 006, 009, 010, 011, 012, 013). These systems need to be clearly understood and sampled for all COPCs based on this operational history. Upon reviewing the entire building feature log for buildings 4462 and 4463, we are disappointed to find that still, the pond is not indicated or described anywhere.
- The northern and western hummocky areas as defined on Figure N.2-2 do not show sampling that would be commensurate with area of disturbed soils located directly adjacent to the Building 56 Landfill area, which also shows insufficient locations sampled.
- Buildings 463/463 Sodium Pump Test Facility (SPTF) is shown on these maps with inaccurate depiction of the related pond used historically as described by former workers as “burn runoff” and no samples are indicated, and even more surprising, the pond itself is not clearly marked on any of the related figures N.1-1, 2-2, 2-3 and many others. This area requires thorough study as sodium tests were also conducted in the parking areas adjacent to Building 100 and 462/463 facilities at various times.
- In previous reports such as the Technical Enforcement Report by SAIC 1994, it describes the trench and that buildings 462 and 463 were subsequently built atop this location. This is contrary to the information presented in this report and we ask that this be thoroughly investigated. The cross section “J” as indicated on figure N.2-3A<sup>5</sup> may not adequately describe the excavated and disturbed areas and further delineation is therefore necessary.
- Figure 1-5<sup>6</sup> of Volume 1 unnecessarily removes the features contained in each of the “RFI Site Boundaries” coupled with the fact that many of these areas have been relabeled as “LF1” diminishing the prior use and potential for contaminant transport and we ask that an accurate depiction of remaining buildings and other features be

---

<sup>5</sup> Santa Susana Field Laboratory, Cross Section Locations Z-Z, Building 100 Trench RFI Site, Group 5 Reporting Area, CH2MHill, Figure N.2-3A, November 4, 2008.

<sup>6</sup> Santa Susana Field Laboratory, Group 5 RFI Report Groupings, Group 5 Reporting Area, CH2MHill, Figure 1-5, October 30, 2008.

used on all of these reference figures.

- Building 100 drainage is where “outfall 7” was specifically located because of the contamination found there, and yet very little sampling has occurred there. In addition, the high elevations in metal concentration below the outfall, at the Building 56 Landfill area demonstrates very clearly the need for an additional outfall to be located there. This is also an area of special note in that exceedances of the residential levels are shown BEYOND the property boundary, making it “off-site contamination” that needs to be presented specifically to the City of Simi Valley, as well as to those members of DTSC involved in that review for the purpose of consideration in the Runkle Canyon issue.
- Pond Dredge area delineation must step out beyond those high concentrations found on all sides for a new area for CMS evaluation.

➤ **HMSA Building 4024**

This area is not designated for Corrective Measures Study and building features show the same lack of sampling, or thorough understanding of drains and where they lead. It is already known that there is a groundwater leak in the lower areas of this very complex facility that includes reactor core vaults. These issues are not adequately investigated and require further sampling to properly make these decisions.

- Building 4024 area inappropriately excludes adequate sampling for the buildings already removed from the area, and those need to be carefully documented prior to any further demolition. These exclude the three buildings shown to the left of 4024 shown as “HMSA-2” which also inadequately identifies these areas despite their radiological uses. In addition, despite high concentrations at 4024 (identified as HMSA-1) and a connection to groundwater at the vault level of these radiologically contaminated buildings, is also not recommended for further action – this is very disturbing.
  - Building features 4024-003, 004 and others show drains that are not adequately understood, that provided discharge and mobilization of chemicals and/or radionuclides. These need to be investigated thoroughly and there fore it is inappropriate to designate this area NFA.
- Available records indicate that perchlorate was previously used in Building 4358 and, as such, a surface soil sample was collected at this former building location (sample location U5BS1104). Perchlorate was not detected in this sample, and no further investigation is required.

<sup>7</sup> This decision is inappropriate since we have repeatedly asked about perchlorate use at the

---

<sup>7</sup> Santa Susana Field Laboratory, Metals in Organic Compounds, Group 5 Reporting Area, CH2Mhill, HMSA Appendix R R.3.4.2.5, page 30 of 119, October 29, 2008, HMSA Appendix R Page 30 of 119

SSFL outside of the known Happy Valley and Building 359 in Area 1. This statement indicates that there was use of perchlorate in Area IV and therefore should be sampled for at the HMSA facility and all related drainages. It was observed at the Delta groundwater treatment storage area that a significant amount of perchlorate-contaminated water was present. This was described as just being stored in this area of the site. We now renew this question and ask that all areas of perchlorate use be clearly provided for review.

There are no features at the HMSA Site that indicate surface water flows from the site, and due to the relatively flat topography and distance to defined drainage channels, it is not likely that impacted soil from the HMSA site has impacted downgradient sites via surface water transport. However, surface water that may flow to the west from the site would be transported downgradient along 20<sup>th</sup> Street toward the Compound A Facility Site and the R-2 Ponds. Surface water that may flow to the east from the site would be transported downgradient along 17<sup>th</sup> Street and into the 17<sup>th</sup> Street Drainage.

Groundwater impacts from the lower reactor vaults has been known for many years according to Boeing representatives on a site-tour, and none of these impacts appear to be adequately addressed in the report.<sup>8</sup>



The most disturbing of the “sampling warranted NO” features that we have reviewed, is 4024-005 which is described as “radioactive waste storage vaults” and because they are “intact” meaning still existing, they are recommended for no further sampling when there is no possible way to understand these to be intact without thorough investigation which has not yet taken place. To recommend these areas for NFA at this point is inappropriate.

- Building 4025 and surrounding storage was removed previously and needs further investigation here. These facilities are not adequately described as to their operational use and insufficient sampling has been taken. Further, cross-sections I, k, and l do not adequately characterize the subsurface issues within this area, though it does indicate extremely shallow groundwater levels which explain the constant leaching from the sub-surface basement vaults of these facilities. This needs to be further investigated so that all COPCs that may be

---

<sup>8</sup> Phil Rutherford indicated on a site-tour that the visible groundwater leak we observed in the lower reactor vault had been a continued problem all throughout his employment at the site, which we believe was indicated to be on the order of twenty years.

impacting the groundwater in this area are properly identified including mass-flux concentrations and delineation of these contaminants.

➤ **RIHL (Hot Lab)**

We have information from a former worker, that there were offices that ran the entire length of the lab on both sides, and those people were sitting with their backs to the radioactive vaults, doing completely different, non-nuclear jobs. Context here becomes very important and they did not understand the context of their desk and chair in relationship to the radioactive work that was being done in the same building.



Please note that only two samples are taken at the footprint of the RIHL building and NO sampling was done in the parking lot area immediately to the south of the building. This is where the nuclear material and waste was stored, yet it is ignored by the sampling plan.

Key Decision Points:

### **S.5.4 NFA Site Action Recommendations**

Based on a detailed review of all available historical documents, an evaluation of sample data collected at the site during previous investigations and the current RFI, including the results of human health and ecological risk assessments performed for the site, all areas of the RIHL Site except the CMS area identified in the previous section are appropriate for an NFA designation. For the areas recommended for NFA, the sections below summarize the historical uses, the sampling data collected, and the results of the HRA and ERA.

The presentation of the data makes it difficult to define which areas are the two areas recommended for CMS, and then, to declare the “remaining” areas NFA, leaving the reader to find each of the areas independently. This data is not intended to be read. We are reading it and we ask that each NFA decision be clearly stated, with its’ own justification, and not add them all together, referring to them simply as the remaining areas. This is a decision to do NOTHING MORE. That is what NFS means to the community and we feel it is absolutely unacceptable that these decisions are effectively buried in the language where point after point is read, and still no clear information about these decisions. This is not an acceptable approach to the clean-up of one of America’s only HotLabs where the surrounding communities took on the burden of potential radioactive contamination from nuclear facilities nationwide. This needs to be taken seriously and all areas must be actively investigated with a clear effort to FIND the likely contamination demonstrated. We do not see that here.

#### **S.2.1.1 Building 4020 (SWMU 7.7)**

Building 4020 was used for examination and preparation of irradiated nuclear reactor fuel and for decladding, cleaning, and repackaging fuel for reprocessing from 1959 through 1987. These activities included the disassembly and examination of irradiated nuclear assemblies from various nuclear reactors, decladding of irradiated plutonium-bearing fuels from offsite reactors, and remote handling of radioactive materials. The building contained four large radioactive-material-handling “hot cells.” Additionally, there was a machine shop at the northern end of Building 4020. The chemicals used in the machine shop were stored in drums outside on a concrete pad on the eastern side of the building. Additional information is in Tables S.2-1 through S.2-4.

The description of the RIHL facility does not adequately describe the fact that this facility received irradiated fuel from nuclear reactors across the country. Many accidents, spills, and fires occurred here, that are not adequately addressed or described here.

### S.5.4.1 Historical Uses

CH2M HILL performed a detailed review of all available historical documents, conducted site inspections, interviewed current and previous SSFL employees, and prepared comprehensive maps and tabulations of all information related to chemicals used, stored, or released at the RIHL Site. There are no records available to indicate that chemicals were used, stored, or released at locations outside the Chemical Use Areas identified during the review of historical records. Each of these Chemical Use Areas was subject to site investigation, and sample collection and analysis. In addition, a number of buildings and site features that had no record of historical chemical uses were investigated during the RFI. Consequently, all suspect areas of the RIHL Site were investigated and the findings presented and considered herein.

All historical photographs should be reviewed as part of making this determination. Based on the photographs we have submitted herein, it is clear that sloppy disposal and dumping practices went on throughout the history of the operational use of the site, and those photographs need to be considered evidentiary support to the conclusion that in fact, chemicals were used, stored and potentially released in areas OUTSIDE the chemical use designations used in this report.

Our concerns about the parking lot area not being adequately sampled, or even designated as an operational area is further demonstrated by this 1997 historical photograph:



In addition to the parking lot area being used for loading and unloading of hazardous radioactive waste, it was also used to store all the existing radioactive and other waste during the demolition process in 1997. This makes it even more important to sample for all COPCs as this area clearly requires more investigation.

Soil Disturbance Area as defined on Figure S.2-4 does not accurately depict the areas of soil disturbance as indicated above where the parking area is clearly disturbed.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

**Table S.2-2  
Tank Inventory  
Rockwell International Hot Lab RFI Site**

Tank ID	Location	Size (gallons)	Contents	Use Period	Use Status	Regulatory Closure Status	
<b>Aboveground Tanks</b>							
Unknown #1	East of Substation 4720	Unknown	Unknown	Unknown	Removed	Regulated under Corrective Action	No records of t could be found
Unknown #2	East of Substation 4720	Unknown	Unknown	Unknown	Removed	Regulated under Corrective Action	No records of t could be found
Unknown #3	East of Substation 4720	Unknown	Unknown	Unknown	Removed	Regulated under Corrective Action	No records of t could be found

Decisions of NFA that are based on unknown tanks of unknown contents, demonstrate the very obvious need for real sampling of ALL COPCs based on the records that exist. If it was a tank, it must be assumed that it potentially carried chemicals of some sort.

**Risk Assessment as described in Appendix S**

**Table S.4-3  
Human Health Risk Assessment Uncertainty Analysis  
Rockwell International Hot Laboratory RFI Site**

These determinations are based on too few samples taken, with too many assumptions based on a few non-detects that may not necessarily be representative of the potentially impacted area.

Petroleum hydrocarbons were not selected as COPCs since TPH-related constituents (BTEX and PAHs) were analyzed for.	Low	Realistic
---	-----	-----------

Assessment Element	Uncertainty	Magnitude of Impact	Direction of Impact
COPC Selection	Several inorganics were selected as a COPC since it could not be demonstrated to be consistent with background concentrations through the Wilcoxon Rank Sum test. For site data sets that are small, uncertainty is introduced into the comparisons.	Moderate	Conservative

Site data sets are too small to make these determinations regardless of statistical method, there are simply too many areas where little to no sampling has taken place despite operational use.

Exposure Pathways	Risks associated with drinking of groundwater are not realistic because the groundwater beneath the SSFL is not currently used as a drinking water source and the presence of the contamination will likely require a restriction on its future use as well.	High	Conservative
	Future land use of the site is currently undecided but may be recreational, which has lower risks than for urban residential. If land use is assumed agricultural, risk estimates may be higher.	Moderate	Uncertain

Land Use cannot be assumed at this time as existing agricultural ranches are located

Cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.



adjacent to the site in several directions. It has been shown that Simi Valley groundwater is blended with State Project Water for drinking water, so it cannot be assumed that there are no impacts to this water, when in fact, we have had many detects in Simi Valley of groundwater impacted with Perchlorate which was used at the site. It cannot be assumed that it was not from the site. There was simply no willingness to even investigate the possibility at the time. Now, during risk-assessment of a site who's ultimate land-use cannot be known because NASA has already declared to Congress that their portion of the site is "excess" and may go to other branches of the Federal Government for use that is also unknown. We must therefore assume the most protective stance moving forward in characterization and making remedial decisions for the site.

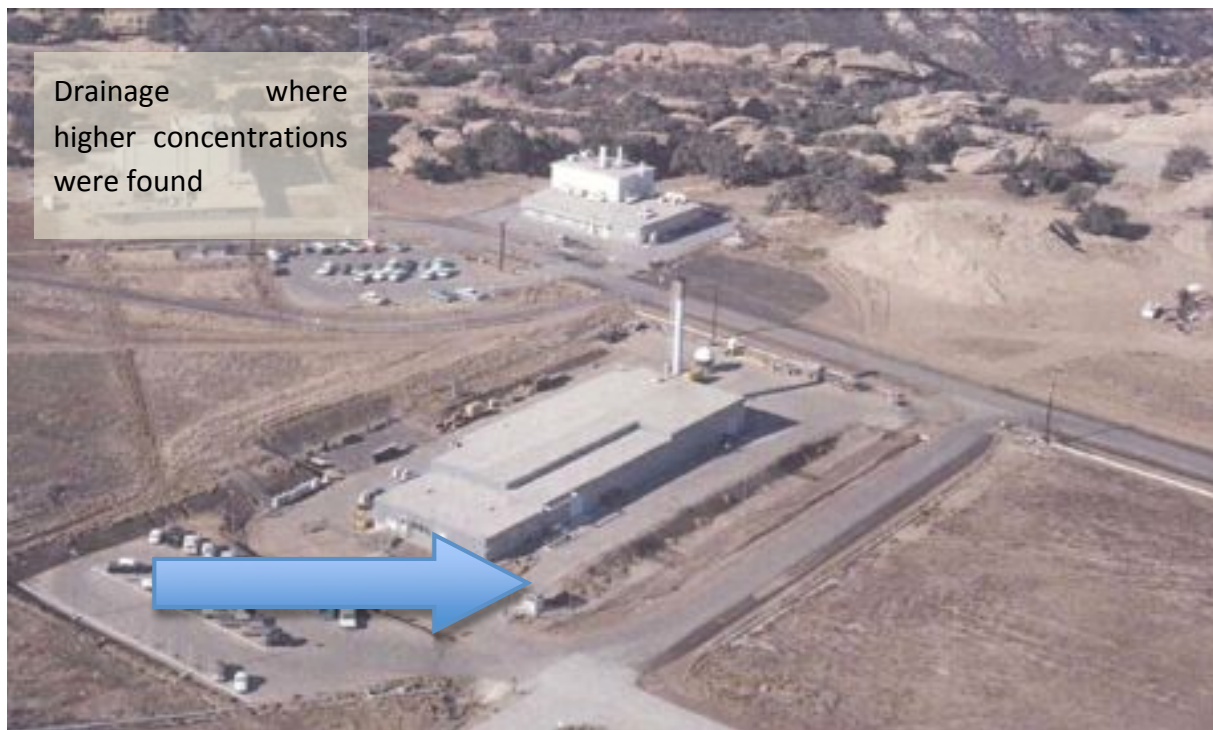


Figure S.1-1 RIHL RFI Site

Location of the UT07 Radwaste underground storage tank is not identified. When unknown operational use dates, and location is also not known, we ask that much more thorough investigation of this tank be done. We request that ultimate disposal information also be provided.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

Details offered of demolition in 1998 are shown as follows:

#### **S.2.2.1.5 1998**

Decontamination and decommissioning of the entire RIHL Site was completed.

The lack of detail about this process is disappointing. In order to determine whether the resulting contamination has been adequately removed, it is necessary to sample the entire area, especially with so little detail offered as to how the demolition process was accomplished with underground vaults, and possible subsurface leakage and migration that may or may not have been addressed at the time.

Now in 2009, very little sampling has been done to address these questions. We ask that this area be sampled for all COPCs related to the Hot Lab as well as metals, and that all operational areas including the parking lot area that was used for storage and staging also be sampled.

At the RIHL Site, one piezometer (PZ-103) was installed to monitor groundwater conditions in alluvium and weathered bedrock (that is, in NSGW). Additionally, no wells have been installed to monitor groundwater conditions in the unweathered bedrock (that is, in CFOU). It appears that only one well has been installed to monitor groundwater conditions at the RIHL site. This is extremely inadequate since the investigation of the soil contamination has also been minimal considering the ultra-hazardous activities that went on at the site through the better part of 4 decades.

#### **S.2.4.5 Surface Water**

Surface water flow at the RIHL Site is shown in Figure 2-7 of the Group 5 RFI Report (Volume I). Surface water may exist intermittently at the RIHL Site as the result of seasonal precipitation events. Surface water runoff flows generally to the east to the DOE LF 3 RFI Site then to the R-2 Discharge Ponds.

Surface water is confirmed here to flow toward R2 Pond in Area II which confirms the potential migration of nuclear contamination to the non-nuclear portions of the SSFL site.

It should be noted that the ultimate discharge actually occurs at Outfall 2, which is no longer a compliance point under the NPDES permit despite the fact that it receives water from “half” the site as stated below<sup>9</sup>:

---

<sup>9</sup> Santa Susana Field Laboratory, RFI Site RIHL, Group 5 Reporting Area, CH2MHill, Page 20 of RIHL Volume S, RFI Site, Group 5

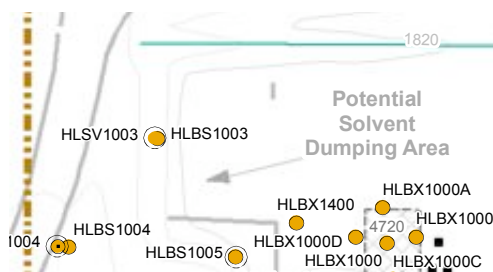
Surface water runoff at the site is regularly monitored as part of the National Pollutant Discharge Elimination System (NPDES) monitoring program under the oversight of the Los Angeles Regional Water Quality Control Board (RWQCB). One monitoring location, Outfall 018, is downgradient at the discharge of the R-2 Ponds (Figure 2-7 of the Group 5 RFI Report [Volume I]). This discharge point is the ultimate discharge point for a large portion of the western half of SSFL.

Behind these giant vaults were offices where workers sat in an office environment with their backs to the vaults.

*Hot Laboratory (1978)*



### Sampling for VOC impacts:



Based on the potential solvent dumping area, it should be sampled, and yet the depiction does not indicate samples taken at the location believe to contain the highest levels of solvent impacts<sup>10</sup>.

<sup>10</sup> Figure S.2-2 RIHL RFI Site Sampling Locations, Group 5 RFI, CH2MHill, October 30, 2008



In this aerial photograph taken in January of 2008 you can still see the outline of the parking lot and the pipes that led from the tanks above, down to the lab. Sampling needs to include the area, including the parking and loading areas of both the Hot Lab and the neighboring Building 55.

Please note that the only remaining buildings and structures as shown in the aforementioned photograph are considered “footnotes” to DOE LF 3, and are not even considered RFI sites in their own right, yet, NFA is the recommendation we see, despite the fact that they are still there, not sampled, not really addressed for what they are: Existing nuclear buildings where hazardous materials were used, disposed of, buried, leaked, washed down, loaded, unloaded, etc. These are all operational processes that must be considered in the characterization process. We ask that they be properly considered here.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



The footprint of the Hotlab burned during this fire. Fire fighters were exposed to potentially contaminated vegetation materials combusted in that smoke that fell out upon the surrounding areas, crossing borders as well as going off-site.



In this photo, in addition to the Hot Lab footprint having burned, the entire pond-dredge area also burned during the 2005 fire. This area also shows disturbed soil and dumped debris that needs further investigation to the south of the former Hot Lab location.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



Here the vaults are shown along the right, and they actually are not very thick.



Notice the road leading south from the parking lot area of the RIHL Hot Lab (bottom, center).

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

**Pond Dredge** area is recommended for CMS, but fails to adequately describe the fact that a depleted uranium slug, dropped from a helicopter was lost in this area and never recovered.<sup>11</sup>

Date	Building/Feature	Chemical Spilled	Amount (gallons)	Comments	References
2/8/1982	Pond Dredge Area	Nu-Vertan (EDTA)	1500	A tanker truck was found dumping liquids at the open field south of Building 20 parking lot. It was determined later that the operator had dumped 1500 gallons of Nu-Vertan liquids on the field.	Noon & Pratt. 1994.

AOC Pond Dredge Area	South of RIHL	1960's to ?	N/A	Dredge materials from Silvernale Reservoir (SWMU 6.8) and R-2 Ponds (SWMU 5.26). Boeing personnel indicate the possibility of construction debris, but no documentation found.	1	Ogden, 2000.
AOC Pond Dredge Area	South of RIHL	1960's to ?	N/A	May contain a spent-uranium slug dropped from a helicopter during test, but not recovered.	1	Rockwell, 1989.

Inorganics	Screen for potential inorganics in pond dredge area. Soil samples were collected at 17 locations.	Perchlorate was detected above the Ecological RBSL in one sample. PDBS1004 at 0-1 ft. bgs Discussion of results is presented in Section H.3.4.2.5 and Figure H.3-10.	Yes. The extent of inorganics impacts is adequately defined by representative sampling locations. Characterization is sufficient for risk assessment.	N/A
------------	---	--	--	-----

Perchlorate was detected at the Pond Dredge location and characterization is NOT sufficient based on sampling. There have been several areas on the western portion of the Field Lab where perchlorate has been detected despite repeated claims by the RPs that perchlorate was only used in Happy Valley and Building 359 in Area 1 respectively. These detections need to be explained and delineated more accurately, as well as, potential sub-surface groundwater impacts from perchlorate.

#### ➤ STL IV

Under Key Decision points, there are several areas within the STL IV facility which are designated as NFA inappropriately including the area where the former “clean room” which is also incorrectly described as room 3275 when in fact it is room 3274. (L5-4)

The Clean Room as identified in the photographs provided in Group 5, and as observed during the site visit – not ALL the concrete had been removed. This is one of the areas they are recommending for NFA and they clearly have not adequately

11

[http://www.etec.energy.gov/library/D&D\\_page/08-1011.00 SSFL DU Slug Search FINAL plus Apps.pdf](http://www.etec.energy.gov/library/D&D_page/08-1011.00%20SSFL%20DU%20Slug%20Search%20FINAL%20plus%20Apps.pdf)

sampled, or even considered the location of the sump drains/containment areas, considering it would have received effluent drainage from the interior lab sinks being used to decontaminate parts that contained beryllium among other hazardous COPCs that were part of the operational history of this area where they used very exotic and reactive materials. This area was also very troubling to us because it was a “trailer” which could be moved at any time. It even had current tags. Where did it go? The walls had gaping holes and therefore the integrity of the trailer was not sound. How was it transported?

- Lower STL IV area is not sampled despite concentrations upgradient, as well as historic photographs showing disturbed soil in this area. This area needs to be sampled for ALL COPCs for STL IV as well as those from Area IV because of sheet runoff as indicated by the “V” marker on drainage indicators leading to the area.

This is the area that brought most vividly to our attention, the fact that these building features are crucial to a successful sampling plan that is intended to find all potential constituents of concern. We look forward to seeing the upgraded building feature (perhaps facility feature log, since so many buildings are now already demolished and removed).

#### STL IV Cleanroom Area or Decon Trailer:



Please note the effluent drainage into the containment area described as feature number

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



3274-001 which indicates that no sampling is warranted and that is due to the condition of the item being “intact.” We appreciate the opportunity to discuss the use of various descriptive words to mean, either “still existing” or “removed” since it is not possible to evaluate the condition of the containment structure sub-surface. Insufficient sampling has taken place to-date in this area and all COPCs should be looked for as this was the terminus of a laboratory sink in a decontamination environment as seen below by the signage inside the trailer.



We also observed in the aerial photographs of Building 3274, these photographs indicate that the outer surface of the trailer was removed separately. Please clarify where this was disposed of, and the specific method, and reason for this disassembly.

Building Feature Log 3274-002 indicates the severely degraded condition of the laboratory

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

sink inside the trailer. Again, no sampling warranted is designated without any clear indication as to the basis of this decision considering the COPCs that would be present in this area.



STL IV lower area where the explosives storage areas were located, also shows significant disturbed soils that are NOT shown on the map submitted in the RCRA Group 5 figures. Also, please note the area to the left of the road where a very large amount of debris is visible.

### STL-IV Storable Propellants

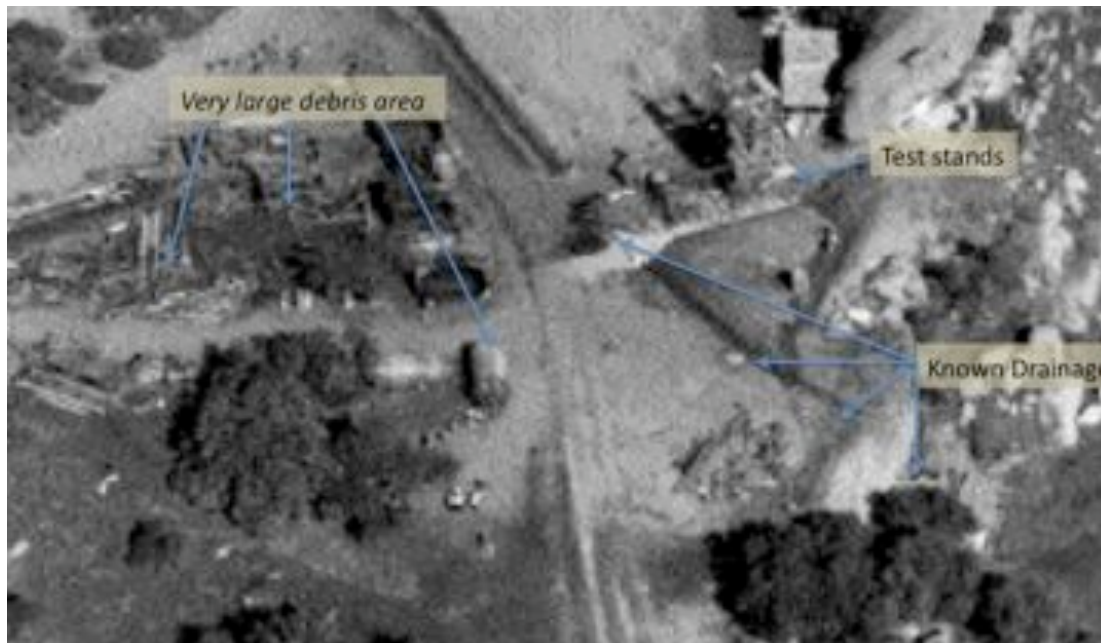
- STL-IV's small rocket engine testing used monomethyl hydrazine (MMH) as a fuel and nitrogen tetroxide (NTO) as an oxidizer
- Neutralization of MMH in the pond initially occurred through use of hydrogen peroxide. Ultimate decomposition products include water, nitrogen, carbon dioxide. Intermediate products include various formaldehyde-containing compounds, and the gases azomethane and methane.
- A recirculating aspirator equipped with an ozonator was later used to treat MMH.

Looking closely at this area, in addition to the very extreme soil disturbance that is visible (lower right, pictured above), this area also receives the run-off from the storage area located behind the rock, as well as the main drainage as demonstrated in the following photographs.

Soil Disturbance Areas<sup>12</sup> do not show the very obvious soil disturbance shown in the very large debris area shown below, nor does it acknowledge the easily observed aerospace

<sup>12</sup> Figure L.2-4, titled Soil Disturbance Areas STL-IV RFI Site, CH2MHill, dated October 31, 2008  
[\\MapFiles\RFI\\_05\RFI\\_Report\RFIgrp5\\_SiteLoc\\_BL\\_PLTS.mxd](\\MapFiles\RFI_05\RFI_Report\RFIgrp5_SiteLoc_BL_PLTS.mxd)

waste debris down the known drainage as identified below.



This known drainage (shown above) is where they have BMPs shown in recent aerial photographs.

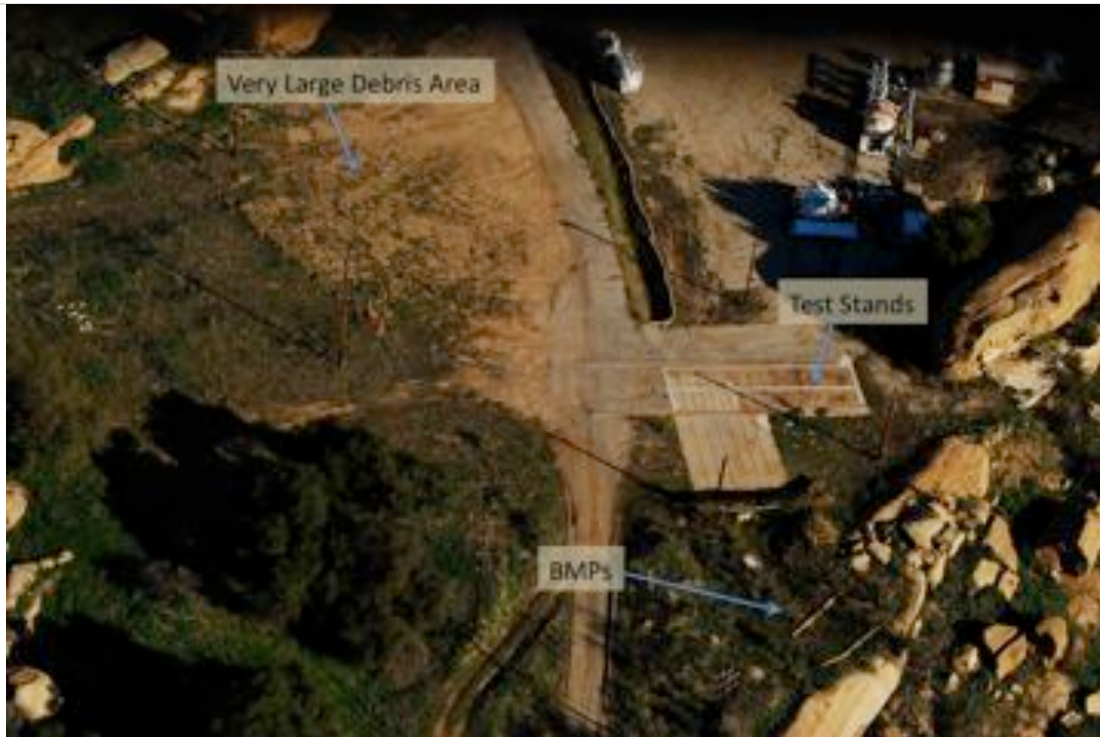
VOCs in Soil Vapor, STL IV RFI Site<sup>13</sup> shows areas with elevated soil vapor detections near the former “clean room” trailer and the area where specific effluent from sinks and other operational facilities inside, has not been adequately sampled based on this report. In addition, the elevated detections appear to be ignored. These areas, which clearly have contaminants present, need to be part of the CMS Corrective Measures Study (V-368).

Energetics in Soil STL RFI Site<sup>14</sup> does not adequately address the area known for storage of energetics. There simply are no samples in the area, so nothing can really be known by this figure. This lower area is not adequately looked at for all constituents of concern, with limited figures available for review.

---

<sup>13</sup> Figure L.3-1A, titled VOCs in Soil Vapor, STL RFI Site, CH2MHill, dated September 16<sup>th</sup>, 2008  
[\\RFI\\_05\RFI\\_Report\CDot\\_BL\\_PLTS\RFIgrp5\CDotVOCsVpr\\_BL\\_PLTS.mxd](\\RFI_05\RFI_Report\CDot_BL_PLTS\RFIgrp5\CDotVOCsVpr_BL_PLTS.mxd)

<sup>14</sup> Figure L.3-7B, titled Energetics in soil, STL RFI Site, CH2MHill, dated September 16<sup>th</sup>, 2008  
[\\RFI\\_05\RFI\\_Report\CDot\\_BL\\_PLTS\RFIgrp5\CDotEngtSoil\\_BL\\_PLTS.mxd](\\RFI_05\RFI_Report\CDot_BL_PLTS\RFIgrp5\CDotEngtSoil_BL_PLTS.mxd)



The area to the left of the road is the same area where debris was shown on historical photographs. This area is not considered, sampled or part of the CMS. On what basis can this decision be made when it took sheet runoff as well as being its' own potential source due to prior storage/disposal practices?

The area to the left of the road is the same area where debris was shown on historical photographs. This area is not considered, sampled or part of the CMS. On what basis can this decision be made when it took sheet runoff as well as being its' own potential source due to prior storage/disposal practices?



Lower STL IV showing the stained concrete where the test-stands were formerly located. In many of the maps, the features are not shown on the same map where the contamination plumes are shown. The drainage below this area tilts to the south, to Bell Canyon and Outfall II, which has since been removed as a compliance point despite the fact that it received drainage from Area IV.

The area marked with BMPs below the test-stand area, as the planned and designed effluent drainage that receives storm-water run-off including that from the 17<sup>th</sup> St. drainage as well as sheet run-off from the pond-dredge area which is considered to be contaminated.

Former storage of waste and chemical containers for a period of several years:



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



This area included a series of BMPs that consisted of straw waddling to encompass each of these areas of waste and equipment/asset storage. This activity demonstrates the understanding that contaminants may have entered the environment from these containers that are degraded in condition and may have leaked. Some of the equipment was initially tarped, and later the tarping was removed.



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



The system of drainage and straw-waddling shows an effort to manipulate stormwater runoff which, now has potentially been altered through the grading and demolition process with inadequate documentation of these important features and details. We ask that these features be documented in detail in all areas subsequent to the submission of Group 5 and that all areas that still exist in the previously submitted group reports be amended to reflect this very important information that will lead to more sound remedial decisions.

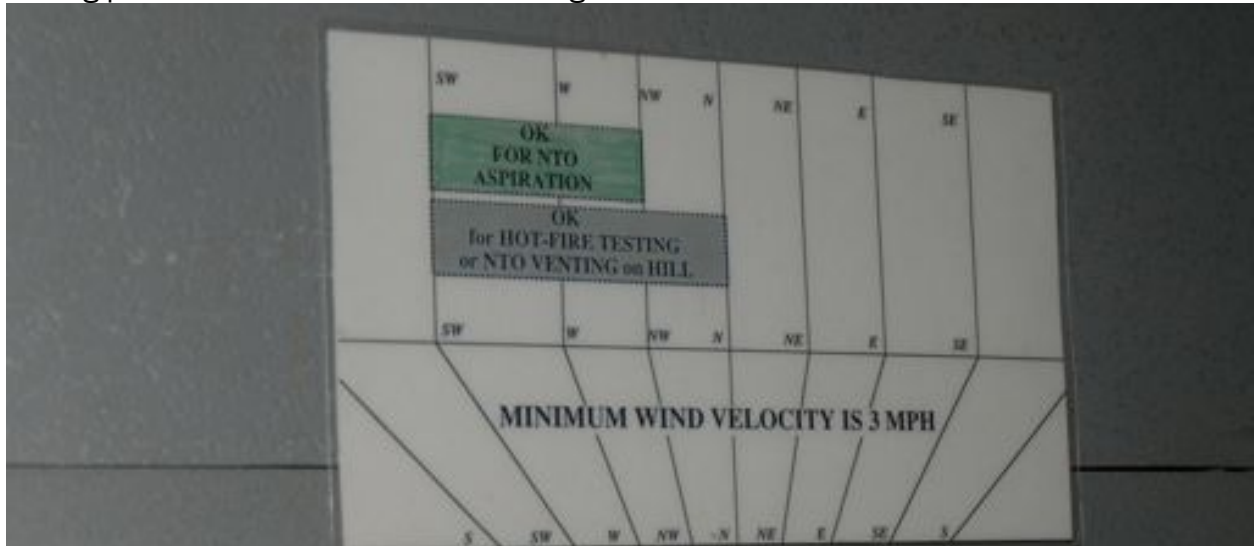


Energetics and MMH highly reactive storage was located here in addition to evidence of debris down the drainage toward outfall 2 below.

This area is not adequately addressed in Appendix U debris documentation and should be sampled for all COPCs related to the STL IV facility.

The hillside below the Ranch House storage area was observed to have debris and this is also the receiving drainage from part of the test-stand activities. It was acknowledged by Boeing on our site visit, but it is not noted as disturbed or an area that has been adequately sampled despite the detections found above the ecological, as well as residential risk levels.

Testing practices at STL IV included venting which is demonstrated here:



We ask that the rationale behind venting in certain directions and not others, be explained, including the wind velocity as described here as a minimum of 3 miles an hour.



In the aforementioned photograph, it is clear from the tracks shown from truck traffic, that the area of disturbance is lower than the area where they are sampling. We ask that the entire "borrow" area be sampled, especially those areas down-gradient from the disturbed soil area.

Shown below is an aerial photograph of the lower "shark area" where there has clearly been activity. We believe that comparison photos for usage during the "borrow soil" programs

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

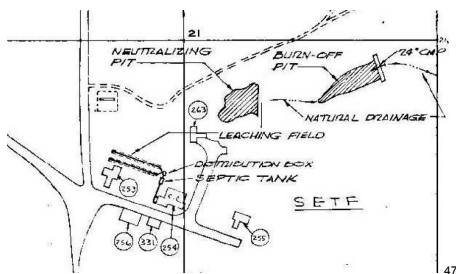
[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



that have previously been conducted in this area.



STL-IV Ponds (1960)



These specific early ponds are not clearly identified in the later building feature documentation logs. We are pleased to see these added layers in the reference maps to be used when considering sampling locations in the SAP.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



Another early photograph, where STL IV is already there, as is the disturbed soils on the lower right. This is early, when the Hot-Lab and building 55 were there, but prior to the SPTF. The shark is very apparent in this photograph and our photos show disturbed soil on the right side or “mouth” of the shark, which is also down-gradient from the areas sampled. We have questions about backfilling materials possibly deposited here, and therefore believe that sampling is justified since they did find some detects.



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

Effluent drainage from Area IV leading to the R2 Ponds, but also from drainage along the road leading to STL IV. This is a constructed drainage system that appears to be ignored by the effluent drainage documentation presented herein.



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

# STL-IV/Compound A



This pond was unlined until later years, and subsequent drainage should also be investigated. Currently, very few samples have been taken in the pond area.



*Notice that the "shark" area is not yet disturbed with the exception of the upper "fin" area where the tanks are located.*

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501[c](3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

Inappropriate CMS areas delineated, even based on current sampling, which is inadequate:



### **ECL (Engineering Chemistry Laboratory and Continuous Wave Laser Laboratory)**

The area recommended for NFA at the ECL Site includes all portions of the site that are not recommended for CMS (Figure F.5-1), including the following Chemical Use Areas:

- Chemical Use Area 9 – Building 3799 (Drum Storage)
- Chemical Use Area 11 – Substation west of Building 3259
- Chemical Use Area 12 – Bunker south of Building 3269

Available historical documentation indicates that operations at the Chemical Use Areas identified above might have involved the use of chemicals. However, the sampling data collected at and around these Chemical Use Areas demonstrate that historical activities have not resulted in significant impacts to the site. These sampling data are summarized in the following section.

**It is inappropriate to detail only the areas for CMS as “all portions of the site that are not recommended for CMS.” Each NFA decision must be supported with justification that includes adequate sampling which as NOT occurred here.**

#### **F.2.2.1.2 1973 through 1980**

Building 3270 was used to manufacture nitric and sulfuric acid materials. Building 3269 was converted from a general chemistry laboratory to the Continuous Wave Laser Laboratory during this period. The ECL Pond was relined three times. The Building 3270 Leach Field became active during this period

It should be noted that the reason it was necessary to re-line the pond was due to deteriorated condition of the concrete liner due to chemical corrosion.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

### F.3.6 Surface Water Findings

Soil within the ECL Site may have been impacted by upgradient sites via surface water transport. Specifically, aluminum and barium were detected above screening levels in surface soil at the SE Drum Yard Site, which is upgradient of the ECL Site. Runoff from the SE Drum Yard Site may have contributed to the elevated concentrations of these metals detected at the ECL Site. However, aluminum and barium are naturally occurring, and the detection of these metals in soil samples above background may indicate the presence of the clay-rich Santa Susana formation, which has typically higher concentrations of these metals, rather than possible impacts from site activities. Also, it is important to note that the SE Drum Site is recommended for No Further Action because the elevated aluminum and barium concentrations in soil were not found to be a significant risk to future receptors.

It is inappropriate to discount the findings of Barium and aluminum which are consistent with what we see in Area IV and the areas where surface water run-off flows from Area IV. It is inappropriate to dismiss finding of barium as naturally occurring when this portion of the site is Chatsworth Formation and NOT Santa Susana Formation.

- Soil Vapor – Vinyl chloride, benzene, trichloroethene, and tetrachloroethene were identified as COCs for inhalation of indoor air by future residents. No COCs were identified for inhalation of ambient air by future residents or future recreators.

Based on the finding of Vinyl Chloride, TCE and DCE should be considered and sampled for as Vinyl Chloride is a decay product of TCE as is DCE.

### F.5.4 NFA Site Action Recommendations

Based on a detailed review of all available historical documents, an evaluation of sample data collected at the site during previous investigations and the current RFI, including the results of human health and ecological risk assessments performed for the site, all areas of the ECL Site except the six CMS areas identified in the previous section are appropriate for an NFA designation. For the areas recommended for NFA, the sections below summarize the historical uses, the sampling data collected, and the results of the HRA and ERA.

All but Six locations recommended for NFA as stated above. Each of the NFA locations should be presented with specific justification to each, so that decision points are supported by the data included.

- **Engineering Chemistry Laboratory (ECL):** Manufactured rocket and gun propellants, performed exploratory chemicals research (B3270) through 1990s. ECL Pond used to temporarily hold hazardous waste discharges from Building 3270 and surrounding areas.  
**Continuous Wave Laser Laboratory (CWLL, B3258 & 3269):** A research & development facility, general chemistry lab, and small scale laser test facility.

Looking at the area that held hazardous waste and the fact that much of these areas are not being considered for CMS based on the recommendations put forth. VOCs for the ECL Site<sup>15</sup> show some detections of Vinyl Chloride, the most toxic of the TCE decay products, and the date of the sample (which is supposed to be the most recent) is 1997, Based on the samples shown, and the fact that it includes samples in the last 10+ years, indicates that the sampling is inadequate. The area between buildings 3260 and 3258 was observed to have drum storage and needs to be sampled more completely as this is also one of the loading areas.

A second figure is provided, also titled VOCs Data Results ECL RFI Site, but figure 3-8C<sup>16</sup> where different sample dates are described as either “2008 or pre-2008 but out of the 27 samples that depict a comprehensive look at the site, only 4 were in 2008 and all the other samples are dated 1997 or earlier (as early as 1984) showing indeed a very incomplete picture with regard to detection limit technology in the past 15 years.

This area is also inadequately sampled based on location of samples in relationship to the operational history.

Please note the drum storage between buildings:



---

<sup>15</sup> VOCs Data Results, ECL RFI Site, Figure 3-8B, Santa Susana Field Laboratory, [\\MapFiles\RFI\\_05\RFI Report\SpiderDiagram\RFIGrp5 SpiderDiagram EL.mxd](#) by CH2MHill, completed in 2008 though no date is present.

<sup>16</sup> VOCs Data Results, ECL RFI Site, Figure 3-8C, Santa Susana Field Laboratory, [\\MapFiles\RFI\\_05\RFI Report\SpiderDiagram\RFIGrp5 SpiderDiagram EL.mxd](#) by CH2MHill, completed in 2008 though no date is present.

Figure F.3-1A shows inadequate sampling based on the number of exceeded findings above residential levels. Many of these areas are slated for NFA without adequate justification.

“Approximate Dredge Deposition Area” as noted on Figure F.2-2A is not shown on the “Metals in Soil” figure F3-5 where high detections are noted but additional sampling is not shown despite the need to better delineate these areas of contamination.

#### EEL Environmental Effects Laboratory

- Perchlorate was not found to have been previously used at the EEL Site and was not included for analysis at any sampling locations.

##### **G.3.4.2.6 Dioxins**

Dioxins were not found to have been previously used at the EEL Site and were not included for analysis at any sampling locations.

##### **G.3.4.2.7 Energetics**

Two soil samples were collected from two locations and analyzed for energetics. No energetics were detected in any of the soil samples, and results are shown on Figure G.3-6.

Further characterization of energetics is not recommended for the EEL Site.

There have been detects of perchlorate at several locations throughout the SSFL beyond the area there it was “used” according to referenced documents, yet it is detected throughout the site. This is another area where documentation is inadequate and waste disposal was handled at this facility throughout the active life-span of the facility. All COPCs including perchlorate, dioxins and energetics should be sampled for here.

#### 1970s: Process Development Unit (PDU)

- Building 4005 was used for molten salt research (1950s), then uranium carbide fuel manufacturing (1960s), and then experimental coal gasification (late 1970s).
- Coal gasification involved conversion of low BTU and sulfur coal to combustible gas by feeding coal into a burner.
- Destruction of chlorinate waste using sodium carbonate was also conducted in this area in the late 1970s.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



Building 006 was called the Sodium Lab and did have steam rising from it on our first tour day with Norm and his team in late 2007. This area in our photographs shows extreme staining of the concrete loading area and driveway. Here is a portion of a historical photograph with operational activities shown. This was a hazardous waste storage area and it appears as if very little sampling has taken place here, despite the very obvious evidence of corrosion and rust staining that are indicative of drum storage that was not adequately contained over the years.



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)



Staining of this area makes it necessary to investigate further, yet it seems to be overlooked.

- Perchlorate was not found to have been previously used at the EEL Site and was not included for analysis at any sampling locations.

#### **G.3.4.2.6 Dioxins**

Dioxins were not found to have been previously used at the EEL Site and were not included for analysis at any sampling locations.

#### **G.3.4.2.7 Energetics**

Two soil samples were collected from two locations and analyzed for energetics. No energetics were detected in any of the soil samples, and results are shown on Figure G.3-6.

Further characterization of energetics is not recommended for the EEL Site.

## **Appendix U.2 Debris Survey**

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

- Hummocky terrain areas that may indicate historic dumping of soil. Note that some areas at SSFL, particularly in the undeveloped portions of the facility, have evidence of soil mounding that appears to be associated with firebreak grading performed during recent wildfire events (e.g., the 2005 Topanga Fire). These areas are typically not identified as debris areas.

This statement is inappropriate as roads have historically led to debris and dumping, which was the historic practice. By dismissing these areas as probable relationship/cause as, “fire-breaks” seriously diminishes the ability to FIND the very contamination we are all looking for. It is strongly recommended that all hummocky terrained areas such as the area adjacent to STL IV be investigated for the potential contaminants that might be present, rather than dismissing them.



This storage of hydrazine is not noted since these materials were removed prior to the “documentation feature logs” completion. Hydrazine should be sampled for throughout this area where many buckets and other larger containers were observed.

It is stated that the following areas are **NOT** intended to be addressed:

- Features consisting solely of nonhazardous items such as concrete, asphalt, and rebar and other inert metal piles(i.e., items are not intermixed with soil).
- Areas with materials of known origin and quality (i.e., no hazardous substances present), or material stockpile areas that are being actively managed.
- Areas with buried debris potentially present, but with no indications on the ground surface based on visual inspection.

We find serious flaws in the idea of dismissing areas that have shown evidence of historic disposal based on these criteria. Without the appropriate documentation as to the source of the buried and/or dumped concrete all throughout the SSFL site, it is impossible to dismiss any such debris as inert, or unimportant. We must remember that many of the “landfills” are steep unlined ravines, so the best judgment was not exercised at the time these decisions were made. It is therefore even more important to investigate each of these findings without dismissing any areas as NFA without thorough understanding and

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

delineation of the existing contaminants present in the soil and sub-surface media such as groundwater below the site.

This language should be removed from the report, and NO areas should be dismissed based on visual inspection when so many of these “visual inspections” have been done inadequately, without providing adequate relational documentation to make these decisions (such as chemicals used, prior sampling, and understanding and investigating all drains and sewage systems more thoroughly).

**Table U.4-1**  
**Group 5 Debris Location Evaluation**  
**Appendix U - Waste Debris Survey**

In this table, it is noted that most debris piles that are documented here (and this list is seriously deficient of several existing, known areas of dumping that appear to be ignored), are also not suggested for sampling. This continued effort to fail to look where there is evidentiary knowledge of contamination. This report is support to support the subsequent effort of cleaning this site to the highest, most protective standards. How can this be accomplished when existing, known contamination is being actively dismissed and ignored? We ask that each area of soil disturbance be investigated properly with the most protective clean-up in mind. This is a tall order, and requires that we look with our eyes open.

#### **U.4.1 Sampling Decision Rationale for Containers**

- If the container volume could have contained no more than 1 gallon, no sampling was performed. This decision might be modified based on surrounding site chemical use and professional judgment.
- If more than one small (for example, less than 1 gallon) container was present within an approximate 20-foot by 20-foot area, samples were collected at a minimum of one location within the area.

This decision should include spatial proximity to the container volumes present, and should also be modified for certain COPCs that typically come in smaller quantities such as perchlorate, MMH, and others.

**Figure**  
**U.3-1**

Debris Sampling Locations are inadequate and should instead include all locations of potential debris.

## U.4.2 Soil Piles with Intermixed Debris

- If the debris pile size was less than 5 cubic yards (approximate volume), no sampling was performed. Sampling might be performed if evidence of a release (for example, soil staining) is present, or if warranted based on surrounding site chemical use and professional judgment. For example, if wood or metal debris (stainless steel tubing and pipes, for example) is present, sampling might be performed.
- If the debris pile size was greater than 5 cubic yards but less than 50 cubic yards (approximate volume), one soil sample was collected from the interior portion of the debris pile (in other words, grab samples were not collected from the surface of debris pile) with a hand auger or exploratory trenching.

It is completely inappropriate to reduce sampling based on a debris pile size less than 5 cubic yards, when so many debris piles were specifically placed for the purpose of environmental decontamination through the decay process. This process releases the contaminants to the surrounding environment and therefore COMPLETELY justifies sampling. The very idea that a debris pile that is as large as 50 cubic yards would be sampled only once when it would be understood that the characterization of a pile of this significant size would vary widely throughout the debris. A minimum of 3-4 samples should be taken for debris found of this size, and all trenching should include sampling, AND analysis of said samples.

Additional examples of the need to do a better job of firstly identifying all areas, and to take an active investigative position to determine and delineate, not dismiss:

CH2-G05-2001	1/31/2008	STL-IV: Several soil piles intermixed with concrete and asphalt.	48,119	265158.887	1785330.035	Not removed	Yes
--------------	-----------	--	--------	------------	-------------	-------------	-----

In this example, only some grab samples are recommended despite the size of these debris piles, the number of them, the fact that they were dumped many years ago (shown in historic photos).



cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

In addition to the obvious massive dumping that took place in the area adjacent to STL IV, please note the road to the facility that is no longer there, but is adjacent to the dumping area.

CH2-G05-3005	2/1/2008	DOE LF3: Large soil piles intermixed with asphalt and concrete.	4,205	266227.139	1785034.199	Not removed	Yes	2	Explor. trenching w/grab sampling	Screening Suite	Various low-lying soil piles/hummocky areas were present.
--------------	----------	---	-------	------------	-------------	-------------	-----	---	-----------------------------------	-----------------	---

DOE LF3 location is not described in adequate detail to understand where this located. Since many facilities exist within this RFI Site, each must be clearly identified with descriptive words identifying the related facility or building, whether existing or removed.

Clear soil disturbance and other chemical use areas are visible in the following photograph, which supports our concern about ignored areas of soil-disturbance.



Also please note that the run-off pond is unlined in this photograph and the test stand at the top center of the photograph was later used for storage of waste containment as well as waste/chemical use tanks and other assets.

cleanuprocketdyne.org and acmela.org are in affiliation with International Humanities Center, a nonprofit public charitable organization exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code. Environmental advocacy through the arts, for proper clean up to the most protective standards for the Santa Susana Field Laboratory and other legacy aerospace and nuclear sites. ACMELA.ORG is made possible through a generous grant from the Annenberg Foundation.

[www.annenbergfoundation.org](http://www.annenbergfoundation.org)

We appreciate the opportunity to submit comments for review on the Group 5 portion fo the RFI for the Santa Susana Field Laboratory. We look forward to your response and thank you for your continued tireless efforts in getting the Santa Susana Field Laboratory properly characterized for this long-awaited clean-up.

Sincerely,

Christina Walsh  
Cleanuprocketdyne.org, founder/director  
ACME Aerospace Cancer Museum of Education, co-founder  
A project of the International Humanities Center  
and made possible by the Annenberg Foundation  
<http://www.ihcenter.org>  
<http://www.annenbergfoundation.org>

Cc: Norm Riley, Gerard Abrams, Jim Pappas, Susan Callery, Larry Woodson, Tom Skaug, Tom Seckington, Gregg Dempsey, Nicole Moutoux, Craig Cooper, Damon Wing, Dan Hirsch, Marie Mason, Dawn Kowolski, Holly Huff, Barbara Johnson, Elizabeth Crawford, Louise Rishoff, Aron Miller, Tracy Egoscue, Cassandra Owens, Thomas Johnson, Stephanie Jennings, Tom Gallacher, Merrilee Fellows, Allen Elliott, Art Lenox, Kamara Samms, Eric Evans, Carl Palladino, Phil Rutherford.