

Responses to Comments

Agreements in Principle State of California and the Department of Energy State of California and the National Aeronautics and Space Administration

prepared by
Department of Toxic Substances Control
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Volume I

Introduction

DTSC held a public comment period from September 3, 2010 through October 1, 2010 for the Agreements in Principle with the Department of Energy (DOE) and the National Aeronautics and Space Administration (NASA), and the document entitled “Confirmation Protocol ‘Not to Exceed’ Background Cleanup Standard for Soils.” Over the course of the comment period, DTSC received comments and questions from *more than 1,700* interested community members and stakeholders. ***Nearly all expressed excitement about and support for the Agreements in Principle.*** Only 14 of the commenters asked questions or expressed reservations about the cleanup described in the Agreements in Principle, but these reservations rested largely on perceptions and assumptions of the cleanup that will be conducted under Administrative Orders on Consent that are based on the Agreements in Principle.

This Response to Comments organizes and presents the comments received to help the reader understand the nature and scope of the feedback received from the community and interested stakeholders. It also provides responses to the questions and concerns received, and how the questions have been answered or the concerns addressed in the Administrative Orders on Consent.

This Response to Comments is organized into the following sections:

Organization of Responses to Comments

Volume I

- Summary/Overview of Comments Received
- Supportive comments
- Questions and concerns related to the operation of the Agreements in Principle
- Cleanup Process – Relationship with SB 990 and the Agreements in Principle

Volume II

- Detailed responses to comments

Summary/Overview of Comments Received:

The more than 1,700 comments that were received varied widely in scope and content, but fell primarily into the following general categories:

- General expressions of support for the Agreements in Principle
- Detailed expression of support and identification of positive features in the Agreements in Principle
- Suggestions for additions/augmentations to the Agreements in Principle
- Questions and concerns related to the operation of the Agreements in Principle
 - Comments and Questions related to how the Agreements in Principle would procedurally be implemented
 - Comments and Questions about possible ramifications and consequences of the implementation of the Agreements in Principle

Expressions of Support

In general, those expressing support were pleased with the Agreements in Principle as presented, which they felt were responsive to their longstanding concerns about their health and the environment, and that the Agreements in Principle would result in a cleanup to the standards of SB 990. They also expressed pleasure in the simplification and acceleration of the cleanup process, and the protectiveness of the cleanup goal. Many expressed appreciation to the Secretary of the Department of Energy, the Administrator of NASA, and the Secretary of Cal/EPA for taking the initiative and offering the approach in the Agreements in Principle.

There were a number of these commenters that took the time to list the key features in the Agreements in Principle that they particularly appreciated. The features they noted are listed as follows, in no particular order:

- Appreciation for the role of U.S.EPA , whom they hold as trustworthy, in the site characterization and cleanup efforts in Area IV and the Northern Buffer Zone.
- Appreciation that the cleanup standard will be background levels, which would result in the contamination being removed.
- Appreciation that local background levels would be used not regional or national levels.
- Appreciation that both radioactive and chemical contaminants would be addressed (at least with the DOE Agreement in Principle)
- Although apprehensive about the use of exceptions, appreciation that the exceptions in the Agreements in Principle are limited and narrow.

- Appreciation that the Agreements in Principle accommodate endangered plants and animals, but not at the expense of the public.
- Although apprehensive about how DOE and NASA may influence the detection limits that are used, but appreciation that the Agreements in Principle acknowledge that the site cannot be cleaned up below what can be measured.
- Although apprehensive about the exceptions for Native American Artifacts and its use to eliminate cleanup in large areas, appreciation that the exception in the Agreements in Principle are limited and narrow.
- Although apprehensive about the use of the exception for unforeseen circumstances and its vagueness, appreciation that it is limited to only 5% of the soils to be cleaned up.
- Appreciation that the cleanup standard to be used is a “bright line” and does not allow averaging levels of contamination which could allow contaminants to remain on site.
- Appreciation that the Agreements in Principle will not allow contamination to be buried or landfilled at the site.
- Appreciation that backfill soils will be clean.
- Appreciation that the waste soils will be disposed in appropriately licensed and permitted facilities.
- Appreciation for the efficiency (in the DOE Agreement in Principle) of taking samples simultaneously for chemical analyses as U.S.EPA is taking them for radiological analysis.
- Appreciation for the streamlining of the process so that time is not unnecessarily taken doing risk assessments.
- Appreciation that DOE and NASA will follow contiguous contamination if it leads offsite and take responsibility for cleaning it up.
- Appreciation that the Agreements in Principle maintain the 2017 deadline for cleanup completion.
- Appreciation that DOE and NASA will submit to the regulatory authority and oversight of DTSC.

Response: DTSC appreciates the expressions of support for the Agreements in Principle and for the Administrative Orders on Consent that are to follow. No changes are required based on these supportive comments.

Suggested Additions/Augmentations

Some of the commenters that were supportive of the Agreements in Principle identified a number of additional elements that do not exist in the Agreements in Principle that they desire to see included. These features are listed as follows, and the response to those ideas and suggestions:

Groundwater

- Commenters felt it was important that groundwater contaminated with both chemicals and radioactivity be fully addressed in a final agreement.

Response: The Agreements in Principle address soils contamination only. However, although the Agreements in Principle only address soils contamination, that does not relieve DOE or NASA of their continuing responsibility to address the contaminated groundwater. Groundwater, and the parties' obligations regarding groundwater contamination, will continue to be addressed through the 2007 agreement.

Radioactive contamination and NASA

- Commenters felt it was important that the NASA Agreement also include investigation and cleanup of radioactive contamination. Many of these commenters felt strongly that the radioactive contaminants may not be limited to DOE's Area IV and Northern Buffer Zone.

Response: DTSC will continue to work with NASA to address the possibility that radioactive contamination may be present outside of Area IV, and in NASA's Area II and portion of Area I, and ensure that the assessment of site conditions includes analysis for radiological contaminants.

- As an alternative, several commenters suggested that DOE's agreement be expanded to include responsibilities for investigating and cleaning up radioactive contamination in the entirety of the Santa Susana Field Laboratory.

Response: To the extent that any radioactive contamination is found in NASA's Area II or Area I, DTSC anticipates that additional efforts will be taken to determine the source of and responsibility for that contamination.

- Commenters also felt it was important that NASA not only be held to the same cleanup standard for radioactive contaminants, but also dispose of soils contaminated with radioactive contaminants in the same way as DOE has committed to do.

Response: DTSC will continue to work with NASA to ensure that soils found to be contaminated with radioactive contaminants are disposed of properly.

Radioactive contamination outside of Area IV

- Commenters asked that U.S.EPA expand the scope of its Radiologic Characterization Survey to include at least NASA's area of the site.

Response: To DTSC's knowledge U.S.EPA is not able to take on responsibilities for areas outside of Area IV and the Northern Buffer Zone. U.S.EPA is conducting those activities as a result of Congressional direction and a specific appropriation. As stated above, DTSC will continue to work with NASA to address the possibility that radiological contaminants may be present outside of Area IV, and in NASA's Area II and portion of Area I, and ensure that the assessment of site conditions includes analysis for radiological contaminants.

Confirmation Protocol

- Commenters recommended that a confirmation sampling protocol for NASA be developed that operates in the same way as DOE's confirmation sampling protocol.

Response: DTSC intends to develop a similar confirmation sampling protocol that will apply to NASA's Areas II and Area I.

Final Agreement

- All parties were strongly urged to make the Agreements in Principle binding and enforceable

Response: DTSC agrees that the terms and provisions of the Agreements in Principle must be embodied in final Administrative Orders on Consent to be enforceable and to accomplish what they describe. It is DTSC's intention to resolve remaining issues and reach agreement as quickly as possible so that the activities described in the Agreements in Principle can be implemented.

- Parties were urged to sign final agreements as soon as possible.

Response: DTSC desires to formalize these requirements quickly in final Administrative Orders on Consent. DTSC received overwhelming support from the affected community in support of the Agreements in Principle and to wrap up negotiations and sign enforceable agreements quickly. Because there has already been a 30 day comment period and the Agreements in Principle have remained unchanged, DTSC does not believe that an additional comment period is needed for

the public to simply verify that issues that they identified have been resolved. However, DTSC also received a handful of requests to review the final Administrative Orders on Consent before they are signed, and DOE has requested that an additional comment period be offered to the public on the final Administrative Orders on Consent. Because of these requests, DTSC will be providing an additional review period for the public to and to comment on any new issues raised by the final Administrative Orders on Consent.

- Parties were urged to not hold another public comment period on the final agreements when they are developed.

Response: DTSC recognizes that an additional review period delays finalizing the agreement and proceeding to implementation. As soon as the public review period described above has ended and any required adjustments to the documents made, DTSC will be working with DOE and NASA to sign the final Administrative Orders on Consent as soon as is practicable.

Future Site Use

- Excitement was expressed about the cleanup and the opportunity it presented for the site to eventually be considered for public open space or park use.

Response: While DTSC appreciates support for the proposed cleanup actions, neither the Agreements in Principle nor any final Administrative Order on Consent affect or influence decisions by the owners of the property regarding its planned future use. Those decisions will be a function of discussions between the property owners, the local government(s) that govern land use, and the community.

The Boeing Company

- There was concern expressed that Boeing was not included in the Agreements in Principle and a desire to see them commit to clean up the remaining portions of the site in a similar way.

Response: DTSC would be pleased to discuss any and all of these issues further with Boeing as we look to resolve issues and reach agreement on the cleanup of the site as a whole.

Questions and concerns related to the operation of the Agreements in Principle

The following sections present the primary questions and comments expressed about the Agreements in Principle and the cleanup that they would represent. These comments and questions focused in part on misunderstandings or misconceptions about the Agreements in Principle (e.g., the options for onsite treatment, the application of the 5% cap as it relates to the exceptions, the role of other regulatory agencies and authorities), and in part on the understanding of the cleanup process itself.

Cleanup Process – Relationship with SB 990 and the Agreements in Principle

Before presenting the specific questions that were raised regarding the implementation of the Agreements in Principle and the processes and procedures that will be used, DTSC feels it is important to provide some information about the cleanup process in general, and some of the related processes and procedures that are part of the cleanup process. It is important for the reader to understand the “normal” cleanup process in order to understand the cleanup requirements in the Agreements in Principle and how the Agreements in Principle are consistent with the state and federal cleanup processes.

Summary

To understand the Agreements in Principle you need to understand how cleanup values are calculated based on the land use specified under SB 990, the relationship between those calculated values and the background and detection limits for the contaminants of concern at the Santa Susana Field Laboratory, and the availability of discretion to modify those values through the use of balancing criteria. Under the Superfund process, the maximum amount that cleanup levels may be adjusted is 100 fold. So for a cleanup level that has been calculated to achieve less than one in one million increased cancer rate (1×10^{-6}), the maximum the calculated cleanup levels may be adjusted through the exercise of the balancing criteria is to achieve less than one in ten thousand increased cancer rate (1×10^{-4}). Based on an analysis of several of the known and highly ubiquitous contaminants of concern at the Santa Susana Field Laboratory, the anticipated background concentrations, and known limits of detection, are at levels that are either at or less protective than 1×10^{-4} , the maximum allowable departure from the required risk level of 1×10^{-6} .

Because SB 990 is protective and requires the cleanup standards that it does, and because the levels of all contaminants, and the risks they pose, must be summed together, background and laboratory limits will become default standards, and be protective only to the 1×10^{-4} level (and in some cases less protective than that). Because these default standards are already at or less protective than the 1×10^{-4} level, there can be no additional

adjustment of these values through the application of the balancing criteria, and no discretion available to DTSC to evaluate cleanup options that could only be less protective.

The operation of the Agreements in Principle yield a result that is consistent with the anticipated outcome of the establishment of cleanup levels under the Superfund process and SB 990. Without discretion to modify the required cleanup standards, the only options available are to evaluate ways to achieve those standards, and ways to mitigate the environmental impacts of the cleanup, and to restore the site and the ecosystems and habitat that must be impacted to clean it up.

Superfund Law

Superfund is the common name for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), a United States federal law designed to clean up sites contaminated with hazardous substances. Superfund provides broad federal authority to clean up releases or threatened releases of hazardous substances (which include hazardous chemicals and radioactive materials) that may endanger public health or the environment. The law authorized the United States Environmental Protection Agency (U.S.EPA) to identify parties responsible for contamination of sites and compel those parties to clean up the sites. Where responsible parties cannot be found, U.S.EPA is authorized to clean up sites itself, using a special trust fund.

California has enacted a similar law, known as the Carpenter-Presley-Tanner Hazardous Substance Account Act, commonly referred to as State Superfund. It references and incorporates the federal Superfund regulations and requires cleanups overseen by DTSC to follow the federal regulations.

Superfund Process

The Superfund process involves a sequence of steps that build upon each other, intended to better understand the environmental problems at the site and to decide what to do about those problems. These steps are described as follows:

- **Preliminary Assessment**

A Preliminary Assessment an initial investigation of a site where hazardous waste, chemicals or radioactive contaminants are suspected to have been disposed of illegally or improperly. The goal of the Preliminary Assessment is to confirm whether the hazardous waste, chemicals or radioactive contaminants have been disposed, and to determine whether the site poses a significant threat to public health or the environment and requires action. The Preliminary Assessment is conducted by either a regulatory agency or the potentially responsible party under a regulatory agency's oversight.

- **Remedial Investigation/Feasibility Study**

A Remedial Investigation/Feasibility Study is done at a site where contamination from hazardous waste, chemicals or radioactive has been confirmed. *[As a note for reference in the discussion in later sections, this phase of the process is where risk assessments are conducted, alternatives assessed, and the “balancing criteria” exercised as a cleanup plan is recommended.]*

Remedial Investigation

The Remedial Investigation is performed to characterize the site. Through extensive sampling and laboratory analyses, the Remedial Investigation identifies the length, depth and width of contamination, defines the possible pathways of migration (and possible exposure to the contaminants) and measures the degree of contamination in surface water, groundwater, soils, air, plants and animals. Information gathered during the Remedial Investigation fully describes the hazardous waste, chemicals or radioactive contaminants problem at the site so that an appropriate solution can be developed.

Feasibility Study

The Feasibility Study uses Remedial Investigation information to assess the site’s risk or threat to public health or the environment (risk assessment) and to develop alternative remedies that are able to eliminate the site's threat to public health or the environment. During the Feasibility Study, each of the cleanup alternatives is evaluated, and concerns weighed, to reach a balanced decision that protects people and the environment.

Proposed Remedial Action Plan

The Proposed Remedial Action Plan (also called a draft Remedial Action Plan under State Superfund) presents the preferred alternative. The Proposed Remedial Action Plan summarizes the decision that led to the recommended remedial action by discussing each alternative, the criteria used to measure it and against it was weighed (the “Balancing Criteria) and the reasons each alternative was chosen (or for those not chosen, rejected). The Proposed Remedial Action Plan is presented to the public, which is encouraged to review the Proposed Remedial Action Plan and make comments during a comment period, either at a public meeting or separately in writing. The comments are reviewed and compiled into a Responsiveness Summary and modifications to the Proposed Remedial Action Plan may be made. Additional public notice is required if significant modifications are made to the Proposed Remedial Action Plan or a different remedy is selected.

- **Record of Decision**

The final decision is documented in the Record of Decision (also called the final Remedial Action Plan under State Superfund). The Record of Decision includes the selected remedial action, the Responsiveness Summary and a bibliography of documents that were used to reach the remedial decision. The Record of Decision serves as the definitive record of the remedy selection process for the site and a convenient reference to other documents that were developed during the remedy selection process.

- **Remedial Design and Construction**

The remedial design spells out the technical requirements of construction. The remedial design details the size, scope and character of a site's cleanup - the planned action that will, at a minimum, protect public health and the environment. It translates information from the Remedial Investigation/Feasibility Study, the Record of Decision and any additional data gathered during design preparation into clear, precise facts and numbers.

- **Interim Remedial Measures**

Cleanup actions may or may not also include Interim Remedial Measures. An Interim Remedial Measure is defined as a set of short-term actions or activities taken to quickly prevent, mitigate or remedy an unacceptable risk posed to human health and the environment by hazardous waste, chemicals or radioactive contaminants that have been improperly disposed.

- **Operation and Maintenance**

Some cleanups include ongoing monitoring requirements. These monitoring requirements are included in Operation and Maintenance Plans. Operation and Maintenance can include activities such as visual inspections, upkeep requirements, and sampling to confirm that the efforts are still successful.

Establishing Cleanup Levels

Under both the federal and State Superfund, cleanups are required to be done under the procedures in a set of federal regulations called the "National Oil and Hazardous Substances Pollution Contingency Plan" (National Contingency Plan). Under these procedures, cleanup levels are established for each site using what it calls "Applicable, Relevant and Appropriate Requirements." Applicable, Relevant and Appropriate Requirements are any federal or state environmental statutes and regulations that explicitly specify cleanup standards.

Risk Assessment

Where Applicable, Relevant and Appropriate Requirements are not available, or may not be explicit or protective enough, the National Contingency Plan requires that site-specific cleanup levels be set to prevent or reduce risk. The Superfund process calls “risk” the chance of harmful effects to human health or to ecological systems resulting from exposure to a chemical or radiological contaminant, or other environmental stressor (any physical, chemical, or biological entity that can cause a negative response). The Superfund process uses risk assessment to characterize the type and amount of health risks to humans (e.g., residents, workers, recreational visitors) and ecological receptors (e.g., birds, fish, wildlife) from chemical or radiological contaminants that may be present in the environment. Risk assessment provides a systematic procedure for predicting potential risks to human health or the environment. The results of risk assessments are used to help decide how to protect humans and the environment from chemical or radiological contaminants.

The establishment of these site-specific cleanup levels is done using a number of mathematical calculations to estimate possible exposure to the chemicals or radiological contaminants. These calculations use a variety of assumptions to estimate a number of factors that would be present if the land is used as anticipated. These assumptions are used to estimate exposure and potential health effects based on that exposure.

For carcinogenic contaminants, these levels are established so that the risk posed by the site conditions represents less than a one in one million increased cancer rate (1×10^{-6}). For non-carcinogenic contaminants, these levels are established so that the site conditions will not result in adverse effects to human health, and are expressed as a “hazard index,” and no adverse effects is represented by a hazard index of less than 1. Under the Superfund process, cleanup levels are also established based on ecological concerns and in some instances levels established to be protective of ecological concerns may be lower than those that are protective of human health.

Summed Risk

The Superfund process requires that the risk values that are calculated for all contaminants of concern at the site (both radioactive and chemical contaminants) must be added together, not viewed independently. Excess cancer risk from both radioactive and chemical contaminants are to be summed to provide an estimate of the combined risk presented by all carcinogenic contaminants as specified in OSWER directive 9200.4-18 (U.S. EPA 1997a) and “Radiation Risk Assessment at CERCLA Sites: Q & A”, OSWER Directive 9200.4-31(P), U.S. EPA, Dec. 1999, p. 11.¹

Assumed Land Use

¹The full document can be accessed at:
<http://www.epa.gov/superfund/health/contaminants/radiation/pdfs/riskqa.pdf>.

One of the primary assumptions that these calculations rely upon is the land use. The Superfund process requires the assumption to be based upon the reasonably anticipated land use. The local government General Plan land designations and local zoning designations are the most reliable expressions of prospective land use. OSWER Directive No. 9355.7-04 "Land Use in the CERCLA Remedy Selection Process," May 25, 1995, p. 2, 4-5. DTSC and U.S.EPA, in implementing the Superfund process, defer to local governments' land use plans and zoning decisions, and base their cleanup level calculations on the assumption that the land will be used as the land use requirements would allow, irrespective of its current use.

Balancing Criteria

The site specific cleanup levels that have been calculated become the cleanup standard for the site (also known as the "point of departure"). The Superfund process then allows for these cleanup levels to be adjusted based upon a number of factors known as the "balancing criteria."²

These factors are evaluated through the Feasibility Study, and the cleanup levels adjusted as necessary. It is important to note, however, that under Superfund, ***the maximum amount that the cleanup levels may be adjusted for any reason is 100 fold***. So for a cleanup level that has been calculated to achieve less than one in one million increased cancer rate (1×10^{-6}), the maximum the calculated cleanup levels may be adjusted through the exercise of the balancing criteria is to achieve less than one in ten thousand increased cancer rate (1×10^{-4}). As such, a "risk range" of 10^{-6} to 10^{-4} is the standard risk range for carcinogens, and 10^{-6} is the risk range "point of departure" (the starting point in the exercise of the balancing criteria). Both of these standards are found in the National Contingency Plan (See 40 CFR 300.430(i)(A)(2)).

Other Critical Considerations

² Under Superfund, there are nine criteria to consider:

Two threshold criteria (both must be met)

1. Overall protection of human health and the environment
2. Compliance with Applicable, Relevant and Appropriate Requirements

Five balancing criteria (used to evaluate between potential remedies that meet threshold criteria)

3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility, or volume
5. Short-term effectiveness
6. Implementability
7. Cost

Two modifying criteria (information from public comment period that may modify remedial action)

8. State acceptance
9. Community acceptance

Under the Superfund processes, it is also important to note the functioning of two other primary considerations in the establishment of cleanup standards: background levels and limits of detection.

Background Levels

In some cases the calculated cleanup values, or the values that have been adjusted based on an application of the balancing criteria, are lower than background levels. The Superfund process does not require a site to be cleaned up to levels less than background levels. Under Superfund, it is recognized that background levels of contaminants of concern (the levels that would have been present if a release of chemical and radioactive contaminants had not occurred at the site) are a practical limitation on the cleanup of a site (See "Role of Background in the CERCLA Cleanup Program," U.S. EPA Office of Solid Waste and Emergency Response and Office of Emergency and Remedial Response, April 26, 2002, OSWER 9285.6-07P, p. 7).

Detection Limits

In some cases the calculated cleanup values, or the values that have been adjusted based on an application of the balancing criteria, are less than detection limits. The Superfund process does not require a site to be cleaned up to levels less than levels that can be measured. As a practical matter, it is impossible to clean up a site, or to require a site to be cleaned up, to a level that is less than that which can be measured.

Senate Bill 990

Senate Bill 990 (Kuehl, Chapter 729, Statutes of 2007) enacted provisions into California law specific to the Santa Susana Field Laboratory. There are several key provisions within SB 990 that become relevant to the above discussion and understanding of the Superfund process as it applies to the cleanup of the Santa Susana Field Laboratory.

Land Use Assumption

SB 990 requires that the cleanup standards for radioactive and chemical contaminants be based on "rural residential" land use assumptions (or based on "suburban residential" land use assumptions if those assumptions yield more protective standards). Based on this assumption, SB 990 further specifies the use of U.S.EPA's Published Preliminary Remediation Goals for radioactivity for the rural residential land use assumption, which are EPA's standardized values based on a risk of 1×10^{-6} .

Because the land use assumption is specified in statute, any option that would have the cleanup achieving less protective standards is not available. What this practically means is that there is no discretion to approve onsite disposal of contaminated soils that have not been treated to remove the contaminants, nor to approve cleanup proposals that would

leave contamination in place through the placement of institutional controls to restrict the land to a use that is inconsistent with SB 990.

Added Risk

SB 990 reiterates the Superfund process requirement that the risk values for all contaminants of concern at the site (both radioactive and chemical contaminants) must be added together.

State Superfund Process

SB 990 references and requires the use of existing Superfund requirements (discussed above) to establish the cleanup standards that are to be achieved at the Santa Susana Field Laboratory. The specific requirements of SB 990 would therefore be implemented through the State Superfund process.

Adjustment of Calculated Cleanup Values based on the Balancing Criteria

The cleanup levels calculations that are based on assumed land use, and specifically the land use specified under SB 990, yield allowable contaminant concentrations that are very low. This is to be expected for a land use of rural residential where the number of possible exposure pathways is large.

The Agreements in Principle rely upon an understanding of the cleanup value calculations based on the land use specified under SB 990, and the relationship between those calculated values and the background and detection limits for the contaminants of concern at the Santa Susana Field Laboratory. As noted above, under the Superfund process, ***the maximum amount that the cleanup levels may be adjusted is 100 fold***. There can be no adjustment of these values through the application of the balancing criteria or any other consideration. Based on an analysis of several of the known and highly ubiquitous contaminants of concern at the Santa Susana Field Laboratory, the anticipated background concentrations, and known limits of detection, are at levels that are either at or less protective than 1×10^{-4} , the maximum allowable departure from the required risk level of 1×10^{-6} . The following are a few specific examples of these contaminants and the relationship between their calculated values and background levels or detection limits³:

- 1) Cesium-137 – The U.S.EPA calculated Preliminary Remedial Goal for a 1×10^{-6} risk value for rural residential land use for Cesium-137 is 0.0012 pCi/g. The 1×10^{-4} risk value is

³ These examples are based on background values that have been reported in prior studies. The background values are being re-assessed through studies being conducted by both U.S.EPA (radiological contaminants) and DTSC (chemical contaminants).

0.12 pCi/g, which would be the highest allowable concentration for Cesium-137 under the Superfund process. The upper statistical limit for local background values for Cesium-137 has been measured as 0.21 pCi/g. In this case, for Cesium-137, which as recognized above the Superfund process does not require a site to be cleaned up to levels less than background levels, the background level would become the *de facto* cleanup level for the Santa Susana Field Laboratory.

- 2) Strontium-90 - The U.S.EPA calculated Preliminary Remedial Goal for a 1×10^{-6} risk value for rural residential land use for Strontium-90 is 0.00139 pCi/g. The 1×10^{-4} risk value is 0.139 pCi/g, which would be the highest allowable concentration for Strontium-90 under the Superfund process. The upper statistical limit for local background values for Strontium-90 has been measured as 0.11 pCi/g. In this case, for Strontium-90, which as recognized above the Superfund process does not require a site to be cleaned up to levels less than background levels, again the background level would essentially become the cleanup level for the Santa Susana Field Laboratory.
- 3) Arsenic - The calculated Risk Based Screening Level for a 1×10^{-6} risk value for rural residential land use for Arsenic is 0.0016 mg/kg. The 1×10^{-4} risk value is 0.16 mg/kg, which would be the highest allowable concentration for Arsenic under the Superfund process. The upper statistical limit for background values for Arsenic for the site has been measured as 15 mg/kg. In this case, for Arsenic, which as recognized above the Superfund process does not require a site to be cleaned up to levels less than background levels, again the background level would become the cleanup level for the Santa Susana Field Laboratory.
- 4) 2,3,7,8 TCDD (Dioxin) - The calculated Risk Based Screening Level for a 1×10^{-6} risk value for rural residential land use for Dioxin is 4.7×10^{-9} mg/kg. The 1×10^{-4} risk value is 4.7×10^{-7} mg/kg, which would be the highest allowable concentration for Dioxin under the Superfund process. The upper statistical limit for background values for Dioxin for the site has been measured as 5×10^{-7} mg/kg. In this case, for Dioxin, which as recognized above the Superfund process does not require a site to be cleaned up to levels less than background levels, again the background level would become the cleanup level for the Santa Susana Field Laboratory.

It is important to remember that the Superfund process requires that the risk values for all contaminants of concern at the site (both radioactive and chemical contaminants) must be added together, not viewed independently. Because the values for these ubiquitous contaminants of concern are already at or less protective than the 1×10^{-4} risk level, the additional risk from any other contaminant could only result in a total risk being even higher.

Because the summed risk is already at the maximum allowable risk threshold, there is no room to adjust the required cleanup levels further through the exercise of the balancing criteria.

As these examples illustrate, because SB 990 is protective and requires the cleanup standards that it does, background and laboratory limits will in most instances become default standards, and be protective only to the 1×10^{-4} level (as calculated based on the 1×10^{-6} calculated values for both radiological and chemical contaminants of concern (U.S.EPA calculated Preliminary Remedial Goals for radioactive contaminants and calculated Risk Based Screening Levels for chemical contaminants). Because these default standards are already at or less protective than the 1×10^{-4} level, there can be no additional adjustment of these values through the application of the balancing criteria. There is therefore no need to conduct additional analyses that are part of the “normal” Superfund process – the application of SB 990, and the Agreements in Principle, yield a result that is consistent with the anticipated outcome of the establishment of cleanup levels under the Superfund process.

Environmental Analysis in the Superfund Process

As a Lead Agency (the agency with principal responsibility for carrying out or approving a project), DTSC complies with the California Environmental Quality Act (CEQA) by conducting a preliminary environmental impact evaluation to determine if a project subject to its approval is statutorily or categorically exempt from CEQA, or if further environmental review in the form of an Initial Study is required. The Initial Study serves to 1) determine whether an Environmental Impact Report (EIR) or a Negative Declaration must be prepared; and/or 2) identify the significant environmental effects that must be analyzed in an EIR. Included in an preliminary environmental impact evaluation or an Initial Study is information that has been received from all resource related State agencies (e.g, California Department of Fish and Game or the State Historic Preservation Office, but not limited to these agencies)

In the course of evaluating and approving cleanups, DTSC is typically able to account for environmental impacts through the application of the balancing criteria or through the identification and planning for mitigation measures to limit or correct environmental impacts caused by the cleanup action. As discussed above, because a cleanup to background or detection limits as provided in the Agreements in Principle will yield a risk that is already at or less protective than the maximum 1×10^{-4} level, there can be no additional adjustment of these values through the application of the balancing criteria to account for impacts to the environment. In this case, for the cleanup of the Santa Susana Field Laboratory, the only available options to consider, and for which discretion exists for DTSC to exercise, is in the identification and implementation of methods to remediate soils to the background standard and to mitigate any anticipated environmental impacts of the cleanup.

DTSC will issue draft environmental documents and supporting data and information at the same time the draft Remedial Action Implementation Plan is made available. These documents will be required to contain detailed mitigation plans and modifications to correct damages caused by the cleanup activities.

Implementation Procedures: Questions/Comments and Responses

Several of the commenters that had specific questions or comments were focused on the procedural requirements to be followed in implementing the activities in the Agreements in Principle. A synopsis of these questions and comments is provided below, along with DTSC's responses.

Onsite Treatment

- Commenters were concerned about the volume of contaminated soil that may require removal, and asked that onsite bioremediation, soil vapor extraction and other onsite and in situ remedies be considered.

Response: The Agreements in Principle do not preclude the use of onsite bioremediation, soil vapor extraction, in situ remedies or other onsite treatment of soils to achieve the identified cleanup standards. Although it is impossible to know until the site is fully characterized whether any soils may be able to be addressed in this way, DTSC agrees that the use of these approaches has the potential to significantly reduce the amount of soil requiring excavation and offsite disposal. The final Administrative Orders on Consent make clear that the use of onsite bioremediation, soil vapor extraction, in situ remedies or other onsite treatment is allowed, and requires treatability studies to be done to assess their viability.

- Commenters asked whether the State had considered that vapors from volatile organic contaminants in groundwater and bedrock in certain areas of the site could migrate into backfilled soils and re-contaminate imported fill.

Response: DTSC has considered the possibility of vapor migration, and the final Administrative Orders on Consent will specify that the provisions of the Agreements in Principle apply to the contaminants that are present in the soil, not those that may migrate there through the transport of soil vapors from contaminated groundwater. These issues will be required to be addressed separately, through in situ and other on

site remediation techniques, and will be significant due to the extent of the contamination of groundwater from the volatile organic compound, trichloroethylene.

Coordination/Consultation with Other Regulatory Agencies

- Commenters noted that in addition to the federal Fish and Wildlife Service identified in the Agreements in Principle, the California Department of Fish and Game also needs to be consulted for impacts to state listed species, species of special concern and fully protected species, and for necessary mitigation requirements.

Response: Although the Agreements in Principle only reference federally endangered species as a possible exception to carrying out the described cleanup, DTSC recognizes the role and authority of the State Department of Fish and Game and intends to coordinate closely with the State Department of Fish and Game throughout the site characterization and cleanup process.

- Commenters noted that the likely cleanup actions could impact on or off-site intermittent, seasonal, or perennial streams, wetlands, or ponds, and that the California Department of Fish and Game should be consulted for appropriate review and mitigation measures.

Response: DTSC recognizes the role and authority of the State Department of Fish and Game and intends to coordinate closely with the State Department of Fish and Game throughout the site characterization and cleanup process.

- Some commenters asked that the input from specific stakeholders such as the California State Historic Preservation Office, State Parks and other local groups be solicited as the potential impacts of the cleanup process on resources are assessed.

DTSC recognizes that any cleanup action to be taken must be in accordance with all federal, state and local requirements. The final Administrative Orders on Consent will establish that requirement, and all federal, state and local government agencies with jurisdiction will be consulted throughout the site characterization and cleanup process.

- A commenter asked whether grading permits from Ventura County would be required for backfilling excavations.

Response: The final Administrative Orders on Consent will establish that requirement, and all federal, state and local government agencies with jurisdiction will be consulted throughout the site characterization and cleanup process.

- A commenter asked whether the Army Corps of Engineers would be consulted for permits for site cleanup in drainages?

Response: To the extent that the Army Corps of Engineers administers requirements that would apply to the site characterization and cleanup activities, DTSC will coordinate closely with the Army Corps of Engineers throughout the site characterization and cleanup process. The final Administrative Orders on Consent will establish that requirement, and all federal, state and local government agencies with jurisdiction will be consulted throughout the site characterization and cleanup process.

- Commenters noted that a cleanup to background conditions, if it does result in the impacts to sensitive California native wildlife habitat, must recognize and address both California and federal habitat protection laws and regulations.

Response: DTSC recognizes that any cleanup action to be taken must be in accordance with all federal, state and local requirements. The final Administrative Orders on Consent will establish that requirement, and all federal, state and local government agencies with jurisdiction will be consulted throughout the site characterization and cleanup process.

How is Background Determined?/Background Studies

- Some commenters expressed concern that the background studies that the Agreements in Principle rely upon are not yet completed.

Response: DTSC agrees that both background studies – U.S.EPA’s Radiologic Background Study and DTSC’s Chemical Background Study – are absolutely essential to implementing the approaches contained in the Agreements in Principle and are being prioritized to be completed as soon as possible.

- Commenters asked a number of questions related to the background standard referenced in the Agreements in Principle, ranging from how the background standards would be established, specific questions on the use of average values or upper statistical limits, and other questions related to details of the background studies themselves.

Response: The Agreements in Principle anticipate that the U.S.EPA and DTSC will be, through their respective Radiologic Background Study and Chemical Background Study, using appropriate statistical methods that are to account for the natural variations that are to be expected to be found in background. These statistical approaches are intended to avoid or significantly reduce the possibility of concluding that observed concentrations that are within expected background concentrations ranges are erroneously identified as contamination. In the coming months, both U.S.EPA and DTSC will be proposing Statistical Evaluation Plans that contain the statistical approaches to be employed, and the use of the derived background values as cleanup values will be addressed in those plans. DTSC suggests that comments related to these background calculations be directed toward those discussions.

Cleanup Levels and SB 990

- Several commenters expressed concern that the Agreements in Principle go beyond SB 990, and would result in excessive and unnecessary soils removal.

Response: As described in the discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments which describes the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria,” the Agreements in Principle are consistent and compliant with SB 990, and the amount of soil required to be remove or treated is consistent with what SB 990 would require.

- Several commenters expressed concern that the Agreements in Principle are not consistent with SB 990, and would result in a cleanup that is not stringent enough, or compliant with SB 990.

Response: As described in the discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments which describes the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria,” the Agreements in Principle are based on the application of risk based criteria and other cleanup procedures and policies.

DTSC believes that the clean up approach that is represented by the Agreements in Principle is one that is fully consistent and compliant with state and federal clean up laws and regulations (including SB 990).

- Several commenters expressed concern that that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle would result in the site becoming a “moonscape,” nearly guarantee that the site would be developed, presumably for housing..

Response: DTSC disagrees with the assumption that to accomplish a cleanup of the site and the process of correcting the environmental contamination will result in a “moonscape.” There is no doubt that the magnitude of environmental harm that Boeing, DOE, and NASA caused in the course of their operations is significant. Cleaning up the site will result in ancillary environmental impacts that DOE and NASA will need to mitigate, including plans to restore and rehabilitate the ecosystems. DTSC will consult and communicate with habitat and ecosystem experts to ensure that DOE and NASA’s restoration efforts are successful.

- Some commenters expressed their opinion that the cleanup described in the Agreements in Principle are excessive, and that the site should be cleaned up only to be protective for the land use they ultimately desire to see – open space and/or parkland.

Response: For purposes of implementing a cleanup of the Santa Susana Field Laboratory, DTSC must implement the provisions of SB 990, which mandates that the anticipated land use in establishing cleanup standards be assumed to be rural residential or suburban residential, whichever is more protective. Even absent SB 990, DTSC, in implementing its cleanup authorities, would defer to local governments’ land use plans and zoning decisions. In this instance, the Ventura County zoning maps specify that the site and much of the surrounding area are currently zoned as rural agricultural. Carrying out the cleanup specified in the Agreements in Principle is consistent with both SB 990 and with local land use decisions.

- Some commenters expressed concern about the use of the term “detection limits,” believing that the sensitivity of measuring instruments could make contaminants detectable at extremely low concentrations. The commenters expressed a preference for using method reporting limits as a more reliable standard.

The use of the term “detection limit” in the Agreements in Principle was intended as a generic term, because of the differences in the way radiological and chemical

constituents are measured in laboratories. The term will be more explicitly defined in the final Administrative Orders on Consent.

- A commenter asked whether less toxic contaminants (i.e., those that have “minimal toxicity”) could be handled differently, to prevent or reduce the amount of required cleanup and the likely impacts to the environment from the cleanup.

Response: The commenter provides no basis upon which to categorize any of the contaminants present at the site as lesser than or “minimal.” The toxicological principles and risk assessment approaches being applied in this case are as they are applied at other contaminated sites in California. The Agreements in Principle are based upon the application of risk assessment guidance and policies used at all other cleanup sites under DTSC’s jurisdiction.

- Commenters asked whether the Agreements in Principle would require the sampling and removal of bedrock at the site.

Response: As stated in the Agreements in Principle, they pertain only to the soils at the site. Contamination that exists in the bedrock and fractured bedrock is to be addressed separately through the 2007 Consent Order.

Cleanup Process

- Some commenters asked questions related to the cleanup process, and whether the Agreements in Principle followed the “normal” Superfund and CEQA processes.

Response: DTSC understands that the Agreements in Principle do not present to their readers how they follow “normal” processes in specifying the cleanup requirements found in them. Please see the discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments for the discussion of the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria.”

- Several commenters asked about risk assessments and the evaluation of alternatives, and why the Agreements in Principle did not require these elements which are part of the “normal” State and federal Superfund processes.

Response: The discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments describes the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria.”

DTSC believes that the clean up approach that is represented by the Agreements in Principle is one that is protective of human health and the environment and is fully consistent and compliant with state and federal clean up laws and regulations.

- Some commenters suggested that other “presumptive remedies” also be considered for cleanup of the Santa Susana Field Laboratory.

Response: Any presumptive remedy must be fully consistent and compliant with state and federal clean up laws and regulations. While there are a number of examples of other types of presumptive remedies, none other than those identified in the Agreements in Principle are consistent and compliant with state and federal clean up laws and regulations for this site.

Remedial Action Implementation Plan

- Some commenters noted that the Agreements in Principle made no mention of a requirement to backfill excavations made in removing contaminated soils, and asked whether backfilling would be required.

Response: The response to any particular excavation will be specified in the Remedial Action Implementation Plan, and could involve either backfilling, grading and countouring, or no action. Any proposal to backfill, regrade or re-contour excavation areas after the removal of contaminated soils will be detailed in the Remedial Action Implementation Plan.

- Commenters asked whether the Remedial Action Implementation Plan would be made available for public comment.

Response: The final Administrative Orders on Consent will establish the requirement that the draft Remedial Action Implementation Plan, along with all other workplans and reports, is to be shared with the community for public review and comment.

Limit on the Use of Exceptions

- Some commenters expressed concern that the exceptions are crafted too broadly and could create a “loophole” that could result in insufficient cleanup to occur.

Response: DTSC understands the concern being raised. However, the exercise of any of the proposed exceptions, including that for endangered species, in the implementation of any cleanup responsibility under the Agreements in Principle/final Administrative Orders on Consent, is intended to be limited in scope. DTSC expects that the endangered species exception may have limited application, and that endangered species issues will largely be addressed through the development and implementation of mitigation measures.

- Some commenters expressed their belief that the 5% cap on the use of any exceptions is an arbitrary limit and potentially insufficient to account for possible challenges to be encountered in the cleanup.

Response: DTSC believes the commenter is misinterpreting the Agreements in Principle. The 5% cap on exceptions refers only to the exercise of the exception related to circumstances where DOE or NASA desire to claim that cleaning up to the specified standards is not technically achievable. The other exceptions listed (limits of detection, protection of endangered species, and preservation of cultural resources) operate without limitation.

- Some commenters asked what the State's basis was for establishing the 5% maximum limit on the use of the exceptions to the cleanup to background standard.

Response: The commenters are misinterpreting the Agreements in Principle. The 5% cap on exceptions refers only to the exercise of the exception related to circumstances where DOE or NASA desire to claim that cleaning up to the specified standards is not technically achievable.

The basis and purpose for the 5% is the desire to practically limit the use of the exception for “other unforeseen circumstances but only to the extent that the cleanup cannot be achieved through technologically feasible measures.” Because the concept of technical feasibility is broad and largely undefined, there was significant concern that its use (and overuse) could negate the affect of the cleanup.

- Some commenters expressed concern that with the amount of historic Native American activities in the vicinity that there may be significant amounts of the site where artifacts

are found. Their specific concern was based on their impression that the 5% cap on the total soil cleanup volume for exceptions would be insufficient.

Response: DTSC believes the commenters misinterpreted the Agreements in Principle. The 5% cap on exceptions refers only to the exercise of the exception related to circumstances where DOE or NASA desire to claim that cleaning up to the specified standards is not technically achievable. The other exceptions listed (limits of detection, protection of endangered species, and preservation of Native American cultural resources) operate without limitation.

Disposal of Contaminated Soils

- Several commenters expressed concern that the DOE Agreement in Principle specified that soils contaminated with radioactive contaminants would be required to be disposed at a licensed low-level radioactive waste disposal site or an authorized low-level radioactive waste disposal facility at a DOE site

Response: Existing regulations require that these soils be disposed in this manner. DTSC is unaware of any requirement to engage in rulemaking activities that would be necessary to allow for legal disposal of these soils. DTSC and DOE negotiated this obligation on DOE's management of soils from the site.

Confirmation Sampling Protocol

- Some commenters expressed their belief that the application of the cleanup standard should not be as a "bright line" standard, and that the Confirmation Sampling Protocol should use area averaging as U.S.EPA does at other cleanups.

Response: DTSC has confirmed, through its discussions with U.S.EPA, that the use of "not to exceed" cleanup standards is a standard practice and has been used by U.S.EPA in a number of circumstance. The confirmation sampling protocol that was made available for public comment as well was developed by DTSC, DOE and U.S.EPA, and reflects an approach accepted by all three agencies.

- Some commenters noted that the Confirmation Sampling Protocol specifically referenced DOE, and that a similar document was not presented for NASA. They asked whether a similar protocol would be applied with NASA's cleanup under their Agreement in Principle.

DTSC intends to develop a similar confirmation sampling protocol that will apply to the federally-owned, NASA administered Areas I and II.

Available Soils for Backfilling

- Several commenters expressed doubt that there would be any replacement or backfill soils available that meet the cleanup standards in the Agreements in Principle.

Response: The concept of “background” recognizes that there are levels of radiological and chemical constituents that exist in nature and from man-made sources (such as atmospheric fallout) that are not from this site. Soils from other locations, to the extent that they are not impacted from industrial activities, by definition should meet the background standard.

Target Cleanup Date: 2017

- Some commenters expressed their belief that, because of the anticipated amount of contaminated soil and the requirement to remove it, the targeted cleanup date of 2017 could not possibly be achieved. Their preference is to modify the cleanup standards to allow “balancing” which could require less contaminated soil to be removed.

Response: This comment appears to be erroneously based on the premise that the outcome of the exercise of any available balancing criteria, in the context of the cleanup requirements for the site that are specified in State law (SB 990) as well as dictated by local land use decisions, would yield a result different than what is described in the Agreements in Principle. Please refer to the discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments for the discussion of the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria.”

In addition, the commenter presents an argument that the scope of the cleanup as described in the Agreements in Principle would extend the implementation of the cleanup beyond what may have otherwise been the case. DTSC disagrees, and believes that the Agreements in Principle, by condensing the oftentimes lengthy and contentious procedural processes, presents the only practical way by which the goal of

2017 may actually be met. Regrettably, the delays that have been presented by Boeing, DOE and NASA in negotiating revised agreements to implement State law standards has presented the most real challenge to achieving this date.

- More specifically regarding the target cleanup date of 2017, commenters asked how that date could be accomplished, and based their question on their own estimates of the volume of contaminated soils

Response: As to the projected cleanup completion date, the commenters are correct in their observation that accomplishing cleanup by that date is dependent upon actual soil volumes that will be detailed in the anticipated Remedial Action Implementation Plan. When characterization is complete, and that Plan is developed, schedules for implementation and completion will be presented.

The commenter presents an argument that the scope of the cleanup as described in the Agreements in Principle would extend the implementation of the cleanup beyond what may have otherwise been the case. DTSC disagrees, and believes that the Agreements in Principle, by condensing the oftentimes lengthy and contentious procedural processes, presents the only practical way by which the goal of 2017 may actually be met. Regrettably, the delays that have been presented by Boeing, DOE and NASA in negotiating revised agreements to implement State law standards has presented the most real challenge to achieving this date.

Administrative Orders on Consent

- Some commenters noted that the Agreements in Principle did not contain details of implementation that would help the public understand how the described cleanup would be accomplished. The AIP document is very vague in some instances needs to have an addendum once the public comments are collected and implemented in the body.

Response: DTSC agrees that the terms and provisions of the Agreements in Principle must be embodied in final Administrative Orders on Consent that specify implementation details to accomplish what they describe and to be enforceable. It is DTSC's intention to resolve remaining issues and reach agreement as quickly as possible so that the activities described in the Agreements in Principle can be implemented.

The Agreements in Principle will be made enforceable through final Administrative Orders on Consent. Many of the details of process, and definitions of key terms, will be contained in these documents.

- Some commenters asked about the timing of the process to reach an agreement and the expressed desire to sign agreements quickly, and a few offered their opinions on the motivation of the State and the federal agencies..

Response: The cleanup of the Santa Susana Field Laboratory (SSFL) in Ventura County, California has been a high priority for Governor Schwarzenegger for several years now. In 2007, he was instrumental in enacting SB 990, which requires the entire SSFL property to be cleaned up to stringent and protective standards. Because it has been three years since its passage, and staff from his regulatory agencies has spent countless hours negotiating with these responsible parties to secure their compliance with California's standards, it has become a priority to Governor Schwarzenegger that the requirements of SB 990 be realized during his administration.

- A commenter asked about the type of agreement anticipated between the State and DOE, since there was no mention of the type of agreement in its Agreement in Principle as there was in the NASA Agreement in Principle.

Response: DTSC is negotiating Administrative Orders on Consent with both DOE and NASA. DTSC insisted that any final agreement be binding and enforceable by the State on the federal parties. While there are a number of types of legal agreements that could accomplish this, the federal agencies desired to use an Administrative Order on Consent, which will contain provisions that allow DTSC to enforce them if necessary.

- A few commenters asked for another public comment period on the final agreements when they are developed.

Response: DTSC desires to formalize these requirements quickly in final Administrative Orders on Consent. DTSC received overwhelming support from the affected community to in support of the Agreements in Principle and to wrap up negotiations and sign enforceable agreements quickly. Because there has already been a 30 day comment period and the Agreements in Principle have remained unchanged, DTSC does not believe that an additional comment period is needed for the public to verify that issues that they identified have been resolved. However, DTSC also received a handful of requests to review the final Administrative Orders on Consent before they are signed, and DOE has requested that an additional comment period be offered to the public on the final Administrative Orders on Consent.

Because of these requests, DTSC will be providing an additional review period for the public to and to comment on any new issues raised by the final Administrative Orders on Consent.

- Some of the commenters asked that the background and characterization studies be completed before an agreement is entered.

Response: DTSC does not believe delay is warranted or necessary. State law requirements in SB 990 were enacted over three years ago. There is sufficient information available to know that cleanup is required, and establishing an enforceable relationship through the Administrative Orders on Consent is necessary to achieving that goal.

CEQA

- Some commenters expressed the belief that the Agreements in Principle do not properly consider and implement the California Environmental Quality Act (CEQA).

Response: The discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments describes the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes, and the exercise of discretion through the “balancing criteria.”

- Commenters asked how the potential impacts to natural and cultural resources by the cleanup would be evaluated and communicated to the public.

Response: At or near the same time that the draft Remedial Action Implementation Plan is developed and shared with the community for public review and comment, CEQA documents will also be developed that present the assessment of environmental impacts and proposed mitigation options.

NEPA

- A commenter asked how the federal court order that requires DOE to complete an EIS regarding the cleanup of Area IV affects the Agreement in Principle.,

Response: The final Administrative Order on Consent will contain provisions that address DOE’s outstanding court-ordered obligations and the need to coordinate

those responsibilities with the implementation of the activities described in the Agreements in Principle. DTSC is unaware of any outstanding court-ordered obligations that apply to NASA.

- Some commenters expressed concern that the NASA Agreement in Principle referenced the need to satisfy any National Environmental Policy Act requirements, concerned that it was being raised only to delay or dilute NASA's commitment to clean up.

Response: DTSC is sensitive to the concerns about delays which may result from duplicative or unnecessary processes being administered. DTSC has not been made aware of any applicable NEPA requirements that would pertain to NASA. DTSC is coordinating with NASA to identify any applicable NEPA requirements, to the extent they exist.

Concerns about Possible Consequences

Several of the commenters had questions that were focused on possible consequences of implementing the Agreements in Principle based on their understanding of the Agreements in Principle. A synopsis of these questions and comments is provided below, along with DTSC's responses.

Impacts on Habitat and Ecosystems

- Several commenters expressed concern that if the cleanup of the Santa Susana Field Laboratory were to be done according to the Agreements in Principle, and to SB 990 required levels, habitat and ecosystems would be destroyed.

Response: DTSC understands that to carry out the cleanup specified in the Agreements in Principle could result in significant removal of contaminated soils. It is regrettable that the actions of Boeing, DOE and NASA have resulted in contamination of the site to the extent that the volumes of soil requiring cleanup may be significant. It is also regrettable that the impacts of accomplishing the necessary cleanup may also be significant. DOE and NASA will need to identify, assess and mitigate any environmental impacts that result in the course of carrying out their cleanup responsibilities.

DTSC also recognizes that any cleanup action to be taken must be in accordance with all federal, state and local requirements. The final Administrative Orders on Consent will establish that requirement, and all federal, state and local government agencies with jurisdiction will be consulted throughout the site characterization and cleanup process. In addition, all plans and reports that will be developed in the implementation of final Administrative Orders on Consent will be made available for public review and comment.

Impacts on Native American Sites

- Several commenters expressed concern that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle could destroy the Native American artifacts and cultural landmarks on the Site.

Response: Native American cultural resources are accounted for and included as a possible exception to implementing the prescribed cleanup standard. Archeological and Native American experts will be consulted in characterizing and cleaning up the site.

Amount of Soil Requiring Removal

- Several commenters expressed concern and fear that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle, and to SB 990 required levels, would result in significant soil removal. Boeing asserted that it would require the removal of 1.6 million cubic yards of soil, which it claims is three times more soil would be removed than would be required for a cleanup to residential standards, and four times more soil than would be required for a cleanup to open space/recreational use standards.

Response: For purposes of implementing a cleanup of the Santa Susana Field Laboratory, DTSC must implement the provisions of SB 990, which mandates that the anticipated land use in establishing cleanup standards be assumed to be rural residential or suburban residential, whichever is more protective.

As for the estimates of contaminated soil, it is impossible to calculate the amount contaminated soils that could require removal at this time (although DTSC is aware that The Boeing Company has performed mathematical extrapolations based on a number of assumptions that may not be accurate – DTSC has not received a copy of any of Boeing’s actual calculations nor a complete explanation of the assumptions it

used in calculating its estimates). Based on comments from Boeing representatives, we know that they assumed that in situ treatment could not be used, that background values may have been based on averages rather than upper limits, and also assumed that soil vapor would cause the removal of soils. All of these inaccurate assumptions could greatly inflate any estimates of soil volumes.

DTSC understands that to carry out the cleanup specified in the Agreements in Principle could result in significant removal of contaminated soils. It is regrettable that the actions of Boeing, DOE and NASA have resulted in contamination of the site to the extent that the volumes of soil requiring cleanup may be significant. It is also regrettable that the impacts of accomplishing the necessary cleanup may also be significant. The arguments being raised by Boeing apply equally to any amount of contaminated soils to be removed, so it is unclear what Boeing's intentions are in raising them, other than as an indication of the magnitude of the environmental harm that Boeing, DOE, and NASA caused in the course of their operations, and as a preliminary indication as to the ancillary environmental impacts that Boeing, DOE, and NASA will need to mitigate in the course of carrying out their cleanup responsibilities.

Impacts on the Surrounding Community

- Several commenters expressed concern that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle, and to SB 990 required levels, would result in significant amounts of truck traffic on the surrounding community.

Response: DOE and NASA will need to identify, assess and mitigate any environmental impacts that result in the course of carrying out their cleanup responsibilities. The draft Remedial Action Implementation Plan must include a detailed soils management and transportation plan, and the accompanying CEQA documents must identify environmental impacts attributable to the transportation of soils and mitigation measures that are being proposed to mitigate those environmental impacts.

- Some commenters expressed concern about health impacts (and dispersion of contaminants) that could occur during the cleanup activities, and one even suggested halting work if winds are too strong.

Response: The draft Remedial Action Implementation Plan must include detailed health and safety requirements. DTSC will ensure that this type of restriction is included in the draft plan. The public will also have an opportunity to verify that

concerns such as this are addressed as they review the draft plan when it is released for public review and comment.

Impacts on disposal sites

- Several commenters had questions regarding where the contaminated soils removed from the site would be disposed, and expressed concerns about the impacts of that disposal on the communities where the disposal facilities are located.

Response: The Agreements in Principle specify that contaminated soils may only be disposed at sites authorized and appropriately permitted to receive those wastes. The draft Remedial Action Implementation Plan must include a detailed soils management and transportation plan, which will include specific destinations for the disposal of contaminated soils.

Available Soils for Backfill

- Some commenters expressed concern that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle could result in the removal of soils that would be replaced by backfill soils that could contain higher concentrations of contaminants than those being removed.

Response: According to the Confirmation Sampling Protocol, U.S.EPA will be responsible for developing a sample and analysis plan to verify that backfill/replacement soils are acceptable for use, irrespective of their source (onsite or offsite). In the development of the Confirmation Sampling Protocol, technical staff from DTSC, U.S.EPA, and DOE collaborated to develop procedures that could account for the various outcomes that could be anticipated.

DTSC believes that the procedures in the Confirmation Sampling Protocol, provide both structure to guide the decision-making as well as necessary flexibility. DTSC anticipates that the technical staff from both U.S.EPA and DTSC, in exercising their expertise and professional judgment, will successfully avoid what the commenter fears will be nonsensical outcomes. A similar protocol will be developed for use with NASA.

- Some commenters questioned whether any backfill soils exist that would meet the standards in the Agreements in Principle.

Response: DTSC sees no basis for this statement. The concept of “background” recognizes that there are levels of radiological and chemical constituents that exist in nature and from man-made sources (such as atmospheric fallout) that are not from this site. Soils from other locations, to the extent that they are not impacted from industrial activities, by definition should meet the background standard.

- Several commenters expressed concern about the use of onsite soils for backfill and restoration of excavated areas, believing it would result in the destruction of additional habitat on the site and increasing the negative impacts of the cleanup. Specific concern was expressed about the potential to use the largely undisturbed undeveloped land in the southern portion of the Site.

Response: The Confirmation Sampling Protocol included a discussion of the possible onsite sources of backfill soils for excavations, but does not create an authorization or approval to use any particular onsite location for this purpose. As with the entirety of the anticipated cleanup activities, excavation for borrowing soils will be subject to all applicable federal, state and local requirements and must receive necessary permits to proceed. DTSC anticipates that these federal, state and local requirements will provide the necessary checks and balances to assess the legality and appropriateness of any proposal for the use of soils borrowed from any location, including sites that may be within the Santa Susana Field Laboratory.

Other Cleanup Approaches

- One commenter suggested that the proposed cleanup to background should be used for surface soils, and higher, less protective standards used for deeper soils, an approach used at other sites in California.

Response: As described in the discussion in the section titled “Cleanup Process – Relationship with SB 990 and the Agreements in Principle” in this Response to Comments which describes the relationship between the Agreements in Principle and the operation of the federal and State Superfund and California Environmental Policy Act (CEQA) processes and the exercise of the “balancing criteria,” the Agreements in Principle are based on the application of risk based criteria. Boeing’s proposal to use institutional controls, however, is impossible to accommodate and remain in compliance with cleanup requirements for the site that are specified in State law (SB 990) as well as dictated by local land use decisions.

- One commenter suggested that a soil volume “cap” or limit be established that could be used to further limit the amount of cleanup, intended to mitigate the environmental impacts of excavation, reduce truck traffic and reduce air pollution.

Response: While the commenter is critical of the arbitrary nature of a 5% cap on the use of a specified exception to the required cleanup standard, in this instance they are proposing the establishment and use of their own arbitrary cap, and to use it to limit the amount of cleanup to be conducted. There is no precedent, and as best as DTSC can determine, no basis for such an approach. To establish such a cap would require that DTSC, the future users of the site and the community surrounding the site accept contamination remaining at the site. This proposal would be in direct conflict with cleanup requirements for the site that are specified in State law (SB 990) as well as dictated by local land use designations.

Cleanup Costs

- Several commenters expressed concern that cleanup of the Santa Susana Field Laboratory according to the Agreements in Principle would cost too much, and be unnecessarily expensive.

Response: DTSC understands that the costs associated with all of the required characterization and cleanup activities at the Santa Susana Field Laboratory will be significant. It is regrettable that the actions of Boeing, DOE and NASA have resulted in contamination of the site to the extent that the volumes of soil requiring cleanup may be significant. It is also regrettable that the impacts and costs of accomplishing the necessary cleanup may also be significant.

Delay Pending More Information

- Several commenters suggested that deciding to proceed with the Agreements in Principle should wait until site characterization and the radiological and chemical background studies are completed. In the meantime, they suggest, work could continue under the 2007 Consent Order, including scheduling removal actions in highly contaminated areas.

Response: While work has been and continues to progress under the terms and conditions of the 2007 Consent Order, the resolution of, and DOE, NASA and Boeing’s acceptance of, the cleanup standard required by State law is becoming more and more critical. Investigation and sampling efforts to date, and measurements made,

are insufficiently sensitive to be able to achieve State law standards. The more work that is completed to these less sensitive standards, the more work will be required to be repeated at some later point. All of these insufficient measurements will comprise a data gap that is growing ever larger with each incomplete work product delivered.