Department of Toxic Substances Control

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Response to Comments
(March 16, 2009)

CORRECTIVE ACTION COMPLETE DETERMINATION
CHLOROFORM RELEASE AREA

Hitachi Global Storage Technologies, Incorporated
Redevelopment Property
5600 Cottle Road
San Jose, California 95193
EPA Id. No. CAR000128793

Background

Public Participation Activities:

The Department of Toxic Substances Control (DTSC) issued the public notice for the proposed corrective action complete determination for the Chloroform Release Area at the Hitachi Global Storage Technologies, Inc. (Hitachi GST) Redevelopment Property on January 14, 2009. A display advertisement was placed in the San Jose Mercury News published on January 14, 2009, announcing the public comment period and the public hearing on January 29, 2009. A radio announcement was broadcast 4 times on January 14, 2009, on radio station KEZR (FM 106.5). A fact sheet with information about the project and public participation activities was mailed on January 9, 2009, to approximately 6,900 addresses on the facility mailing list. A public hearing was held on January 29, 2009, at the Southside Community Center, 5585 Cottle Road, San Jose. The public hearing was attended by approximately 23 people (not counting DTSC staff) including 8 members of the general public and a representative for PCCP Signature San Jose, LLC, the prospective purchaser of the Hitachi GST Redevelopment Property. The comment period ran from January 14, 2009, through February 13, 2009. Document repositories were set up at the Edenvale Branch Library in San Jose and at the DTSC office in Berkeley.

Written comments concerning the proposed corrective action complete determination for the Chloroform Release Area were received from Mr. Jason Jegge, San Jose resident, on January 16, 2009, and from Mr. Michael Ghielmetti, President of Administrative Member, PCCP Signature San Jose, LLC on February 13, 2009.

California Environmental Quality Act (CEQA):

DTSC prepared an Initial Study, dated August 29, 2007, and a final Negative Declaration, dated November 26, 2007 to evaluate potential environmental effects associated with implementation

of the selected corrective action remedy (2-PhaseTM Extraction) for the Chloroform Release Area. DTSC found that the proposed corrective action project would not have a significant effect on the environment. DTSC prepared an Addendum to the Negative Declaration, dated January 14, 2009, to evaluate the potential effects of changes to the project as implemented. DTSC determined that the project as implemented would not have a significant effect on the environment.

Other Statements and Documents Received During Public Comment Period

During the public hearing on January 29, 2009, Mr. Stuart Block, from Cox, Castle & Nicholson, LLP, made the following verbal statement:

> "My name is Stuart Block. I'm here tonight on behalf of PCCP Signature San Jose, LLC. And I just wanted to register our appearance here tonight and also let DTSC know that we will be submitting written comments prior to the close of the comment period. Thank you."

DTSC acknowledges this statement and has no further response.

During the public comment period DTSC also received the following documents concerning the Chloroform Release Area project:

1. "Re: Response to Comments, January 9, 2009 S. S. Papadopulos & Associates Letter to Stuart I. Block of Cox, Castle, & Nicholson LLP, Chloroform Release Area at Former Building 028J ("Lot 8")," Elizabeth Zimmermann, Manager Environmental Programs, Hitachi GST, January 16, 2009, with attachment:

   > "Re: Response to Comments, January 9, 2009 S. S. Papadopulos & Associates Letter to Stuart I. Block of Cox, Castle, & Nicholson LLP, Chloroform Release Area at Former Building 028J ("Lot 8")," Anne W. Gates, P.E., Senior Manager, and Robert L. Powell, Ph.D., Principal, ENVIRON International Corporation, January 16, 2009.

2. "Re: 5600 Cottle Road – Final Remedy Completion Report and December 2008 Sample Report, Chloroform Release Area, Redevelopment Property, Hitachi Global Storage Technologies, Inc.," Stuart I. Block, Cox, Castle & Nicholson LLP, January 21, 2009.

3. "Subject: EKI Rebuttal to Environ's Response-to-Comment Letter, dated 26 November 2008, Regarding EKI's Observations during Hitachi's Soil Gas Sampling at the Former Building 028J Chloroform Remediation Area, 5600 Cottle Road, San Jose, California (EKI A50005.00)," Michelle K. King, PH.D., Vice President, and Bruce E. Castle, P.G., Project Geologist, Erler & Kalinowski, Inc., February 12, 2009.

Document #1 is a response by Hitachi GST to comments from Signature concerning the December 2008 Sampling Report. This document does not directly comment on DTSC's

proposed corrective action complete determination and thus DTSC is not providing a response in this Response to Comments document. However, Document #1 is part of the Administrative Record for DTSC's final decision.

In Document #2 Signature's representative asks DTSC a procedural question concerning administrative remedies available to Signature to challenge DTSC's proposed corrective action completed determination. DTSC agrees that no additional administrative remedies are available and no response to Document #2 is required.

Document #3 is Signature's rebuttal to Hitachi GST's response to Signature's comments concerning soil gas sampling. This document was included as Attachment 9 in Mr. Michael Ghielmetti's February 13, 2009 comment document. See DTSC's responses to Section B. of Signature's February 13 letter (Comment 4 below).

Comments Received and Responses to Comments

The following comments concerning the proposed corrective action complete determination for the Chloroform Release Area were received during the public comment period. In this Response to Comments (RTC) document, DTSC hereby responds to these comments as follows.

Mr. Jason Jegge, 345 Henderson Drive, San Jose, California 95123. E-mail to Mr. Paul Ruffin, DTSC, on January 16, 2009.

Comment 1: Risk to Drinking Water Sources

"I am a resident near this site, and received the Fact Sheet for January 2009. Thank you for this - and I only had one concern/question: Can any of the contaminated groundwater reach potential drinking water sources?"

DTSC's Response to Comment 1:

The chloroform contamination will not reach any existing drinking water supply wells. The chloroform detected in the B-aquifer immediately beneath the original release area was measured to be present at low levels considered to be safe. The residual chloroform in the overlying A-aquifer and A/B-aquitard is expected to slowly move into the B-aquifer underlying the contaminated source area, but the chloroform concentrations in the B-aquifer are expected be less than the drinking water standard and safe to drink. The B-aquifer chloroform concentrations are expected to remain low because the slow rate of chloroform moving through the A/B-aquitard mixes into the fast moving B-aquifer and is diluted.

The B-aquifer is a potential drinking water resource, but there are no drinking water supply wells in the vicinity of the chloroform contamination. Drinking water supply wells are routinely tested for organic contaminants such as chloroform.

Mr. Michael Ghielmetti, President of Administrative Member, PCCP Signature San Jose, LLC, letter dated February 13, 2009.

Comment 2: Duration of Public Comment Period

[February 13, 2009 cover letter, 3rd paragraph.]

"In addition to the enclosed comments, PCCP-Signature notes that the 30-day public comment period provided by DTSC for the proposed Determination is significantly less than the 45-day public comment period required for such determinations. See Department of Toxic Substances Control Public Participation Manual (October 2001) Chapter 4, Page 32. PCCP-Signature objects to DTSC's decision to abbreviate the public comment period, especially in light of the complexity of the issues involved and the significance of the Determination."

DTSC's Response to Comment 2:

The assertion is incorrect that DTSC is required to hold a public comment period for a particular duration and that DTSC has abbreviated a required time period. DTSC's Public Participation Manual provides guidance only, and DTSC has the discretion to vary from its recommendations. DTSC has reviewed the Public Participation Manual, Resource Conservation and Recovery Act (RCRA) regulations and guidance documents, and relevant State statutes and regulations and finds that none of them require DTSC to hold a 45-day public comment period for a corrective action complete determination. DTSC regulations (Cal. Code Regs., tit. 22, § 66271.9) require the 45 day comment period for draft permit decisions only. Corrective action complete determinations are more analogous to Closure Plan Approval (Cal. Code Regs., tit. 22, § 66265.112(d)(5)), and Remedial Action Plan (RAP) approval under chapter 6.8 of the Health and Safety Code. The required public comment period for approval of closure plans and RAPs is 30 days. Thus, DTSC decided to hold a 30-day public comment period for the proposed corrective action complete determination for the Chloroform Release Area. PCCP Signature San Jose, LLC (Signature) is the only member of the public with significant concerns about the proposed decision. We believe the 30-day public comment period has been adequate in light of the fact that Signature and its representatives have (a) been intimately involved in the process since late August 2008; (b) met in-person with DTSC at least three (3) times; (c) reviewed and commented on numerous reports and other documents prepared by DTSC, Hitachi GST and its consultants; and (d) regularly communicated with and received updates from DTSC prior to the proposed decision. No member of the public requested an extension of the 30-day public comment period and Signature provided its comment package within that time frame.

Comment 3: Introduction

[February 13, 2009 letter, Section A.]

"In its Statement of Basis, DTSC claims that its "long-standing practice" is to measure the attainment of cleanup goals by "taking actual measurements" of the affected media. Despite this claim, DTSC repeatedly violates its stated practice by ignoring the actual data showing

Hitachi has not achieved cleanup standards and instead relying on technical theories that either are not supported by or are directly contrary to the "actual measurements." In every instance where actual sampling could prove or disprove Hitachi's tenuous theories, DTSC has chosen not to request such sampling.

"While expressly finding that Hitachi has not complied with the drinking water standards required by its own Negative Declaration and California law, DTSC claims that such compliance is "not necessary." In so doing, DTSC directly and unambiguously violates the Porter-Cologne Act, the Basin Plan, California regulations, and the Regional Water Quality Control Board's Site Cleanup Requirements for the property, all of which are binding on DTSC. DTSC's unsupported assertion that drinking water standards have been achieved "to the extent practicable" does not excuse its obligation to enforce the standards, and in any event is directly contrary to all the site data.

"In addition, DTSC's proposed approval of the remediation also violates CEQA. As a responsible agency specifically identified as part of the Project EIR, DTSC is legally obligated to assess its determination in the context of that EIR. Because the chloroform contamination at Building 28J was not identified or evaluated in the Project EIR, a subsequent EIR must be prepared to evaluate the chloroform impacts. DTSC's attempt to address these issues through an Addendum to the Negative Declaration violates California law.

"In its haste to certify the corrective action as complete before there is actual data to support this finding, DTSC has violated its own policies, violated state law, and abandoned any pretence of objective, scientific evaluation or protection of human health and the environment. Lacking sufficient legal or technical basis for its actions, DTSC appears intent on managing the chloroform remediation in a manner to maximize Hitachi's private, commercial interests. Such actions are contrary to DTSC's statutory mandate to apply sound scientific principles to protect public health and the environment."

DTSC's Response to Comment 3:

Signature asserts: (a) DTSC violates a longstanding practice by ignoring actual data and relying on unsupportable theories; (b) DTSC has not requested necessary sampling; (c) by finding corrective action is complete, DTSC is violating various laws and plans that govern water quality; (d) DTSC is violating CEQA; and (e) in haste and in order to maximize Hitachi GST's private, commercial interests, DTSC actions violated its obligation to apply sound scientific principles to protect public health and the environment. DTSC responds as follows.

(a) In addition to historic site information, DTSC has relied on data collected since November 2005 and sound technical and scientific approaches in order to reach its decision. (See the technical and scientific data, reports, letters, memoranda and other documents in the Administrative Record, incorporated herein by reference, and Responses to Comments 6 through 15.)

(b) DTSC has requested necessary and adequate sampling in order to reach its decision (See technical and scientific data, reports, letters, memoranda and other documents in the Administrative Record, incorporated herein by reference, and Responses to Comments 6 through 15).

(c) DTSC's decision does not violate any laws, plans, orders or policies that govern water quality. Also, the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) concurs with DTSC's decision (See March 4, 2009 letter, with RWQCB concurrence, incorporated herein by reference, and Response to Comment 5.)

(d) DTSC has complied with CEQA. (See CEQA documents in the Administrative Record for this decision, incorporated herein by reference, and Response to Comments 16 through 22).

(e) DTSC has applied sound scientific principles to protect public health and the environment. (See DTSC's technical letters, memoranda and other documents in the Administrative Record, incorporated herein by reference, and Responses to Comments 6 through 15). DTSC has provided project oversight on a weekly basis since project inception. The project team consists of experienced, senior staff, including Professional Geologists, Professional Engineers, toxicologists, attorneys, and planners. This project began over four (4) years ago. There has been no "haste" on this project, only the efficiency made possible by a dedicated, knowledgeable team. During its final decision-making process, DTSC consulted with the RWQCB and an internal peer review was conducted by a Professional Geologist/Certified Hydrogeologist, who is one of DTSC's experts in vapor intrusion assessments. DSTC was generally unaware of contractual issues related to the property transfer until they were raised by Signature after August 2008. DTSC has conducted this remediation project and the corrective action complete determination with the goal of protecting public health and the environment and strongly objects to Signature's assertions to the contrary.

Comment 4: DTSC Has Failed to Provide Substantive Responses to Significant Prior Technical Comments

[February 13, 2009 letter, Section B]

"Signature has submitted numerous technical comments on the issues raised by DTSC's proposed determination. To date, DTSC has provided no substantive or independent response to the overwhelming majority of these comments. In a January 9, 2009 memorandum from DTSC's Geological Services Unit, for example, DTSC refuses to provide any response to numerous comments, on the specious ground that they were not signed by a licensed consultant. With respect to most other comments, DTSC provides no substantive response, and merely adopts by reference Hitachi's responses. For the few comments for which DTSC does attempt to provide a response, DTSC largely rejects Signature's comments in conclusory fashion, without providing any technical analysis.

"Consistent with its Public Participation Manual, DTSC has provided public notice of its proposal to certify the corrective action as complete. Also consistent with the Public Participation Manual (Chapter 6, Section H), DTSC must prepare written responses to each and every comment offered by Signature. Given DTSC's failure to provide any such responses in the past, Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- *Erler & Kalinowski, Inc. (EKI),* ***Concerns Associated With the Potential Shutdown of the 2-Phase Extraction System at Former Building 028J****, August 28, 2008, Attachment 1.*
- *S.S. Papadopulos & Associates (SSPA),* ***Comments on Modeling Report (Executive Summary with Slides)****, October 13, 2008, Attachment 2.*
- *EKI,* ***Observations During Hitachi's Soil Gas Sampling at the Former Building 028J Chloroform Remediation Area,*** *October 28, 2008, Attachment 3.*
- *SSPA,* ***Groundwater Sampling Protocol****, October 29, 2008, Attachment 4.*
- *SSPA,* ***Comments on Environ Response to SSP&A Presentation of November 3, 2008****, November 11, 2008, Attachment 5.*
- *SSPA,* ***Critical Review of Risk-Based Target Concentration (RBTC) Determinations for Hitachi, Building 028J Site****, November 18, 2008, Attachment 6.*
- *Signature Properties,* ***Comments on Hitachi Completion Report****, December 4, 2008, Attachment 7.*
- *SSPA,* ***Comments Regarding Environ Sampling****, January 9, 2009, Attachment 8.*
- *Erler & Kalinowski, Inc. (EKI),* ***Rebuttal to Environ's Response-to-Comment Letter, dated 26 November 2008, Regarding EKI's Observations during Hitachi's Soil Gas Sampling at the Former Building 028J Chloroform Remediation Area, 5600 Cottle Road, San Jose, California****, Attachment 9.*

"In addition, Signature provides the following additional comments on DTSC's proposed action. These comments are either entirely new, or incorporate newly-available information in support of prior comments. Accordingly, Signature looks forward to receiving DTSC's substantive to response to each of its previous and new comments."

DTSC's Response to Comment 4:

Signature's comment is inaccurate and misleading for the following reasons. Prior to issuing the proposed corrective action complete determination, DTSC read and considered the numerous technical comments from Signature and the responses to these comments by Hitachi GST, which are part of the Administrative Record for the project. The exchanges between Signature and Hitachi GST are part of an ongoing contractual dispute for the purchase of the Hitachi GST-owned Redevelopment Property. DTSC was not required to respond to Signature's prior technical comments, but DTSC did consider all of them and DTSC responded in writing to many of them. For example, in a Geological Services Unit (GSU) memorandum dated January 23, 2009, DTSC substantively responded to Signature's December 4, 2008 letter, concerning the Final Remedy Completion Report and Signature's letter dated January 9, 2009, concerning the

December 2008 Sampling Report. DTSC's references to documents prepared by Hitachi GST's consultant ENVIRON International Corporation (Environ) does not mean that DTSC failed to exercise its own independent judgment nor does it mean the substance of DTSC's responses was deficient. In many of its responses, DTSC also referenced peer reviewed and published academic studies, which further supported DTSC's substantive responses.

The GSU memorandum dated January 9, 2009, is an analysis of the Final Remedy Completion Report and the December 2008 Sampling Report. This memorandum was not intended to be a response to Signature's comments and thus did not refer to them. The GSU memorandum dated January 23, 2009[1], simply notes that Signature's December 4, 2008 comments on the Final Remedy Completion Report did not identify the author or include the signature of a licensed professional engineer or geologist documenting registered professional supervision. In similar situations where technical engineering or geologic interpretations are submitted for regulatory review, the GSU verifies that a licensed professional engineer or geologist is responsible for interpretations of geologic information that fall within the practice of geology[2]. This is done to comply with the California Business and Professions Code 7835. The code states that geologic plans, specifications, reports, and documents be signed by a registered Professional Engineer or Professional Geologist. The registered professional, by signing and providing his or her registration number, takes responsibility for the engineering design contents of the report or design document. Thus, for the January 23 memorandum, GSU simply noted the absence of such information in some of Signature's December 4, 2008 comments. The same January 23, 2009 GSU memorandum identifies the various exhibits attached to Signature's comments that <u>are</u> signed by a professional engineer or geologist. Contrary to the assertion in Signature's comment, DTSC's January 23, 2009 memorandum never claims that GSU was refusing to provide responses because of the absence of a signature by a licensed consultant in Signature's December 4, 2008 submittal. The GSU memorandum identified four general categories (topics) addressed in Signature's December 4, 2008 and January 9, 2009 documents, including their exhibits, and GSU's memorandum carefully responded to them.

DTSC is following its Public Participation Manual by preparing responses to comments relevant to the proposed corrective action complete determination. DTSC is not obligated to respond to "each and every comment offered by Signature" regardless of its relevance to the proposed determination. DTSC's Public Participation Manual, Chapter 6, Section H, says in part, "The response must: … Briefly describe and respond to all significant comments on the draft permit or draft RAP raised during the public comment period or during any hearing; …" The Exhibits listed in Signature's February 13, 2009 comment letter include letters and other submittals that have been superseded by later evaluations and interpretations of post-remediation data collected in October and/or December 2008. Signature's Attachments also include rebuttals to Hitachi GST's responses to Signature's previous comments. Signature's previously submitted rebuttals generally do not add new information relevant to DTSC's proposed determination, but are simply argumentative. Thus, some of these older submittals are now either obsolete or not relevant and significant.

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[1] The first paragraph in Discussion Section B. "Signature's Final Remedy Report Comments."
[2] California Business and Professions Code, Division 3, Chapter 12.5, Section 7800 *et seq*.

Consistent with DTSC's Public Participation Manual, DTSC is responding to Signature's previous comments that are still relevant to the proposed determination. DTSC has reviewed the Attachments listed in Signature's February 13, 2009 comment letter in order to identify all comments relevant to the proposed corrective action complete determination and has prepared responses to these comments. DTSC's responses to older comments are either incorporated into our responses to Signature's "new" comments submitted February 13, 2009, or are separately identified in this Response to Comments document (see Comments 23 to 31).

In conclusion, DTSC was not obligated to respond to all of the documents Signature submitted prior to the public comment period that started on January 14, 2009. Nonetheless, DTSC responded to many of Signature's documents submitted prior to or toward the beginning of the public comment period. Additionally, consistent with DTSC's public participation policies, DTSC is responding to all relevant comments that have been submitted by Signature.

Comment 5: DTSC's Proposed Addendum to the Negative Declaration Violates California Law [Failure to Restore Groundwater to Drinking Water Standards Is Contrary to California Law]

[February 13, 2009 letter, Section C.1]

"In its statement of decision, DTSC finds that Hitachi has failed to restore groundwater to drinking water standards and makes no finding that drinking water standards will ever be achieved. DTSC nonetheless proposes to find the cleanup is complete, on the grounds that remediation of chloroform in groundwater to drinking water standards is neither necessary nor "practicable." As explained in further detail below, DTSC's purported finding is not supported by ***any*** *evidence, much less substantial evidence. More fundamentally, however, DTSC's refusal to enforce drinking water standards is contrary to California law.*

"Restoration of groundwater is governed by numerous state laws, regulations and orders, all of which prohibit the action DTSC proposes. The Porter Cologne Act requires the State Water Resources Control Board ("Water Board") and the Regional Water Quality Control Boards ("Regional Board") to adopt water quality control plans. See California Water Code Section 13141. The Water Quality Control Plan for the San Francisco Bay Basin ("Basin Plan") applies to water resources throughout the Bay Area, including the Hitachi site.

"Under the Basin Plan Section 2.2.2, all groundwater is considered suitable for municipal or domestic water supply, unless the Regional Board finds that a specific exception applies. Section 3.4 of the Basin Plan provides a goal of "background" levels of contaminants for all groundwater (i.e. no man-made contaminants). Section 3.4.2 further provides that, "[a]t a minimum, groundwater designated for use as domestic or municipal supply shall not contain concentrations of constituents in excess of the [MCLs]."

"With respect to remediation of contaminated groundwater, the Basin Plan requires cleanup to either MCLs or a more restrictive level based on risk assessment (Section 6.25.2.3). In this

respect, the Basin Plan implements the Water Board's long-standing policy, as adopted in Resolution No. 68-16 ("Statement of Policy With Respect to Maintaining High Quality Water in California") and No. 92-49 ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). Similarly, under 23 CCR 2550.4, the cleanup levels for contaminated groundwater may be greater than background only upon a showing that achieving background levels is not technical and economically achievable. But in no event may a cleanup level be less stringent than the MCLs. 23 CCR 2550.4(e). Thus, as a matter of law, MCLs constitute the absolute minimum requirement for cleanup of groundwater.

"The Regional Board confirmed this legal requirement in its 2002 Site Cleanup Requirements Order ("SCR") for the Hitachi site. In the SCR, the Regional Board expressly finds that groundwater at the site is designated for municipal and domestic water supply and is a potential source of drinking water. The Regional Board further found that cleanup of the shallow aquifer to background levels "probably cannot be technologically or economically achieved." As a result, the Regional Board required remediation of the shallow aquifer to MCLs, finding such levels consistent with the Basin Plan and 23 CCR 2550.4.3

"DTSC's refusal to enforce MCLs therefore directly conflicts with the Porter Cologne Act, the Basin Plan, California regulations, Regional Board policy, and the SCRs. DTSC is bound by all of these laws, regulations and policies, and DTSC has no authority to alter or amend them. Simply put, no cleanup can be certified as complete, unless and until it has achieved the MCLs, as an absolute minimum. Recognizing this requirement, DTSC originally had required cleanup of groundwater to the MCLs in its Negative Declaration for the chloroform remediation. DTSC's current proposal to authorize residual contamination in excess of MCLs directly violates state law."

DTSC's Response to Comment 5:

To summarize, Signature asserts that (a) DTSC cannot legally determine that corrective action is complete unless and until the MCL for chloroform is met and that DSTC's decision would violate the Porter Cologne Act, the Basin Plan, State Water Resources Control Board (SWRCB) policies and orders issued by the Regional Water Quality Control Board, San Francisco Bay (RWQCB); (b) the Negative Declaration required achievement of the MCL, and (c) DTSC changed the standard to require achievement of the MCL "if practicable" and to allow residual chloroform contamination in groundwater in excess of the MCL. [Note: the heading of this section references DTSC's Addendum to the Negative Declaration, but the text of the comment does not seem to mention the Addendum.]

DTSC responds below.

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[3] Under Water Board Resolution No. 92-49, where cleanup to MCLs is not technically and economically feasible, the responsible party may apply to the Regional Board to establish a "containment zone." Among other things, establishment of a containment zone requires evaluation of a host of factors DTSC has not considered, and also requires a plan for ensuring that contaminated water does not migrate and for long-term monitoring.

(a) DTSC can legally determine that corrective action is complete even if the MCL of 80 ug/L for chloroform in groundwater has not been met at all wells. DTSC's decision is consistent with relevant water laws and regulations, decisions by the SWRCB, and orders issued by the RWQCB. (See cases and other decisions cited in Response 6 below, incorporated herein by reference.) Further, the RWQCB is aware of and concurs with DTSC's decision. (See March 4, 2009 letter to RWQCB with March 9 concurrence by RWQCB. (For further discussion and response, see Responses to Comments 6 and 8, incorporated herein by reference.)

(b) The Negative Declaration did not place requirements on the project, which is installation and operation of the vapor extraction system. The Negative Declaration, relying on the Initial Study, summarized requirements imposed by the Corrective Measures Study (CMS) and it evaluated environmental impacts. The Initial Study evaluated potential environmental impacts of the project and found that the project did not have the potential for significant impacts on the environment. The Initial Study incorporated the CMS by reference. Section 5 of the CMS states that the corrective action objective (CAO) (also referred to as "cleanup goal") for groundwater is *"to the extent practicable",* meet the Risk Based Target Concentration (RBTC) of 380 ug/L for groundwater and *"to the extent practicable*", meet the MCL of 80 ug/L. The Initial Study states that "The extraction system will be operated *to the extent practicable,* until the cleanup goals are met." (For further discussion see the Statement of Basis and the Addendum to the Negative Declaration.) Section 5 of the CMS also stated that "The overall CAO for the former building 028J is to prevent exposure of future occupants to elevated concentrations of chloroform in soil, soil gas, and groundwater." Both the Initial Study and Negative Declaration discussed this goal.

(c) DTSC did not change standards. DTSC adhered to the standards that were established in Section 5 of the 2007 CMS Report and incorporated into the Initial Study and Negative Declaration. The Updated Final Statement of Basis dated January 14, 2009 and the Addendum to the Negative Declaration explained that the RBTC for groundwater had been met and they explained why it is not practicable to meet the MCL of 80ug/L for groundwater. Thus, both documents found that the CAO (cleanup goal) for groundwater had been met and that the overall clean-up goal for the project had been met. (For further discussion and on practicability of meeting the MCL, see Response to Comment 6 below.)

Comment 6: DTSC Has Failed to Properly Evaluate Feasibility of Achieving MCLs

[February 13, 2009 letter, Section C.2.a.]
"Even if DTSC legally could decline to enforce the MCLs, DTSC has offered no technical basis for doing so here. According to DTSC, remediation of groundwater to MCLs is not practicable. Evaluation of practicability is governed by Water Board Resolution No. 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304). This policy is binding on DTSC. Cal. Water Code Section 13146.

"Under Section III.H.1 of Resolution No. 92-49, assessing practicability requires a determination of "whether water quality objectives can reasonably be achieved within a reasonable period by considering what is technologically and economically feasible . . . " The policy goes on to describe in detail this evaluation process:

- *"Technological feasibility is determined by assessing available technologies, which have been shown to be effective under similar hydrogeologic conditions in reducing the concentration of the constituents of concern. Bench-scale or pilot-scale studies may be necessary to make this feasibility assessment;"*
- *"Economic feasibility is an objective balancing of the incremental benefit of attaining further reductions in the concentrations of constituents of concern as compared with the incremental cost of achieving those reductions. The evaluation of economic feasibility will include consideration of current, planned, or future land use, social, and economic impacts to the surrounding community including property owners other than the discharger. Economic feasibility, in this Policy, does not refer to the discharger's ability to finance cleanup. . . ."*

"EPA's guidance likewise requires consideration of a host of engineering, economic and safety factors in determining whether it is technically impracticable to achieve cleanup standards. Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action, U.S. EPA (2004), Chapter 12.

"DTSC has not even attempted to perform any evaluation of technical or economic feasibility of achieving MCLs. Instead, DTSC bases its determination on the following claims:

1) Chloroform mass concentration in extracted soil gas reached an asymptotic level during continuous and pulsed modes so that continued operation of the extraction system is no longer justified;

2) The small amount of chloroform remaining in the subsurface is primarily bound in the A/B Aquitard below the A-Aquifer. It is not necessary to remove this residual mass of chloroform in this aquitard, because it does not significantly affect the chloroform concentrations in either the A-Aquifer or B-Aquifer;

3) There is no public health-based reason to achieve the drinking water MCL at this site because of a recorded covenant prohibiting use of shallow water as drinking water. See DTSC Negative Declaration Addendum, Hitachi Global Storage Technologies, Inc., Chloroform Release Area ("Negative Declaration Addendum"), at p. 6. None of these claims provides any basis for DTSC's findings.

"First, the fact that chloroform mass extracted by the remediation system had reached "asymptotic levels" actually proves the effectiveness of the ongoing remediation. As Hitachi itself reported and DTSC agreed, the remediation system consistently and persistently removed significant chloroform mass from the subsurface during all periods of its operation. For several

months prior to shutdown, the remediation system removed .05 pound of chloroform per week, with mass removal rates declining only slightly over this time. Attachment 7, Ex. K. As noted below, Hitachi estimates that only .07-.24 pound of chloroform remains in the aquifer. A weekly mass removal rate of .05 pound therefore represents an extremely effective remediation system, that would have removed all remaining contamination in another few weeks of system operation. Thus, the very data cited by DTSC precludes any finding that "continued operation of the extraction system is no longer justified."

"DTSC's second argument is similarly self-defeating. According to DTSC, it is not necessary to remediate the remaining chloroform, because the contamination is in the aquitard, where it should not affect groundwater. If there is no source of chloroform that will impact the aquifer, then MCLs should easily be achieved. Of course, the data – and DTSC's own prior statements – show otherwise. Even assuming DTSC is correct that all remaining chloroform is in the aquitard, the data show that this source will cause groundwater to exceed MCLs. In fact, this was precisely DTSC's conclusion, as communicated in a July 2008 email: "Modeling based on the concentrations of chloroform in the A/B aquitard indicates that the concentration of chloroform in groundwater in the A aquifer will exceed the 80 ug/L MCL." July 1, 2008 email from P. Ruffin, Attachment 10. Accordingly, by DTSC's own analysis, it ***is*** *necessary to remove the remaining chloroform in order to achieve the MCLs.*

"Finally, DTSC's third argument is entirely irrelevant. The fact that use of groundwater for drinking water purposes is prohibited has no bearing on the technical feasibility of achieving the MCLs. As a result, the ***only*** *technical basis for DTSC's finding that cleanup to MCL's is not practicable is data showing 1) that Hitachi's remediation system was consistently effective at removing chloroform mass; and 2) that remaining chloroform in the aquitard will cause groundwater to exceed MCLs. In short, DTSC provides no evidence – much less substantial evidence – to support its position."*

DTSC's Response to Comment 6:

To summarize, Signature asserts: (a) DTSC has not evaluated the practicability of meeting the MCL pursuant to Water Board Resolution No. 92-49 and the U.S. Environmental Protection Agency's (U.S. EPA's) Handbook; (b) DTSC's bases for finding it is not practicable to meet the MCL, as listed in the Addendum, are not sufficient; (c) Based on the above, the only technical basis for DTSC's finding that cleanup to the MCL is not practicable is data showing (i) Hitachi GST's remediation system was consistently effective at removing chloroform mass, and (ii) remaining chloroform in the aquitard will cause groundwater to exceed MCLs; and (d) in short, DTSC provides no evidence—much less substantial evidence—to support its position.

Response to 6(a):

DTSC's determination that corrective action is complete is consistent with Water Board Resolution No. 92-49. The State Board, in reviewing decisions by the Regional Boards, has interpreted the Resolution as providing flexibility to approve the completion of remediation where MCLs are not achieved at all monitoring locations and without obtaining a "contaminant

zone" designation. The State Board has applied this interpretation in cases where the residual post-remediation conditions indicate that the site is "low-risk" and water quality objectives will be attained within a "reasonable time" after site closure. See, *e.g.*, *In the Matter of Lois Green and Patricia Kelly*, Order: WQ 2005-0002-UST: *In the Matter of Matthew Walker*, Order: WQ 98-04 UST; and *In the Matter of Ernest Panosian*, Order WQ 2004-0018-UST. In *Green* and *Kelly*, the State Board approved the completion of remediation even though it was estimated that attainment of all Basin Plan water quality objectives would not occur for "a few decades to hundreds of years." *Id*. p. 10.

The evidence in the Administrative Record for the Chloroform Release Area demonstrates that many of the circumstances supporting DTSC's corrective action complete determination are similar to those considered by the State Board in the types of cases cited above, where the State Board has approved completion of remediation prior to attainment of the MCLs. For example,

1. The source of the chloroform in the Chloroform Release Area has been substantially removed from the soils above the water table through remediation. IBM's underground structures were apparently the source of the chloroform contamination. The chloroform releases have been removed from the vadose zone through IBM's and Hitachi GST's removal of the underground structures and Hitachi GST's operation of the 2-Phase™ Extraction system.[4]

2. The remaining chloroform groundwater plume (greater than 80 ug/L) is very small. Based on the October 2008 sampling results the plume was approximately 0.09 acres (approximately 4,000 square feet). The December sampling results show the plume is smaller than what is shown by the October results.

3. In December 2008, the average groundwater chloroform concentration in eight representative A-aquifer wells was less than 80/ug/L (72 ug/L). Only three A-aquifer wells had chloroform concentrations greater than 80 ug/L: EW-5 (91 ug/L), EW-10 (83 ug/L) and EW-16 (140 ug/L). All of these A-aquifer wells exhibited reduction in chloroform concentrations with the onset of seasonal recharge in the Fall of 2008, which demonstrates the natural flushing process is expected to continue to reduce groundwater chloroform concentrations over the long term. Compliance for risk assessment purposes is determined by the average groundwater concentration, which was consistently demonstrated in the three sets (August 08; 116 µg/l, October 08; 117 µg/l, and December 08: 72 µg/l) of post remediation groundwater chloroform data. The chloroform plume area greater than the 80/ug/L (State of California drinking water MCL) is limited to an approximately 4,000- square foot area identified by three A-aquifer wells (EW-5, EW-10, EW16) and two A/B Aquitard / A-aquifer monitoring wells (EW-17 and EW-18). The

[4] DTSC's Geological Services Unit (GSU) January 23, 2009 Memorandum responding to Signature San Jose LLC's Comments on Hitachi's Final Remedy Completion Report (DTSC January 23, 2009 Memorandum), pages 9 – 10; ENVIRON's "Groundwater and Soil Gas Sampling Results – December 2008 Report" (ENVIRON's December 2008 Report), pages 9 and 14 – 17.

residual A-aquifer groundwater chloroform plume is well defined by the five wells and the 13 surrounding monitoring wells and demonstrates achievement of the RBTC of 380 µg/l.

4. The post-remediation groundwater chloroform plume will continue to contract as a result of the natural flushing process and due to the relatively flat lateral groundwater gradient in the vicinity of former Building 028J. This is supported by the October and December 2008 results in the perimeter wells.

5. There is no current or anticipated use of the A-aquifer groundwater in the vicinity of former Building 028J for drinking water. The survey of groundwater wells conducted for the City of San Jose's 2005 Environmental Impact Report for the redevelopment project did not identify any A-aquifer drinking water wells within the surveyed area[5]. The Santa Clara Valley Water District generally prohibits use of the shallow aquifer as a drinking water source within the District's jurisdiction, requiring a minimum annual seal depth of 50 feet[6]. The use of A-aquifer groundwater for drinking water has been legally prohibited at the Hitachi GST property by an Environmental Covenant recorded in 2004[7]. Regardless of these prohibitions, the A-aquifer is low yielding and has an even more reduced yield in summer months. Therefore, it would not be a reasonable choice for placement of a groundwater supply well, especially when compared to the underlying B-aquifer.

6. The rate of decline in the concentration of chloroform in the A-aquifer wells had generally leveled off (i.e., become asymptotic) prior to the shutdown of the extraction system in August 2008. The rate of the removal of chloroform mass had leveled off months prior to the system shutdown to the very low rate of 0.05 pounds per week. This rate is approximately equivalent to a tablespoon of chloroform removed per week.

7. The residual chloroform mass is primarily in the A/B-aquitard. Due to the fine-grained nature of the aquitard soils and the difficulty of dewatering the overlying A-aquifer, renewed operation of the 2-PhaseTM Extraction system would not be expected to materially reduce the residual chloroform mass in the aquitard. The chloroform in the aquitard will be gradually flushed downward by the natural migration of groundwater.

8. The removal of chloroform from the A-aquifer was limited by the slow diffusion from the finer grained soils that are embedded within the sand zones within the aquifer. This is why continued operation of the 2-PhaseTM Extraction system for only "an additional one to two months" as suggested by Signature would not achieve reduction of chloroform concentrations to less than the MCL in that period. The concentration of chloroform in

[5] City of San Jose, *Integrated Final Environmental Impact Report for Hitachi Campus and Mixed-Use Transit Village Project*, (SCH #2004072110), January 2006, pages 164, 293 – 294.
[6] See Santa Clara Valley Water District, *A Guide for the Private Well Owner*, page 4, available at http://www.valleywater.org/media/pdf/Guide%20for%20Well%20Owners.pdf
[7] "Covenant and Environmental Restriction of Property, Hitachi Global Storage Technologies, Inc., 5600 Cottle Road, San Jose, California," Santa Clara County, Instrument No. 18001806, September 15, 2004.

the A-aquifer will gradually decline over time, regardless of system shutdown, as chloroform diffuses from these fine-grained soils and is flushed by the natural recharge.

9. There have not been any exceedances of the risk based target concentrations (RBTCs) established to protect human health from the vapor intrusion pathway that flows from groundwater and soil gas since before the shutdown of the extraction system. There are no unacceptable human health risks presented by the site conditions.

As described in the Final Statement of Basis, dated January 14, 2009, the remediation system shutdown criteria in the approved CMS Report has been met. The overall Corrective Action Objective as set forth in the CMS Report and in the Initial Study, "to prevent exposure of future occupants to elevated concentrations of chloroform in soil, soil gas, and groundwater," also has been met.

In the context of these circumstances and other facts in the Administrative Record, DTSC firmly concludes that (1) determining that corrective action is complete does not and will not adversely affect the current and probable future beneficial uses of water in the Basin, nor would it affect the future uses of the subject property, (2) completion of corrective action does not pose any human health or ecological risks, and (3) water quality objectives have been attained to the extent practical and will most likely be fully attained within a reasonable period of time in the future.

Regarding factors for determining technical impracticability discussed in USEPA's Handbook, the Handbook is not binding on this project for two reasons. First, the Handbook is only a guidance and DTSC is not legally required to follow it. Second, the Handbook expressly allows State regulators to use their discretion to differ from the guidance based on site-specific circumstances. (See also Response to Comment 8 below, incorporated herein by reference.)

Responses to 6(b):

The Addendum only provides a summary of some of the reasons it is not practicable to reach the 80 ug/L MCL. The Addendum was never intended to provide a full technical discussion. Nonetheless, DTSC has provided more details about the technical bases in items 1 through 9 in our Response to 6(a) above.

Response to 6(c):

This assertion is incorrect. DTSC has provided its technical bases in Response (a) above as well as in numerous memoranda and documents in the Administrative Record, such as the Final Statement of Basis.

Response to 6(d):

This assertion is also incorrect. DTSC has provided substantial evidence to support its conclusion that corrective action is complete in this Response to Comments document, the Statement of Basis and numerous memoranda and documents in the Administrative Record.

Comment 7: According to DTSC's Findings, Continued Operation of Hitachi's Remediation System Would Already Have Achieved MCLs

[February 13, 2009 letter, Section C.2.b.]

"While DTSC is unable to muster any technical support for its finding, the record contains significant evidence demonstrating that DTSC is wrong. In fact, DTSC's prior findings in this matter require a determination that cleanup to MCLs is not only feasible, ***but would already have been achieved*** *had DTSC not authorized Hitachi to discontinue remediation in August 2008.*

"First, Hitachi purports to calculate that at the time its remediation system was shut down in August 2008, only .07-.24 pound of chloroform mass remained in the groundwater. Environ, Final Remedy Completion Report, Appendix D, p. D-5. DTSC has accepted these calculations. At the same time, it is undisputed that at all times prior to system shutdown in August 2008, the remediation system consistently was removing .05 pound of chloroform per week, including during the final week of operation. Attachment 7, Ex. K. Thus, the actual remediation data compels the conclusion that all remaining chloroform mass (as calculated by Hitachi and approved by DTSC) would have been removed from the subsurface in at most one more month of remediation.

"Second, Hitachi has presented a natural flushing model purporting to show that the groundwater will be restored to MCLs with the flushing of .87 pore volumes of water. Environ, Final Remedy Completion Report, Nov. 17, 2008, Appendix F, p. F-4. It is undisputed that the Hitachi remediation system was flushing between 5 and 10 pore volumes per year. Once again, Hitachi's own analysis – as approved by DTSC – dictates a conclusion that MCLs would have been achieved through operation of the remediation system for an additional 1-2 months.

"Thus, consistent with its other findings, DTSC ***must*** *conclude that cleanup to MCLs would be not only feasible, but would already have occurred had Hitachi continued to operate its remediation system after August 2008. By DTSC's own analysis, DTSC's authorization of the system shutdown therefore is the only factor that has prevented cleanup to MCLs. That DTSC chose to violate its own Negative Declaration by not requiring the very minor amount of additional remediation necessary to achieve MCLs does not establish that achieving MCLs is infeasible; instead, it establishes that DTSC has acted arbitrarily and capriciously, without* ***any*** *supporting evidence, and in violation of law."*

DTSC's Response to Comment 7:

To summarize, Signature asserts: (a) MCLs would already have been achieved in 1-2 months had DTSC not authorized Hitachi GST to discontinue remediation in August 2008; and (b) DTSC violated its Negative Declaration by not requiring the system to operate the system to operate for a longer period of time.

Response to 7(a):

Signature's assertion is incorrect and does not reflect evidence in the Administrative Record of the series of events and physical processes that caused the treatment system chloroform mass removal to exhibit an asymptotic behavior. The chloroform mass removal rate is biased to overestimate future mass removal and the residual chloroform mass estimate is biased low to underestimate total residual mass. The chloroform mass removal rate is biased to over estimate future chloroform removal rates because the remediation system was optimized during the last five months of system operation with the installation and startup of large diameter A-aquifer well EW-16 on April 1, 2008 and installation and startup of A/B-aquitard wells EW-17 and EW-18 on June 10, 2008. With the installation of EW-16 in the approximate center of residual chloroform mass the system mass removal rate was augmented and maintained during the last five months of system operation. With the installation and operation of EW-17 and EW-18 additional chloroform mass associated with the groundwater and soil in A/B-aquitard also augmented and maintained chloroform mass removal rates during the last two months of system operation. Continued system operation would likely experience a reduction in chloroform mass removal rates in light of approaching winter season and seasonal groundwater water table rise. The residual chloroform mass estimate used to estimate remaining cleanup time is biased low and not appropriate for comparison to system mass removal rates because it does not include minor residual mass in vadose zone and mass in underlying A/B-aquitard. The 2-Phase™ Extraction system, which extracted groundwater at an average rate of 1.2 gallons per minute and soil vapor at an average rate of 169 cubic feet per minute, would not likely maintain the chloroform mass removal rate of 0.05 pounds per month because no additional remediation system optimization strategies were possible. The system had effectively reduced the size and the concentration of the residual A-aquifer plume and was configured to attempt removal of chloroform in pore water of the underlying A/B-aquitard. Based on the 2-Phase™ Extraction system operation and monitoring data including groundwater and soil gas results collected during system operation, the active remediation system was shut down and post remediation monitoring was initiated.

The bulk of the remaining mass of chloroform is bound in the A/B-aquitard, not in the A-aquifer.[8] The continued removal of chloroform from the aquifer was limited by diffusion and by the limited ability to dewater this unit further with the onset of seasonal recharge in the Fall of 2008.[9] Given these facts, the continued operation of the 2-Phase™ Extraction system would not

[8] Final Remedy Completion Report, pages 29, 33, and 37.
[9] Final Remedy Completion Report, page 19.

accelerate the removal process materially as compared to the natural flushing of the soils caused by the seasonal recharge of groundwater.[10]

Signature is also mistaken to even attempt to extrapolate the time required to obtain the MCL in the three (3) locations of the A-aquifer by using the estimated remaining mass in the aquifer with the historic weekly system chloroform mass removal rate. Any estimates of the mass of chloroform in the aquifer/aquitard that were based on pre-remediation soil/groundwater data were only an approximation and have since been superseded by the actual mass recovery data from the remedial system operations. As the actual operating history of the remediation system has demonstrated, such mass estimates are not an accurate basis for predicting the timing of removal of the remaining chloroform mass in the aquifer (assuming the remediation system were to continue to be operated in its final configuration).[11] The measured concentrations of chloroform in the soil, soil gas and groundwater provide a much more demonstrative basis from which to measure the completeness of cleanup.[12] These data clearly demonstrate that the cleanup has achieved all the goals established by DTSC, but progress towards even lower concentrations had materially slowed by August 2008 before the remediation system was terminated.[13]

Response to 7(b):

DTSC's authorization of system shutdown was based on sound technical reasons (See Response to Comment 7(a) above) and the decision to determine that corrective action is complete is consistent with the Corrective Measures Study (CMS) and the Negative Declaration. (See, for example, Responses to Comments 6(a) and 17 through 22, incorporated herein by reference.)

Comment 8: DTSC Cannot Rely on Natural Attenuation as a Means of Achieving MCLs

[February 13, 2009 letter, Section C.2.c.]

"Nor can DTSC attempt to rely on natural attenuation as a means to achieve MCLs. DTSC has failed to undertake the required evaluation, to make the required findings, or to impose the required conditions for such a remedy. These requirements are specified in EPA's Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action, U.S. EPA (2004), Chapter 11 (see also OSWER Directive 9200.4-17P Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites U.S. EPA (1999). Among other things, reliance on natural attenuation as a remedy requires 1) the existence of source controls; 2) demonstration that the dominant natural attenuation processes cause degradation or destruction of contaminants as opposed to those processes that merely dilute

[10] DTSC January 23, 2009 Memorandum, page 9; Final Remedy Completion Report, page 30.
[11] DTSC January 23, 2009 Memorandum, pages 8 and 9.
[12] DTSC January 23, 2009 Memorandum, pages 8 and 9.
[13] DTSC January 23, 2009 Memorandum, pages 7 and 9; Final Remedy Completion Report, pages 29, 20, and 37.

contamination; and 3) a monitoring plan for confirmation that natural attenuation is occurring. Id.

"None of these requirements are met in the current matter: (1) There are no source controls; (2) Hitachi's only evaluation of natural attenuation is a natural flushing model that relies exclusively on dilution of chloroform, with no showing that any chloroform will be degraded or destroyed; and (3) neither Hitachi nor DTSC is proposing to implement any monitoring to evaluate the efficacy of natural attenuation. Accordingly, there is no basis in the record to support an alternative remedy of natural attenuation."

DTSC's Response to Comment 8:

To summarize, Signature asserts that DTSC has attempted to rely on natural attenuation as a remedy and that DTSC has failed to follow U.S. EPA requirements for evaluation, findings and conditions.

The underlying assumption of Signature's comment is incorrect. DTSC is not relying on natural attenuation as a means to achieve the chloroform MCL in groundwater. In the Addendum to the Negative Declaration (pages 5 – 7), DTSC explained its decision to determine that corrective action is complete despite the fact that the MCL for chloroform had not been achieved in every well. That explanation does not reference natural attenuation. Likewise, in the updated Final Statement of Basis, dated January 14, 2009, (pages 11 – 12), DTSC's summary of the reasons for its overall decision that corrective action is complete at the Chloroform Release Area does not contain a reference to natural attenuation. Also see Response to Comment 6, which does not mention natural attenuation as a remedy or basis for DTSC's determination that corrective action is complete. Therefore, the federal guidance referenced by Signature is not relevant. Nonetheless, DTSC addresses the applicability of that guidance below.

DTSC did include a statement in the Fact Sheet that "the chloroform concentration in the A-aquifer is expected to decrease over time."[14] This is supported by the information in the Administrative Record about the likelihood and timing of attaining the MCL for chloroform through diffusion and natural flushing.[15] Although DTSC did not rely on this information about natural flushing as the basis for its decision, it did consider this information as further support for its determination. DTSC's consideration of the time it will take for natural flushing to reduce chloroform concentrations is consistent with the decisions of the State Water Resources Control Board cited in Comment 6 above (which responds to Signature Comment C.2.a.), authorizing site closure without further monitoring if MCLs will be obtained through natural processes within a reasonable time frame.

[14] Fact Sheet, January 2009, page 3.
[15] For example, the Final Remedy Completion Report summarizes different methodologies for estimating the time required for natural flushing to reduce the chloroform concentration in the A-aquifer to achieve the MCL, and concludes that the estimated time ranges from 5.6 to 8.4 years (See page 36 and Appendix F).

Finally, the USEPA Handbook cited by Signature, to the extent it applies to the cleanup of the Chloroform Release Area, is not binding and leaves discretion to the State regulators to adopt different approaches to RCRA Corrective Action remedies.[16] (See Response to Comment 6 above, incorporated herein by reference.) As expressly stated in the Handbook:

> [T]his Handbook provides guidance to EPA regional and State RCRA Corrective Action Program implementers…[T]his handbook does not impose legally binding requirements on EPA [or the] States…and may not apply to a particular situation based upon the specific circumstances of the corrective action facility. EPA and State regulators retain their discretion to use approaches on a case-by-case basis that differ from this Handbook were appropriate.[17]

Comment 9: The Record Contains Insufficient Data to Determine Steady-State Groundwater Concentrations

[February 13, 2009 letter, Section C.3.a.]

"As a general matter, the Water Board requires a minimum of two years of post-remediation groundwater monitoring in order to establish that cleanup goals have been achieved. 23 CCR 2550.7(e)(12)(B). By contrast, the Negative Declaration only provides for three months of post-remediation monitoring, and DTSC has not even enforced this modest requirement. According to DTSC, the first "post remediation" monitoring occurred contemporaneous with the remediation system shutdown. However, such monitoring represents conditions at the end of the active remediation, and are not reflective of steady-state, post-remediation conditions.

"For this reason, EPA's guidance specifically requires that post-remediation monitoring take place after passage of sufficient time to allow groundwater to reach steady-state conditions: "Finding that groundwater has returned to a steady-state after terminating remediation efforts is an essential step in the establishment of a meaningful test of whether or not the cleanup standards have been attained." Methods for Evaluating the Attainment of Cleanup Standards, U.S. EPA (1992), p. 7-14.18 EPA's guidance contains detailed instructions on technical evaluations necessary to determine whether groundwater has reached steady-state. Id. at Chapter 7. Although purporting to make findings concerning the steady-state groundwater

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[16] Furthermore, Signature has inaccurately cited the USEPA Handbook as including "required findings" for a natural attenuation remedy. In fact, the USEPA Handbook simply states that "monitored natural attenuation proposals are more likely to be acceptable to regulators" when six factors, including the three cited by Signature, are present. One of the factors cited by Signature as being absent in this case – a demonstration that the natural attenuation is a result of degradation rather than dilution – is clearly not a requirement for natural attenuation. The OSWER Directive on natural attenuation cited by Signature specifically includes "dispersion" and "diffusion" in its definition of natural attenuation. (OSWER Directive, 9200.4-17P, *Use of Monitored Natural Attenuation at Superfund, Corrective Action, and Underground Storage Tank Sites*, USEPA (1999), page 3, at http://www.epa.gov/OUST/directiv/d9200417.pdf)

[17] USEPA Handbook, page ii.

[18] EPA has explicitly adopted this guidance for RCRA Corrective Actions. Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action, U.S. EPA (2004), p. 15.2.

concentrations, DTSC has made no attempt to employ EPA's guidance or any other methodology to evaluate whether groundwater conditions have reached steady-state. See DTSC Final Statement of Basis, Hitachi Global Storage Technologies, Inc., January 14, 2009 ("DTSC Statement of Basis"), at p. 12. As a result, DTSC cannot – consistent with applicable guidance – make any determination of compliance with groundwater cleanup goals.

"DTSC further claims that the second post-remediation monitoring event occurred in October, although not all monitoring wells were sampled. By DTSC's count, the third and final monitoring event occurred in December, at a time when the water table had dramatically risen, thereby diluting concentrations in most of the monitoring wells, because their screens extend well above the water table. Based on these limited data, DTSC concludes that groundwater concentrations are not "expected" to rise above the RBTC. DTSC Statement of Basis, at p. 12. DTSC provides no data or analyses to support this expectation. While DTSC claims it makes determinations based on actual data, and while it would be relatively easy to perform the additional sampling to determine whether long-term groundwater concentrations will exceed RBTCs, DTSC has refused Signature's requests for such sampling, apparently preferring instead to base its finding on expectations."

DTSC's Response to Comment 9:

To appropriately respond to this comment, DTSC has separated it into sub-comments 9(a) – 9(f).

Comment 9(a): To summarize, Signature asserts: The RWQCB requires a minimum of two (2) years of post remediation groundwater monitoring in order to establish that cleanup goals have been achieved. (Section C. 3.a., paragraph 1, first comment.)

Response to 9(a): The regulation cited in the comment is not directly applicable to the corrective action for the Chloroform Release Area because 1) the Title 23 regulations are enforced by the RWQCB while DTSC enforces the Title 22 regulations and Health and Safety Code, Chapter 6.5 for cleanup under the Corrective Action Program, and 2) the prescriptive duration of groundwater monitoring is applicable to regulated Hazardous Waste Management Units only, which the Chloroform Release Area is not. The duration of groundwater monitoring for determining corrective action is complete is a discretionary decision exercised on a case by case basis using site specific information. DTSC evaluated the site specific data and correctly exercised its discretion concerning the post remediation monitoring requirements for the Chloroform Release Area.

Comment 9(b): To summarize, Signature asserts: The Negative Declaration requires three (3) months of monthly post remediation groundwater monitoring and DTSC did not require three (3) months of post remediation groundwater monitoring. (Section C.3.a., paragraph 1, second comment.)

Response to 9(b): The Negative Declaration does not place requirements on the project, which was installation and operation of the vapor extraction system. The Initial Study and Negative

Declaration summarize requirements from other documents such as the Corrective Measures Study (CMS) Report and describe environmental impacts. DTSC actually required three (3) post remediation monitoring events over a four (4) month period. DTSC had discretion to adjust implementation of the corrective action program described in the CMS Report as more information became available during implementation. Remediation groundwater monitoring occurred in August 2008, October 2008, and December 2008. The final post remediation groundwater monitoring that occurred on December 19 - 22, 2008, took place approximately four (4) months following the August 12, 2008, remediation system shutdown date. The monitoring that occurred, while slightly different than that described in the Negative Declaration, was not inconsistent with the CMS. The Addendum to the Negative Declaration describes the monitoring that occurred and explains how it did not change the environmental impacts of the project. The monitoring that ultimately occurred confirmed that the corrective action objectives (CAOs), as stated in the CMS Report, were met.

Comment 9(c): To summarize, Signature asserts: The first post remediation groundwater monitoring took place contemporaneous with system shutdown and is not reflective of steady state post remediation conditions. (Section C.3. a, paragraph 1, third comment.)

Response to 9(c): The first post-remediation groundwater sampling event on August 13-14 followed the August 12 system shutdown and therefore reflects initial post remediation conditions. This first sampling event by itself was not intended to demonstrate a steady state condition. Subsequent groundwater monitoring occurring in October 14-15, 2008 and December 19-22, 2008 are representative of post remediation conditions after approximately two (2) and four (4) months. The post remediation groundwater monitoring results in the A-aquifer indicate that groundwater concentrations are declining in response to chloroform source removal from the vadose zone and seasonal groundwater recharge. These conditions are reflective of steady state post remediation conditions.

In addition to the three (3) post-remediation groundwater monitoring rounds, groundwater monitoring data collected during the remediation activity indicated that groundwater concentrations were consistently declining and the area of contamination was consistently decreasing during groundwater extraction. The relatively small area with residual chloroform in groundwater is primarily located at the bottom of the A-aquifer and into the A/B aquitard at concentrations that are well below concentrations indicative of DNAPL, indicating that any chloroform source for groundwater rebound is not present and will not occur. The post-remediation data continued to show that groundwater chloroform reduction was persistent and confirmed the absence of any significant chloroform mass capable of producing groundwater concentration rebound.

Comment 9(d): To summarize, Signature asserts: DTSC has made no attempt to employ EPA guidance or any other methodology to evaluate whether groundwater has reached steady state. (Section C.3.a., paragraph 2.)

Response to 9(d): See Responses 6 and 8 above for information on why DTSC does not have to follow guidance in the EPA Handbook. First, the Handbook is only a guidance, not a

regulation, and it does not bind DTSC. Second, the Handbook mentions that States can vary their processes on a site specific basis. The Administrative Record includes numerous documents, such as the Statement of Basis and the GSU and HERD memoranda dated January 14, 2009, January 23, 2009, February 11, 2009, and February 12, 2009 that show that DTSC has carefully evaluated the potential for groundwater concentration rebound using reputable methodologies. DTSC carefully evaluated post remediation groundwater concentration trends and based on the groundwater monitoring data. DTSC has concluded that A-aquifer groundwater chloroform concentrations are declining. See the technical data and analysis in pages 3-5 of the January 9, 2009 GSU memorandum and pages 6-8 of the January 23, 2009 GSU memorandum.

Comment 9(e): To summarize, Signature asserts: DTSC concludes that groundwater concentrations are not "expected" to rise above the RBTC, but provides no data or analysis to support this expectation. (Section C.3.a., paragraph 3, first comment.)

Response to 9(e): This comment is incorrect. The Administrative Record is replete with data and analysis that supports DTSC's conclusion that groundwater concentration of chloroform will not rise above the RBTC level. For example, the groundwater monitoring data collected throughout the remediation and post remediation process and documented in the Final Remedy Completion Report and Groundwater and Soil sampling Results –December 2008 Report indicate that dissolved concentrations of chloroform declined in response to remediation activities and continue to decline in the post remediation period. The post remediation soil gas sampling results indicate that the original vadose zone chloroform source area has been substantially removed. See the technical description on pages 3-5 of the GUS memorandum dated January 9, 2009 and pages 6-8 in the GSU memorandum dated January 23, 2009.

Groundwater concentration data consisting of nine (9) separate sets of monitoring results from multiple wells collected between May 2007 and December 2008 also provides a sound basis for concluding that groundwater remediation is complete. Groundwater data collected from EW-9 represents the area of highest initial chloroform concentration and it is the most likely area to contain residual chloroform mass capable of producing concentration rebound. EW-9 chloroform concentrations declined from a site high value of 920 µg/L detected in May 2007 prior to remediation system startup to a concentration of 62 µg/L in August 2008 following remediation system shut down. Post remediation results for EW-9 collected in October 2008 and December 2008 approximately two (2) and four (4) months following remediation shutdown were 83 µg/Land 71 µg/L, respectively. The groundwater chloroform decline is the result of chloroform mass removal from the saturated aquifer zone. Thus, DTSC finds the data and analysis in the Administrative Record convincingly demonstrate that groundwater concentrations will not rise above RBTC levels. Also see DTSC's detailed Responses to Comments 10 and 11 below, incorporated herein by reference.

Comment 9(f): To summarize, Signature asserts: DTSC has refused Signature's request for additional groundwater monitoring. (Section C.3.a., paragraph 3, second comment.)

Response to 9(f): DTSC does not believe that additional groundwater monitoring is necessary. Data and analyses in the Administrative Record demonstrate that more groundwater monitoring is not necessary in order to find that chloroform levels will not rise above the RBTC levels. Also, see Response (e) above, incorporated herein by reference.

Comment 10: Existing Data Shows That Groundwater Exceeds RBTCs

[February 13, 2009 letter, Section C.3.b.]

"In fact, the actual data indicates that groundwater currently exceeds RBTCs and likely will in the future. Throughout its history, Hitachi's remediation system consistently extracted groundwater with chloroform concentrations exceeding the RBTC. At the time of the system shutdown in August 2008, chloroform concentrations in extracted groundwater averaged between 400 and 600 ug/L. Attachment 7 at Figure 5 and Exhibits E, G and H. DTSC chooses to ignore this actual data, arguing that there is no way to determine whether the source of chloroform in the remediation system was the groundwater. DTSC offers no technical rationale for this conclusion, which is directly contrary to the data presented by Signature and by Hitachi. Signature already has presented a detailed and exhaustive analysis of this technical data, to which DTSC has offered no response, beyond citing Hitachi's unsupported conclusions. Accordingly, the only technical data in the record shows that extracted groundwater significantly exceeded the RBTCs as of August 2008.

"Choosing to ignore actual data that undermines its conclusions, DTSC relies exclusively on recent shallow monitoring well data. As previously demonstrated, Hitachi's use of these wells for 2-Phase remediation created a "halo effect" - an area around the wells where chloroform was purged from residual water retained in the dewatered zone. After shut-down of the remediation system, chloroform in groundwater around the wells was diluted by the cleansed residual water in the dewatered zone, a process that causes the monitoring well sample (and the groundwater surrounding the well) to have a lower concentration than the aquifer generally. Attachment 5. While DTSC claims to reject the presence of a halo effect, it offers no technical rationale for this position, and fails to provide any substantive response to Signature's technical presentation. Once again, DTSC simply has chosen to ignore technical data that presents an obstacle to its proposed action.

"More recently, the shallow monitoring well samples have been diluted by substantial seasonal recharge. Between the October and December 2008 sampling events, the water table rose several feet. Because the shallow monitoring wells are screened well above the water table, this clean recharge has entered the wells and diluted chloroform concentrations in groundwater. Hitachi has acknowledged this effect, and therefore conceded that the December 2008 shallow monitoring well data is not representative of steady-state aquifer conditions. Environ, Groundwater and Soil Gas Sampling Results, Jan. 5, 2009, pp. 8-9.

"Moreover, it is undisputed that groundwater concentrations will increase as the water table falls in the late Spring. This phenomenon has already been documented at the site. In Winter 2007/2008, chloroform concentrations in groundwater dropped significantly, only to rebound in

late Spring 2008, despite the ongoing remediation. Environ, Final Remedy Completion Report, Nov. 17, 2008, Table 1. Neither Hitachi nor DTSC has made any attempt to predict the extent of chloroform rebound in late Spring 2009.

"Finally, and most significantly, the recent sampling data shows that chloroform concentrations already exceed the groundwater RBTC. The chloroform concentration in well EW-17 rebounded to 560 ug/L, well above the RBTC of 380 ug/L and squarely within the range of concentrations detected in groundwater extracted by the remediation system. Environ, Groundwater and Soil Gas Sampling Results, Jan. 5, 2009. Because EW-17 is screened below the water table, it was not subject to the dilution from seasonal recharge that affected nearly every other monitoring well. Moreover, because the well was only briefly used for the remediation, the halo effect was limited."

DTSC's Response to Comment 10:

To appropriately respond to this comment, DTSC has separated it into sub-comments 10(a) – 10(e).

Comment 10(a): To summarize, Signature asserts: Data indicate that groundwater concentrations are above the RBTCs and averaged between 400 and 600 µg/L. DTSC offers no technical rationale for refuting Signature's ground water concentration estimate. (Section C.3.b, paragraph 1.)

Response to 10(a): This assertion is incorrect. DTSC provided technical rationale to refute Signature's groundwater estimates in the GSU memorandum dated January 23, 2009. That memorandum demonstrates that Signature's groundwater mass estimate is inaccurate and fundamentally flawed because it is based on the false assumption that all of the chloroform in the vapor influent to the remediation system originates solely from the contaminated groundwater. In fact, the Administrative Record is clear that vapor influent also comes from the vadose zone and that some contaminated water influent comes from the A/B aquitard. The groundwater monitoring data collected during the remediation and post remediation phases do not support Signature's groundwater chloroform concentration estimates. DTSC's technical basis for disregarding Signature's mass estimate relies on the soil gas data set from the soil vapor contamination area, which indicates the detectible presence of chloroform in soil gas collected during the remediation and post remediation process. The vapor extracted by the remediation system certainly contained chloroform from the vadose zone as documented by the soil gas data set, in addition to the chloroform dissolved in the extracted groundwater. The groundwater chloroform concentrations are best estimated by the groundwater samples collected from the monitoring and extraction wells during remediation and post remediation monitoring. In conclusion, DTSC has provided technical rationale to refute Signature's assertions.

Comment 10(b): To summarize, Signature asserts: Use of extraction wells for 2-phase remediation created a "halo effect" where chloroform was purged from residual water retained in the dewatered zone and this effect biases groundwater concentration to be low. DTSC

rejects this interpretation and offers no technical justification for the rejection. (Section C.3.b., paragraph 2.)

Response to 10(b): This comment is incorrect. The Administrative Record contains DTSC's technical justifications for rejection of Signature's interpretation of data. For example, the January 23, 2009 memorandum by DTSC's GSU, which was provided to Signature on January 27, explains why Signature's interpretation of a "halo effect" biasing groundwater monitoring results to be low is speculative and not accepted by GSU. The technical reason for rejecting the "halo effect" for groundwater around monitoring wells is that the wells were operated as extraction points and were constantly used for vapor and groundwater removal. No air sparging was ever conducted in the sixteen (16) A-aquifer extraction wells that could have preferentially stripped chloroform from saturated sediments. DTSC believes concentration changes observed in active and inactive extraction wells are the result of clean groundwater flushing through the original plume area. The contaminated groundwater removed by the remediation system was replaced by groundwater with consistently lower chloroform concentrations, which resulted in the groundwater concentration declines in the Chloroform Release Area. The mechanism for VOC removal from contaminated aquifer areas caused by groundwater extraction is well understood. The "halo effect" theory and interpretation put forth by Signature is not supported by the literature or technical guidance for evaluating groundwater monitoring data. In conclusion, DTSC finds two major technical reasons for rejecting Signature's "halo effect" theory. First, the well understood process for VOC mass removal associated with groundwater flushing and VOC partitioning refutes Signature's theory. Second, Signature has not cited or placed any peer reviewed environmental remediation literature into the record that supports Signature's theory. Also, DTSC is not aware of peer reviewed studies that support Signature's theory.

Comment 10(c): To summarize, Signature asserts: December 2008 groundwater monitoring data from the sixteen (16) A-Aquifer extraction and/or monitoring wells is diluted by groundwater recharge associated with seasonal water level rise and well screens above the water table, thus the data is not representative of steady-state aquifer conditions. (Section C.3.b., paragraph 3.)

Response to 10(c): Based on data and analysis in the Administrative Record, DTSC rejects Signature's claim that the December 2008 A-Aquifer groundwater data set is not representative because it is diluted. For example, see Final Remedy Completion Report (Environ 2008) and Groundwater and Soil Gas Sampling Results December 2008 (Environ 2009). Based on Environ Response to Comments, January 9 , 2009 S.S.Papadopulos (Environ 2009b) DTSC expects the seasonal aquifer recharge to decrease groundwater chloroform concentrations due to i) the mechanism of advective dispersion associated with groundwater flow and ii) concentration dilution associated with influx of seasonal clean water recharge. These reductions in concentrations associated with seasonal recharge are the result of a natural process that will continue to reduce remaining groundwater chloroform levels over time. The groundwater chloroform data set indicates that groundwater chloroform concentration equilibrium occurs relatively quickly. The groundwater data from the most contaminated wells in the Chloroform Release Areas shows the steady continuous reduction of chloroform concentrations associated with contaminated groundwater extraction and clean water recharge.

The reduced concentrations following remedial system shutdown appear to be persistent and representative of steady state conditions. The A-aquifer groundwater concentration data reflects the relatively rapid equilibrium between groundwater and contaminated aquifer material. The steady reduction in the size of the chloroform plume area and concentration of chloroform also demonstrate the relatively rapid equilibrium process. DTSC finds that the December 2008 A-aquifer groundwater concentration data reflect aquifer conditions and DTSC considers this data to be accurate and representative. The A-aquifer groundwater chloroform data set are below the site specific RBTC and DTSC believes the chloroform levels will not rise above the RBTC level.

Comment 10(d): To summarize, Signature asserts: It is undisputed that groundwater concentration will increase as the water table falls in late spring and there are examples of evidence of groundwater concentration increases occurring in late spring 2008. (Section C. 3. f., paragraph 4.)

Response to 10(d): DTSC does not agree with Signature's assertion. The groundwater concentration increases observed in the May through July 2008 time period occurred only at wells EW-5, EW-9, EW-10, and EW-16. The increases occurred following seasonal high groundwater levels and concurrent with system shutdown and installation and startup of EW-16 on April 1, 2008. DTSC considers the apparent increase in groundwater concentrations during this period to be an artifact of reconfiguring the remediation system to extract only from wells EW-5, EW-9, EW-10 and EW-16 beginning in April 2008 and not to be a result of groundwater elevation decline. DTSC is not aware of any mass transport process that would increase dissolved chloroform concentrations in the aquifer when water levels decline from seasonal highs, and hence DTSC does not agree with Signature's assertion.

Comment 10(e): To summarize, Signature asserts: The December 2008 groundwater monitoring chloroform concentration of 560 µg/L at EW-17 is more representative of the A-aquifer and the results from all the other monitoring wells are biased low due to dilution from seasonal recharge and the "halo effect" associated with their operation as remediation wells. Also, because EW-17 is screened below the water table and thus not subject to the dilution from seasonal recharge, it is most representative of A-aquifer conditions. (Section C.3.f., paragraph 5.)

Response 10(e): DTSC disagrees with this comment. Our analysis is that the December 2008 concentration in EW-17 represents residual chloroform in A/B-aquitard materials in the vicinity of the original source area, not in A-aquifer groundwater and thus the groundwater monitoring data contradicts Signature's assertion. The elevated chloroform concentrations observed in EW-17 are consistent with the previous maximum detection of chloroform in a saturated A/B-aquitard soil sample collected from the well screen interval. Groundwater low flow characteristics noted in the December 2008 Report and observed during sampling indicate that well EW-17 was installed in low permeable clay material and these characteristics are consistent with DTSC's interpretation that elevated chloroform detected at EW-17 is related to chloroform mass located in the A/B-aquitard. Groundwater recharge characteristics observed during monitoring well sampling indicate that EW-17 is less permeable and different than the other A-aquifer

monitoring wells. All A-aquifer monitoring results collected from wells installed solely in the A-aquifer during the three (3) post remediation monitoring events indicate chloroform concentrations are below cleanup goals (RBTCs) and much lower than the results observed at EW-17. The data from EW-17 reflect the A/B Aquitard and the bottom of the A-aquifer, and is not representative of the A-aquifer chloroform plume or its equilibrated vapor phase.

Comment 11: DTSC Has Refused to Consider Actual Data Showing Current RBTC Exceedences

[February 13, 2009 letter, Section C.3.c.]

"DTSC has refused even to consider the recent data from EW-17 on the grounds that the sample from that well could not have come from the aquifer. While DTSC could easily test its hypothesis through further sampling, it has no intention of doing so. Instead, DTSC points to the fact that the well filled slowly following purging as evidence that the water could not have come from the aquifer, and also claims that the well screen does not extend into the aquifer. DTSC goes so far as to suggest that any claim by Signature that water in EW-17 comes from the aquifer would be a "misrepresentation." In fact, the actual site data conclusively establish that DTSC is seriously mistaken.

"The facts on this point are straightforward:

- *EW-17 was installed in May 2008. In its July 2008 monitoring report, Hitachi describes the installation of EW-17 and states that its purpose was to "capture chloroform fixed within deeper portions of the A-aquifer and from within the A/B aquitard." See Environ, 2-Phase Extraction System Monitoring Report – January 2008 through June 2008, July 1, 2008, Attachment 11, at p. 3.*
- *The boring log for EW-17 clearly shows the well screen extending about 1.5 feet into the aquifer, with a sand filter extending another two feet upwards to the seal. Attachment 12.*
- *In the November 2008 Completion Report, Hitachi describes EW-17 as "partially" screened in the aquitard, and in a footnote indicates that three feet of the five foot well screen extended into the aquitard - thus leaving two feet extending into the aquifer. Environ, Final Remedy Completion Report, Nov. 17, 2008, Table 1, note 8.*
- *A month later, after sampling showed high levels of chloroform in EW-17, Hitachi abruptly changed its description of the well, claiming for the first time that EW-17 "is screened approximately five feet into the A/B Aquitard, with the screen extending only a few inches into the overlying A-Aquifer." Based on this representation, Hitachi argues that EW-17 does not extract from the aquifer and the test results should be ignored. Environ, Groundwater and Soil Gas Sampling Results – December 2008, Jan. 5, 2009, p. 10. Ironically, in the very same report, Hitachi acknowledges that EW-17 "was constructed with screen extending three feet deep into aquitard." Id. at Table 2, note 4. Thus, even Hitachi has acknowledged that its argument for ignoring the EW-17 data is based on false assumptions.*

- *While theorizing that EW-17 does not extract water from the aquifer, Hitachi admits that well EW-18 is capturing aquifer groundwater. Id. at p. 3. However, wells EW-17 and 18 have identical construction, with five foot screens extending 1-2 feet into the aquifer. Attachment 12. Hitachi and DTSC offer no theory, much less data, to explain how these identical wells could function in such a different manner.*

"These data establish beyond credible dispute that the well screen in EW-17 is completed in both the A aquifer and the aquitard. Given that the aquifer is more conductive than the aquitard, most if not all of the water sampled from EW-17 must be from the aquifer. The fact that EW-17 filled slowly after purging is consistent with the relatively low permeability materials in the aquifer at that location, as confirmed by the boring log.

"DTSC's theory that chloroform in the aquitard diffused into the well water is, at best, implausible and in any event is not supported by any data or technical rationale. First, Hitachi has already reported that diffusion was not a viable means of chloroform transport in the aquitard. Environ, Modeling Report, August 11, 2008, at p. 26. Moreover, even if diffusion were viable, this chloroform would significantly impact the A aquifer. During installation of EW-17, a soil sample taken at the very top of the aquitard had extremely high concentrations of chloroform. Environ, Final Remedy Completion Report, Nov. 17, 2008, Table 6. If this chloroform is diffusing anywhere, it would also diffuse into the aquifer. Thus, the very rationale offered by DTSC to ignore the EW-17 sample results would tend to prove that chloroform in the aquitard has a significant impact on the aquifer.

"Even if the chloroform detected in well EW-17 had migrated by diffusion, Hitachi offers no explanation for why the concentrations increased to such a great degree since shut-down of the remediation system. If Hitachi's theory were correct, concentrations in well EW-17 should be declining, not increasing.

"As a result, there is demonstrated rebound above RBTCs in the groundwater, and DTSC cannot find that Hitachi has completed the remediation. DTSC cannot simply ignore this key data. To the extent DTSC questions whether the EW-17 data is representative of the aquifer, it would be a simple matter for DTSC to require additional data to prove or disprove its hypothesis. DTSC's election to embrace Hitachi's implausible theories over actual data represents a serious abuse of discretion.

"Moreover, should DTSC persist in its belated rejection of data from well EW-17, Hitachi must revise its risk assessment. The CMS and Negative Declaration require Hitachi to perform a post-remediation risk assessment. In its Final Remedy Completion Report, Hitachi included well EW-17 in its risk assessment, thereby acknowledging that sample results from EW-17 represented aquifer conditions. Environ, Final Remedy Completion Report, Nov. 17, 2008, Table 11. By now excluding EW-17, Hitachi has invalidated its own risk assessment."

DTSC's Response to Comment 11:

To appropriately respond to this comment, DTSC has separated it into sub-comments 11(a) – 11(g).

Comment 11(a): To summarize, Signature asserts: DTSC has refused to accept Signature's interpretation that EW-17 is representative of the A-aquifer condition or conduct additional testing to test Signature's interpretation. (Section C. 3.c, paragraph 1.)

Response to 11(a): DTSC believes that December 2008 EW-17 monitoring results are primarily representative of A/B-aquitard materials. DTSC does not accept Signature's claim that all of the other monitoring data collected from wells completed in the A-aquifer should be ignored because of Signature's alleged A-aquifer groundwater monitoring bias associated with seasonal recharge and "halo effects". DTSC has explained why additional testing is not necessary in order to be confident that chloroform concentrations will not rise above the RBTC level. EW-17 well construction details are clarified in Environ Errata Sheet, Page 10, Groundwater and Soil Gas Sampling Results – December 2008 Report (Environ 2009b) indicating that the EW-17 five foot well screen is completed within in 3 to 4 feet of A/B-aquitard material and 1 to 2 feet of overlying A-aquifer material. Also, see Responses to Comments 9 and 10 above, incorporated herein by reference.

Comment 11(b): To summarize, Signature asserts: DTSC is seriously mistaken when finding that EW-17 is not representative of the A-aquifer. (Section C.3.c., paragraph 1.)

Response to 11(b): DTSC does not agree that all of the other monitoring data collected from wells completed in the A-aquifer should be ignored and that EW-17 monitoring results should be used solely to represent A-aquifer conditions. DTSC's conclusions are based on well construction information, groundwater sampling characteristics, and the preponderance of the A-aquifer data collected during remediation and post remediation monitoring. All of this data is in the Administrative Record. See, for example, For example, the Final Remedy Completion Report, Table 1 and Figure 8 (Environ 2008) and Groundwater and Soil Gas Sampling Results December 2008, Table 1 and Figure 1 (Environ 2009).

Comment 11(c): To summarize, Signature asserts: Hitachi GST revised the description of EW-17 in the December 2008 Groundwater and Soil Gas Sampling Results indicating that the EW-17 well screen extends only a few inches into the overlying A-aquifer in the report text while the report table footnotes indicate that approximately 1.5 feet of screen occur in the A-aquifer. The Well EW-18 construction description is identical to that of EW-17, but the two wells have different groundwater recharge characteristics. DTSC has not provided any theory or data to explain the apparent difference between EW-17 and EW-18 purging characteristics and monitoring results. (Section C.3.c., 5-Bullets and Paragraph 2.)

Response to 11(c): The most likely explanation for the difference between EW-17 and EW-18 would be subtle differences in depth of penetration into the A/B-aquitard and the amount and extent of hollow-stem-auger smear. The elevated chloroform concentrations observed in the

December 2008 EW-17 groundwater sample is consistent with the elevated chloroform concentrations observed in the A/B-aquitard soil samples collected from the well screen zone during EW-17 well drilling. The well construction details indicate that the well screen and sand pack extend as much as 3 feet into the A-aquifer zone. DTSC's interpretation is that EW-17 is representative of A/B-aquitard materials and is based on well construction details, well recharge characteristics observed during well purging, and chloroform concentration results that contrast with well recharge characteristics and chloroform concentrations observed in nearby adjacent wells constructed solely within the A-aquifer. The most likely explanation for EW-17's apparent disconnection with the overlying A-aquifer is the recognized phenomenon of hollow-stem-auger "smear" or coating of the borehole wall adjacent to the well screen and overlying sand pack within the A-aquifer zone with low permeability clay from drilling into the A/B-aquitard zone. The borehole smear zone would limit or exclude the flow of A-aquifer groundwater into the well. An explanation for the recharge differences and chemistry differences observed between EW-17 and EW-18 is that the degree of "smearing" with aquitard material is less severe in well EW-18 than in EW-17.

Comment 11(d): To summarize, Signature asserts: Hitachi GST reported that diffusion is not a viable means of chloroform transport in the A/B-aquitard and thus cannot explain the elevated occurrence of chloroform in the December 2008 EW-17 groundwater monitoring results. (Section C.3.c., paragraph 3.)

Response to 11(d): Signature misapplies Hitachi GST's conclusion regarding molecular diffusion being a non viable transport mechanism of chloroform diffusion from the A/B-aquitard to the overlying A-Aquifer. Hitachi GST reported that diffusion of chloroform from the A/B-aquitard into the A-aquifer is not a viable means of transport, in the document titled "Final Chloroform Mass Estimates and Projected Future Groundwater Conditions, Chloroform Release Area" dated August 11, 2008. However, the analysis conducted by Hitachi GST does not preclude the diffusion of chloroform from aquitard sediments into a well constructed in the aquitard adjacent to the contaminated sediments. The fact that the EW-17 well screen is constructed directly in contact with contaminated aquitard sediments is the reason that the chloroform groundwater concentrations increased in this well.

Comment 11(e): To summarize, Signature asserts: If chloroform detected in EW-17 had originated by diffusion from Aquitard material into the well, then the concentration should be declining. (Section C.3.c., paragraph 4.)

Response to 11(e): DTSC expects the conceptual model of diffusion of chloroform from adjacent contaminated aquitard materials to be a slow process and the fact that it took approximately four (4) months for the chloroform to increase to the concentration observed is consistent with the conceptual model of the diffusion transport mechanism. DTSC does expect the concentration of chloroform in the A/B-aquitard to decline slowly with time.

Comment 11(f): To summarize, Signature asserts: The December 2008 chloroform results from EW-17 justify additional investigation and monitoring to confirm that the detected chloroform is originating from the A/B-aquitard materials. (Section C.3.c., paragraph 5.)

Response to 11(f): DTSC disagrees with this comment. The Administrative Record contains soil data collected from the A/B-aquitard material during construction of well EW-17 that adequately identifies the probable source of chloroform detected in EW-17. Additional groundwater monitoring or investigation of A/B-aquitard materials in this area is not necessary.

Comment 11(g): To summarize, Signature asserts: If DTSC continues to conclude that EW-17 is not representative of the A-Aquifer, then Hitachi GST should revise its final post remediation risk assessment presented in the Corrective Action Completion Report to not include the EW-17 concentration data. By excluding EW-17 from consideration as being representative of the A-aquifer, Hitachi GST has invalidated the post-remediation risk assessment. (Section C.3.c., paragraph 6.)

Response to 11(g): DTSC disagrees with this comment for the following reasons. The inclusion or exclusion of EW-17 chloroform concentration data from the Post Remediation Risk Assessment has no significant impact on the estimated health risk for the Chloroform Release Area. The soil gas measurements in the vicinity of EW-17 are the primary criteria for determination of health risk due to vapor intrusion to indoor air. All soil gas data for this area (as well as the rest of the remediated project area) remain well below the RBTCs set for each soil gas sample depth and all are well below the theoretical incremental lifetime cancer risk criteria of one in one million. The maximum concentrations of chloroform in groundwater due to seasonal or other fluctuations are significantly below the RBTCs and DTSC's Human and Ecological Risk Division (HERD) concludes that groundwater chloroform concentrations are not significant for the health risk of hypothetical future residents or any currently exposed population. See HERD's February 11, 2009 memorandum, incorporated herein by reference.

Comment 12: Hitachi Has Not Demonstrated Compliance with Soil Gas RBTCs

[February 13, 2009 letter, Section C.4.]

"DTSC's own guidance makes clear that in order to demonstrate compliance with soil gas cleanup levels, Hitachi must show that "steady-state" soil gas levels comply with the RBTCs:

> *"Confirmation soil gas sampling after the completion of soil vapor extraction should take place after steady state conditions are reached in the subsurface, which usually occurs within 12 to 16 months after system shutdown." (Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, Interim Final, DTSC 2005, p. 42).*

"DTSC's guidance is consistent with the Johnson-Ettinger model used by Hitachi to calculate RBTCs. The model includes a methodology to calculate the time to reach equilibrium in soil gas as a function of the distance from the source. Using Environ's assumed soil properties to calculate the site-specific RBTCs for soil gas, the time to reach equilibrium 1 meter from the source ranges from 2.5 to 46 years. These calculations show that it is not reasonable to

assume that soil gas concentrations measured 4 months after termination of the 2-phase extraction system represent steady state conditions.

"Neither Hitachi nor DTSC offers any technical basis for concluding that soil gas levels have reached steady-state. Instead, DTSC argues that soil gas had reached steady-state levels in relatively short periods of time ***at other sites*** *with entirely different geologic features. This fact is irrelevant to the question of when soil gas will reach steady-state levels at the Hitachi site.*

"In fact, by DTSC's own admission, the data from other sites that it seeks to rely upon has no relevance to this matter. In the CMS, Hitachi noted that

> *Based on experience, concentrations in groundwater and soil gas tend to increase or "rebound" to some extent several months after implementation of 2-PHASE™ Extraction.* ***The amount of rebound is site-specific and cannot be estimated with any certainty****. (page 45 of the CMS Report) (emphasis added).*

"DTSC approved the CMS without changes to this language. Thus, according to DTSC, rebound is a site-specific issue that cannot be determined by relying on data from other sites – particularly sites with dramatically different geology, such as those referenced by DTSC.

"Moreover, according to Hitachi, the actual data from the San Jose site demonstrates that it potentially will take years to reach steady-state conditions. In its report on the December 2008 sampling, Hitachi dismissed the significance of deeper soil gas detections because of "the very long time-frames (potentially years) for chloroform to migrate by diffusion from the water table at 25-30 feet to shallow soils at five to 10 feet bgs" Environ, Groundwater and Soil Gas Sampling Report, Jan. 5, 2009, p. 15. Thus, according to Hitachi it could take years for soil gas to reach steady-state levels.

"In fact, the actual site data proves that soil gas levels have not reached steady-state levels. As previously demonstrated by Signature, between August and October, soil gas levels more than doubled relative to groundwater, and between October and December 2008, soil gas levels once again doubled relative to groundwater. Attachment 8. This data clearly shows that soil gas and groundwater are not yet in equilibrium, and soil gas levels will continue to rise relative to groundwater.

"Apparently recognizing this disconnect between groundwater and soil gas, Hitachi in a very recent letter hypothesizes that the soil gas measured in December did not originate in the groundwater, but instead is from a soil source. Environ, Response to Comments, Jan. 16, 2009. Hitachi's theory directly contradicts its conceptual site model on which it has based both the remediation and the cleanup levels. Moreover, Hitachi offers no data to identify the nature and extent of this soil source, but nonetheless summarily concludes it is insignificant. Nor has Hitachi even attempted to determine how much these soil gas levels will rise once they are in equilibrium with groundwater.

*"Thus, DTSC's proposed decision once again relies on unsupported theories instead of actual site data. And yet again, DTSC refuses to require the simple testing that would prove or disprove its theory. Such adherence to hypothesis contradicted by **all** site data is contrary to DTSC's obligation to protect the health of future residents."*

DTSC's Response to Comment 12:

To appropriately respond to this comment, DTSC has separated it into sub-comments 12(a) – 12(f).

Comment 12(a): To summarize, Signature asserts: DTSC did not follow its own guidance document when evaluating the compliance with the soil gas cleanup levels. (Section C.4., paragraph 1.)

Response to 12(a): DTSC disagrees and finds its evaluation was consistent with the guidance, policy and well respected technical practices for the following reasons. DTSC's Vapor Intrusion Guidance Document (2004) recommends that stakeholders, upon completion of soil vapor extraction, conduct soil gas confirmation sampling after steady state conditions are re-established in the subsurface. The Guidance Document then recommends a waiting period of "12 to 16 months after system shutdown" for the confirmation sampling. The origin of the "12 to 16 months" was derived from the work by Johnson et al. (1999) where an algorithm is given for time to achieve "near-steady state" conditions along with a figure (Figure 3, page 397) depicting this relationship. The intent of the DTSC's Guidance Document was to alert stakeholders that confirmation samples should be collected after steady state conditions have been re-established before sites are granted closure. The Guidance Document is not regulation and hence does not impose any requirements or obligations on DTSC or stakeholders. Other technically appropriate approaches may exist and the Guidance Document is not intended to exclude other reasonable methodologies. For the Chloroform Release Area, the post-shutdown soil gas sampling has adequately evaluated the potential for contaminant "rebound". DTSC considered the approximate four (4) month equilibration duration between system shutdown and the December 2008 sampling event, along with the approximate two (2) month duration between the October 2008 sampling event and the December 2008 sampling event, to be adequate to evaluate soil gas concentration equilibrium. See Responses (b) through (e) below and pages 4-6 of the January 23, 2009 GSU memorandum.

Comment 12(b): To summarize, Signature asserts: Based on modeling, the time to reach equilibrium one meter from the source ranges from 2.5 to 46 years. Therefore, it is not reasonable to assume that soil gas concentrations measured 4 months after termination of the 2-phase extraction system represent steady state conditions. (Section C.4., paragraph 2.)

Response to 12(b): DTSC disagrees for the following reasons. Johnson et al. (1999), and hence the timeframes within DTSC's Guidance Document, may not be appropriate for the determination of "near-steady state" conditions. Johnson et al. (1999) utilizes vapor phase retardation in the "near-steady state" equation and provides a mechanism for the calculation of retardation. The retardation equation in Johnson et al. (1999) may be inappropriate for

determining time to steady state conditions. Pateris et al. (2002) provides an alternative approach for quantifying retardation and their study indicates that retardation factors for vapor phase chloroform will probably not exceed three (3.0) even at high pore saturations. Retardation of vapor movement is also discussed by Baehr (1987) and Shoemaker et al. (1990). Both of these authors concluded that vapor phase retardation decreases with increasing soil moisture, and that vapor phase retardation factors should not exceed aqueous phase retardation factors for moist soil. This contradicts the approach of Johnson et al. (1999). The Johnson approach indicates that retardation increases with increasing soil moisture and hence over predicts the time to reach steady state conditions. Additionally, the American Society for Testing and Materials (1995) recommends quantifying vapor phase retardation with the same approach as Pateris et al. (2002).

Hence, the timeframes of 2.5 to 46 years as offered by Signature for steady state equilibrium, which were probably calculated with Johnson et al. (1999), are not reasonable due to the issues raised in the above text. When using the retardation factors by Pateris et al. (2002) to the Hitachi site conditions, the time to adequate equilibrium is approximately four (4) months and DTSC is confident with this timeframe.

Comment 12(c): To summarize, Signature asserts: DTSC offers no technical basis for concluding that soil gas levels have reached steady state at the Hitachi GST site. (Section C.4., paragraphs 3 through 5.)

Response to 12(c): DTSC disagrees with this comment. Published studies of empirical vapor transport provide insight into the time frames needed to establish steady state conditions in the subsurface. Following is a summary of two studies that provide evidence that soil gas can establish equilibrium within four (4) months.

1) Borden Research Site. Field experiments were conducted at the Borden Research Site (Ontario) to study vapor transport in the vadose zone and it impact on groundwater quality. At what is known as the “Vapor Transport Site” at Borden, an immiscible-phase chlorinated solvent source was placed into the subsurface. This dense non-aqueous phase liquid (DNAPL) source was placed 0.3 meters below ground surface (bgs) and the base of the source was 2.2 meters above the seasonal high of the watertable. The vadose zone at Borden is mostly comprised of medium to fine grained sand, with a porosity of 0.33, which is lithologically similar to the upper vadose zone of the Chloroform Release Area. Monitoring of the source after emplacement indicated that the TCE, after 40 days, had a concentration of 180 µg/L almost 10 meters away from the source (Rivett, 1995).

2) Vaerlose Airbase. Field experiments were conducted at Vaerlose Airbase, Denmark to provide high quality data that could be used for the validation of advanced three-dimensional vapor transport models. A light non-aqueous phase liquid (LNAPL) source of an artificial hydrocarbon mixture with CFC-113 added as a conservative tracer was placed 0.8 – 1.3 meters bsg. Groundwater at the site is approximately 3.0 meters bgs The vadose zone at Vaerlose is mostly comprised of glacially-derived sand and gravel,

> with an approximate porosity of 0.32, which is, again, lithologically similar to the upper vadose zone of the Chloroform Release Area. Soil gas monitoring indicated that CFC-113 had migrated laterally 12 meters from the source at 70 to 100 days after source emplacement (Christophersen et al., 2005).

These empirical studies indicate that vapors, in sandy conditions, can migrate by diffusive flow many meters in four (4) months, faster than would be indicated by Johnson et al. (1999). Hence, due to these empirical studies, "rebound" of residual contamination, if present, at the Chloroform Release Area should be observed within four (4) months.

Likewise, published studies of theoretical vapor transport provide insight into the time frames needed to establish steady state conditions in the subsurface. One study indicates that soil gas can establish equilibrium within four months. Finite element numerical modeling indicates that 1,1,1-TCA at concentrations of one percent of its source concentration will migrate 5 meters away from its source within 14 days (Mendoza and Frind, 1990). The model utilized a porosity of 0.35 and a volumetric water content of 0.06. The porosity of the model is similar to the upper vadose zone of the Chloroform Release Area but the volumetric water content of the model is lower than the moisture observed at the Chloroform Release Area. While not an exact match lithologically to the Chloroform Release Area, this theoretical study indicates that vapors can migrate by diffusive flow a few meters in two weeks, faster than would be indicated by Johnson et al. (1999). A similar theoretical study with comparable results concerning vapor migration was conducted Conant et al. (1996). Hence, due to these theoretical studies, "rebound" of residual contamination, if present, at the Chloroform Release Area should be observed within a short timeframe.

All of the empirical studies cited above support DTSC's conclusion and finding that four (4) months of monitoring in the Chloroform Release Area was adequate to determine that chloroform levels would not increase above the RBTC level.

Comment 12(d): To summarize, Signature asserts: The time to reach equilibrium is site specific and can take months, if not years, to reach steady state levels. (Section C.4., paragraphs 6, 7, 8.)

Response to 12(d): DTSC disagrees with this comment. Based on evidence in the Administrative Record and for reasons cited in Responses (a) through (c) above, incorporated herein by reference, DTSC finds that equilibrium has been attained within the Chloroform Release Area. See also DTSC's rejection of Signature's "relative ratio" approach to equilibrium in Response to Comment 13(b) below.

Comment 12(e): To summarize, Signature asserts: The increases in post remediation soil gas concentrations are indicative of non-equilibrium and contaminant sources still exist in the vadose zone. (Section C.4., paragraphs 7 and 8.)

Response to 12(e): DTSC disagrees with this comment. Some soil gas sampling locations have shown minor rebound but enough time has transpired to observe the magnitude of this

post remediation rebound and the concentrations associated with this post remediation rebound are below the soil gas screening levels. Hence, the soil gas remediation goals have been met and any residual contamination in the vadose zone is viewed as insignificant. In any event, regardless of the time required for soil gas concentrations to reach final "steady state", the data demonstrate that the chloroform concentrations in shallow soil gas are stable and will only decline further over time. This conclusion was confirmed by the deep soil gas measurements that were performed in December 2008. In these measurements, the concentrations of chloroform just above the water table (at 23-25 feet bgs) were found to be only a fraction of the soil gas concentration RBTCs set for shallower soil at 15 feet bgs. These deep soil gas results indicate that there is no significant mass of chloroform in the deeper soils or groundwater that could provide a source that would cause the shallow soil gas concentrations to increase in the future. Instead, the concentrations in the shallow soil gas will decline from the relatively stable levels observed in October and December 2008, to even lower concentrations, which will be even further below the approved RBTC.

Comment 12(f): To summarize, Signature asserts: Actual site data proves that soil gas levels have not reached steady-state levels. DTSC relies on unsupported theories and refuses to require simple testing to prove or disprove its theories. (Section C.4., paragraph 9.)

Response to 12(f): DTSC disagrees with this comment. DTSC relied upon numerous well respected, published studies to support our technical decisions. For example, see Responses (a) through (d) above and references cited in Response to General Comment 1 in GSU's January 23, 2009 memorandum (Rivett,1995, Christophersen et al.2005, and Mendoza and Frind 1990). Additionally, DTSC required two confirmation soil gas sampling events in October and December 2008 to evaluate soil gas equilibrium pursuant to the timeframes inferred by Johnson et al. (1999) but with the approach to vapor phase retardation from Pateris et al. (2002).

Comment 13: The Groundwater RBTCs Are Based on Assumptions Directly Contrary to the Site Data

[February 13, 2009 letter, Section C.5.a.]

"As Signature previously has shown, Hitachi raised the groundwater RBTC from 52 ug/L (in the Project EIR) to 380 ug/L (in the proposed Closure Report) based on assumptions that are contrary to the site data. Attachment 7, p. 5. Not only does Hitachi refuse to acknowledge these flaws, but it has also seriously misrepresented its actions in revising the model. According to Hitachi – and repeated by DTSC in its statement of basis – the increase in RBTCs was attributable to the substitution of actual site data for default parameters. Attachment 6.

"While it is true that Hitachi did slightly change certain input parameters based on site data, these changes had almost no impact on the increase in RBTC. Instead, virtually all of the increase was attributable to a change in the soil classification type. However, while the soil classification in the initial model was based on site data, the revised classification is contrary to the actual data. Here are the facts:

- *In its initial model, Hitachi used default values for bulk density (1.62 g/cm3), total porosity (.387) and water content (.213). In its revised model, Hitachi used slightly different values for these parameters based on site-specific data for bulk density (1.59 g/cm3), total porosity (.41) and water content (.33). These changes account for less than 5% of the increase in the RBTC from 52 ug/L to 380 ug/L. Attachment 6.*
- *In its initial model, Hitachi classified deeper soils as sandy loam based on site specific data. In its revised model, Hitachi re-classified soils at the water table as silty clay, allegedly based on other site specific data. Hitachi's change is directly contrary to the data in its boring logs, which show layers of sandy silt directly above the water table. See Attachment 12. This improper change in soil classification accounts for over 95% of the increase in the RBTC. It also causes an error in the model that cannot be cured without changing the soil classification. Attachment 6.*
- *In the Completion Report, Hitachi acknowledges that soil types "vary across the site," and that "observed natural soils below the fill consist of silty clays, clayey silts, and sandy silts to the top of the A-Aquifer." Environ, Final Remedy Completion Report, Nov. 17, 2008, p. 10. Accordingly, by changing the soil classification in the RBTC model from sandy loam to silty clay, Hitachi selected the least conservative value based on actual site conditions. This is a direct violation of EPA guidance on the use of the Johnson-Ettinger model: "we recommend that care be taken to ensure reasonably conservative and self-consistent model parameters are used as input to the model." (OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Appendix G, Considerations for the use of the Johnson and Ettinger Vapor Intrusion Model (2002), at p. G-3.*

"Thus, the change in the groundwater RBTC from 52 ug/L to 380 ug/L was almost entirely based on modeling assumption that were inconsistent with actual site data. Hitachi's and DTSC's statements to the contrary are simply untrue. Moreover, as previously demonstrated, the revised RBTC model does a very poor job at predicting soil gas concentrations and uniformly and significantly underestimates the actual observed soil gas levels at the site. Attachment 6.

"In memoranda dated February 10 and February 11, 2009, DTSC purports to respond to Signature's comments identifying these flaws in the revised RBTC model. In this "response," DTSC does not dispute that over 95% of the increase in RBTC was due to the change in soil classification, and DTSC provides no data supporting the assertion that Hitachi used a conservative soil classification type. Instead, DTSC claims that none of these flaws matters, because 1) future groundwater concentrations are irrelevant where there is actual soil gas data; and 2) calibration of the model is unnecessary, because it is a conservative screening tool. DTSC's attempt to ignore the serious flaws in Hitachi's model lacks any scientific basis and is directly contrary to EPA guidance on use of the Johnson-Ettinger model.

"First, DTSC's claim that the groundwater model is irrelevant where actual soil gas data exists assumes that Hitachi has in fact developed steady-state soil gas levels. As demonstrated above, Signature, Hitachi and DTSC all agree that soil gas levels cannot have returned to

steady-state in the short period of time since shut-down of the remediation system. As a result, the only evidence presented by Hitachi of steady-state soil gas levels are predictions from its groundwater RBTC model.

"Second, DTSC's position that it is not necessary to calibrate the model is directly contrary to EPA guidance on the use of this particular model, which was developed by EPA. In this guidance, EPA unequivocally calls for calibration of the model if the model is to be used as a site-specific tool – as Hitachi does in the present matter. Id. at p. G-8. DTSC's statement to the contrary therefore is contrary to accepted scientific procedures and to common sense.

"Moreover, EPA also states that the model should not be used for any purpose at sites where the water table has significant seasonal fluctuations and the capillary fringe likely is contaminated. Id. at p. G-2. This is because the model does not account for addition flux from a contaminated capillary fringe. The water table fluctuates to a significant extent at the Hitachi site, and Hitachi has already concluded that the capillary fringe is contaminated. Final Remedy Completion Report, Nov. 17, 2008, p. 21. As a result, use of the Johnson-Ettinger model is inappropriate for any purpose at this site, and certainly cannot be justified as the basis for finding compliance with cleanup goals.
The revised RBTC model therefore is both deeply flawed and, according to EPA, not applicable to the Hitachi site. As a result, the established groundwater RBTCs for the site are not adequate to protect human health."

DTSC's Response to Comment 13:

To appropriately respond to this comment, DTSC has separated it into sub-comments 13(a) – 13(g).

Comment 13(a): To summarize, Signature asserts: Raising the RBTC for groundwater from 52 ug/L to 380 ug/L is based on assumptions that are contrary to site data. The RBTCs developed for Building 028J are based on false assumptions regarding soil type representative of subsurface conditions. Selection of "Silty Clay Loam" was not appropriate and use of the soil type causes an error in the model that can not be cured without changing the soil type. (Section C.5.a.,, paragraph 1, 2 and 3 bullets.)

Response to 13(a): DTSC disagrees. As discussed in the Final Statement of Basis issued on January 14, 2009, the evolution of the chloroform groundwater RBTC value of 52 µg/l to 380 µg/l is based on standard site investigation procedures that reflect sequential improvement in the level of site characterization and integration of the site specific data into development of the RBTC. The original RBTC value of 52 µg/ was developed in January 2005 using general (non-site specific) assumptions for the purpose of screening-level risk evaluation prior to full characterization in the vicinity of Building 028J chloroform contamination. The objective of the screening level RBTC was to identify potential areas requiring further investigation and/or mitigation prior to site redevelopment. After mid-2005, site investigation activities were conducted to collect site specific soil, soil gas, and groundwater data. The site specific data was used to develop the final site specific RBTC value of 380 µg/l. The development of the

screening level RBTC and subsequent development of the site specific final RBTC is the recognized approach for conducting investigation and remediation projects.

During the development of the final site specific RBTC for groundwater at the Building 028J area described in the August 2007 Final Remedy Completion Report for the Redevelopment Property, Hitachi GST used site specific data consisting of 15 soil borings, 18 soil samples tested for soil physical parameters, and extensive tests of soil/soil gas/ and groundwater for chloroform and other chemicals to improve the accuracy and appropriateness of the RBTCs. Hitachi GST modeled the subsurface conditions to reflect the lithology observed in soil borings. Hitachi GST represented the site with three predominant layers consisting of silty clay from 0 to 7 feet below ground surface (bgs), sandy loam from 7 to 12 feet bgs, and silty clay loam from 12 to 15 feet bgs. Hitachi GST conservatively assumed the water table could rise as high as 15 feet bgs based on reported high water observation in the broader site's longer historic groundwater record. The modeling of soil vapor migration was based on the water table and capillary fringe that formed across the silty clay loam unit. The Johnson and Ettinger Model calculates a capillary fringe that is in excess of 12 to 15 foot layer thickness and requires a manual adjustment of the capillary fringe thickness in the model to be the 3 foot thickness of the 15 to 12 foot bgs layer. With the manual adjustment of capillary fringe thickness in layer 3, the Johnson and Ettinger Model does function properly and does not indicate an error or require changing the soil type.

The selection of the 15 foot depth to groundwater and the use of Silty Clay Loam to represent the soil conditions in 12 to 15 foot bgs zone of the Johnson and Ettinger Model is appropriate and conservative. The soil type matches conditions observed at the Building 028J Site.

Comment 13(b): To summarize, Signature asserts: The RBTC model does a very poor job of predicting soil gas concentrations and uniformly underestimates the observed soil gas concentrations observed at the site. (Section C.5.a., paragraph 3.)

Response to 13(b): Signature's assertion that soil gas concentrations are uniformly underestimated is based on the unusual and unproven approach of attempting to compute an equilibrium ratio of chloroform in soil gas to groundwater, by comparing parings of soil gas and groundwater concentration data collected prior to the commencement of remediation. Based on that comparison, Signature's consultants assert that, on the average, equilibrium soil gas concentrations will be three-to-six percent of groundwater concentrations. DTSC disagrees for reasons discussed below.

Signature's consultants assert that soil gas RBTC concentrations are less than those estimated using their three-to six percent of groundwater ratios. Signature's concentration ratio approach is invalid because it uses data representative of pre-remediation conditions that are fundamentally different than the post remediation conditions. Prior to remediation there were two sources of chloroform affecting soil gas concentrations including: 1) chloroform absorbed directly to vadose zone soils as contaminated pore water percolated downward through the vadose zone, and 2) chloroform dissolved in the underlying groundwater. Pre-remediation soil gas concentrations represent equilibrium with both sources. In these circumstances, soil gas

concentrations are not directly proportional to groundwater concentrations alone. Therefore, Signature's ratio approach is invalid.

Signature has also argued that soil gas at 5 and 10 feet should be changing in response to the observed changes in groundwater and alleges that absence of the coordinated change indicates that the chloroform soil gas and groundwater dataset is compromised. The January 16, 2009 letter from Environ to Mr. Paul Ruffin regarding "Response to Comments-January 9, 2009 S.S. Papadopulos & Associates Letter to Stuart I. Block, Chloroform Release Area at Former Building 028-J Site" responds to this argument and points out that the argument incorrectly presumes that groundwater is reasonably proximate to the soil gas sampling depths, and that soil gas is relatively free to migrate and is highly mobile throughout the entire vadose zone. In this case, the groundwater relatively deep (28 to 31 feet bgs) while the referenced soil gas locations are relatively shallow (5 to 10 feet bgs). Separating the two zones is a moist silty clay that substantially inhibits the movement of chloroform upward through the soil as a soil gas. Given the distance between groundwater and shallow soil gas zones (approximately 18 to 26 feet), the soil gas concentration in shallow soil will slowly decrease following the decrease in the underlying groundwater and would not be expected to occur simultaneously. Thus, DTSC disagrees with Signature's argument that the dataset is biased and unrepresentative.

The development and basis of the RBTC model is described in December 3, 2008 letter from Environ to Mr. Paul Ruffin regarding "Response to Comments-November 18, 2008 S.S. Papadopulos & Associates Letter, Critical Review of Risk Based Target Concentraions (RBTC) Determinations for Hitachi, Building 028-J Site" and is based on conservative assumptions including a shallow depth to contaminated groundwater of 15 feet that has not been observed to date during site investigation and remediation activities. The assumption of 15 foot depth to groundwater conservatively places the hypothetical groundwater source close to the surface and conservatively estimates groundwater concentrations and soil gas concentrations at 5 and 10 feet that pose an acceptable health risk.

The actual depth to groundwater at the site is deeper than assumed in the RBTC model. The ratio between actual measured soil gas concentrations at the 5 and 10 foot depths and groundwater concentrations at approximately 28 feet are less than what the RBTC model would predict because of the greater actual groundwater depth versus the RBTC model 15-foot depth to groundwater assumption.

The post remediation A-aquifer groundwater concentration in the plume area was approximately 133 µg/l (Corrective Action Completion Report, section 7.1.3) and the maximum post remediation soil gas concentrations collected at 5 and 10 feet were 0.47 µg/l and 0.78, respectively. The measured site data are less than the RBTC model values of 380 µg/l for groundwater and 1.1 µg/l and 1.9 µg/l for soil gas at 5 and 10 feet bgs, respectively . DTSC does not accept the use of soil gas and groundwater ratios to evaluate accuracy of the RBTC model or site remediation success.

Comment 13(c): To summarize, Signature asserts: DTSC has not provided any data supporting the assertion that Hitachi GST used a conservative soil classification type in the development of the final site specific RBTC. (Section C.5.a., paragraph 4.)

Response to 13(c): DTSC has previously provided Signature with references to project documents that describe the site geology and assumptions used in the development of the final site specific RBTCs. See again, for example, the December 3, 2008 letter from Environ to Mr. Paul Ruffin regarding "Response to Comments-November 18, 2008 S.S. Papadopulos & Associates Letter, Critical Review of Risk Based target Concentrations (RBTC) Determinations for Hitachi, Building 028-J Site". This document describes the conservative basis used to select the soil classification type used in the RBTC model.

Comment 13(d): To summarize, Signature asserts: The only evidence that the site has achieved health protective steady state soil gas levels are predictions from the groundwater RBTC model because actual soil gas levels measured have not reached steady state. (Section C.5.a., paragraph 5.)

Response to 13(d): As described in DTSC's Responses to Signature's Section C.4. (Comment 12 in this Response to Comments document), the post remediation soil gas sample data collected to date are representative of subsurface conditions and appropriate for evaluation of corrective action completion. Data and analyses in the Administrative Record demonstrate that gas levels have reached steady state. See, for example, Final Remedy Completion Report, Table 4 and Figure 16 (Environ 2008) and Groundwater and Soil Gas Sampling Results December 2008, Table 4 and Figure 2 (Environ 2009).

Comment 13(e): To summarize, Signature asserts: The RBTC model used to estimate the final site specific RBTCs requires calibration. (Section C.5.a., paragraph 6.)

Response to 13(e): DTSC disagrees with this comment for the following reasons. The RBTC model used to estimate the final site specific RBTCs were calibrated to represent site conditions by the use of site specific soil property values and soil stratigraphy. The absence of structures over the site area precluded the ability to collect indoor air samples to generate indoor air data for the purpose of Johnson Ettinger Model calibration. The final site specific RBTC model results reflect site specific conditions to conservatively estimate and protect chloroform health risk.

Comment 13(f): To summarize, Signature asserts: EPA guidance indicates that groundwater level fluctuations observed and expected at the site preclude the use of the Johnson Ettinger Model for development of cleanup goals. (Section C.5.a., paragraph 7.)

Response to 13(f): DTSC disagrees for the following reasons. The groundwater levels observed and expected at the site are not considered to be outside of the range that can be reasonably modeled using the Johnson Ettinger Model. The use of the shallowest historic level conservatively models the worst case risk exposure scenario. The Johnson Ettinger Model is

commonly used to evaluate similar sites in the area and its applicability is recognized in the regulatory and engineering community.

Comment 13(g): To summarize, Signature asserts: The revised RBTC model is deeply flawed and the established RBTCs are not adequate to protect human health. (Section C.5.a., paragraph 8.)

Response to 13(g): DTSC disagrees. The final site specific RBTCs incorporate site specific soil property values and soil stratigraphy. The RBTCs were developed using an acceptable modeling approach designed to be protective of human heath. See, GSU's and HERD's February 11, 2009 memoranda, incorporated herein by reference.

Comment 14: Hitachi's Mass Calculations Are Demonstrably False

[February 13, 2009 letter, Section C.5.b.]

"Prior to commencing the remediation, Hitachi calculated the mass of chloroform in soil and groundwater. As reported in the CMS, Hitachi estimated .83 pound of chloroform in groundwater and 2.64 pounds of chloroform in soil prior, for a total of 3.47 pounds of pre-remediation mass. CMS, Table E.2 By June 2008, however, after less than one year of operation, the remediation system had removed 6.7 pounds of chloroform from the subsurface – twice as much as Hitachi claimed was present. Attachment 5, at p. 2.

"As previously demonstrated by Signature, the only technically plausible explanation for this discrepancy, is that there is a continuing source of chloroform that is gradually feeding dissolved chloroform into the groundwater. Attachment 7 and Ex. E thereto. However, the presence of this continuing source presented a major obstacle to Hitachi's efforts to discontinue the remediation. Hitachi attempted to solve this problem by simply re-calculating the amount of pre-remediation chloroform mass to equal slightly less than the amount removed through June 2008.

"In its August 2008 modeling report, Hitachi raised the calculated pre-remediation mass to 6.74 pounds. Environ, Modeling Report, August 11, 2008, Table 7. As repeatedly demonstrated by Signature – and never disputed by Hitachi or DTSC – Hitachi accomplished this sleight-of-hand by simply assuming that the average pre-remediation concentration of chloroform in groundwater was four times higher than the actual data. Attachment 5, at pp. 2-3. Without this undisputedly false assumption, Hitachi is unable to offer any explanation for how the remediation system could remove seven pounds of chloroform without the existence of a continuing source.

"Even with its false assumption, Hitachi could not explain the extraction rates. After re-calculating the initial chloroform mass, Hitachi claimed there was .3 pound of chloroform remaining in groundwater as of June 2008. Id. However, the system then went on to remove more than an additional .5 pound of chloroform from groundwater between June and August 2008. Id. Even more troubling, the system was still removing .05 pound of chloroform mass per

week at the time it was shut down, once again demonstrating that Hitachi's mass calculations were patently false. Id. Hitachi has never even attempted to explain these discrepancies, because there is no explanation consistent with Hitachi's implausible conceptual site model.

"Despite this undisputed and clear flaw in Hitachi's calculations and conceptual site model, DTSC has never requested an explanation or further sampling to resolve these issues. Instead, DTSC has simply ignored the glaring inconsistencies, and in so doing abandoned any pretence of objective scientific review."

DTSC's Response to Comment 14:

To appropriately respond to this comment, DTSC has separated it into two sub-comments 14(a) – 14(b).

Comment 14(a): To summarize, Signature asserts that discrepancy between estimated initial chloroform mass presented in CMS (3.47 pounds)and estimated initial chloroform mass presented in June 2008 (6.7 pounds) indicates the presence of a continuing source of chloroform mass.

Response to 14(a): DTSC disagrees with the assertion that initial chloroform mass estimate discrepancies indicate presence of continuing source of chloroform for the following reasons. The sequential estimate of total initial chloroform mass changed from an estimate of 3.47 pounds (pre-remediation) to 6.74 pounds (June 2008 Modeling Chloroform Mass Estimate Report) and then to 7.27 pounds (Corrective Action Completion Report) are estimates that were revised through out the remediation process by incorporating additional information. The initial CMS mass estimate incorporated and average chloroform groundwater concentration of 144 ug/l and the revised June 2008 estimate used a revised initial average chloroform concentration of 448 ug/l average. The process of revising estimated initial chloroform mass by incorporating additional information generated during the investigation and remediation process is an acceptable practice. Signature's allegations of evidence of the presence of continuing source of chloroform mass remaining after remediation using arguments based on discrepancies between various initial chloroform mass estimates are not valid. Issues such as post remediation residual chloroform mass remaining in soil, soil gas, and groundwater are more appropriately addressed using sample concentration data. Soil, soil gas, and groundwater concentration data do not suggest the presence of continuing source of chloroform that was not addressed by the remediation process. The data do not indicate that any additional information is needed to evaluate post remediation chloroform concentrations.

Comment 14(b): To summarize, Signature asserts that discrepancies between the 0.3 pound of chloroform remaining in groundwater as of June 2008 and subsequent system removal of 0.5 pounds of chloroform from groundwater between June and August 2008 is evidence of continuing source of chloroform.

Response to 14(b): DTSC disagrees with the assertion of evidence of continuing source of chloroform. The June 2008 estimate of remaining A-aquifer chloroform mass can not be directly

compared to the June and August 2008 system chloroform mass removal estimate because system mass removal included mass from vadose zone and mass from A/B aquitard wells. As stated previously, post remediation residual chloroform mass remaining in soil, soil gas, and groundwater are more appropriately addressed using post remediation sample concentration data.

Comment 15: DTSC Has Failed to Require Sampling Necessary to Establish Hitachi's Technical Theories

[February 13, 2009 letter, Section C.5.c.]

"As discussed above, as recently as November 2008, Hitachi conceded that well EW-17 was screened in, and captured groundwater from, the A-aquifer. Only after the December sampling of well EW-17 revealed chloroform concentrations far in excess of RBTCs did Hitachi claim that well EW-17 was not screened in, and did not capture water from, the A aquifer. Hitachi's revisionist description of well EW-17 is directly contrary to the boring logs prepared by Hitachi's own consultant.

"Nonetheless, DTSC has uncritically embraced Hitachi's attempted rationalization for ignoring the data from well EW-17. DTSC has done so without even requesting the simple testing that would confirm or disprove Hitachi's theory. Ironically, DTSC insists that it will only consider actual data in its determination of whether cleanup goals have met, while at the same time ignoring the actual data showing that cleanup goals have not been met.

"Nor is this the only example of DTSC's aversion to actual data. Indeed, virtually every finding on which DTSC bases its approval is based on theories that have never been proven with actual data, and for which DTSC refuses to require the simple testing that could confirm these theories. Examples of such provable – but as yet unproven – theories include:

- *Hitachi's denial of the halo effect;*
- *Hitachi's denial that groundwater concentrations will rebound when the water table falls;*
- *Hitachi's implausible mass calculations;*
- *Hitachi's denial of data showing extracted groundwater exceeded RBTCs;*
- *Hitachi's claim that is it impracticable to remediate to MCLs;*
- *Hitachi's soil gas predictions based on its poorly calibrated model;*
- *Hitachi's theory that recent soil gas rebound is attributable to a soil source;*
- *Hitachi's claim that there is no continuing source;*

"Signature has twice proposed to conduct this sampling on its own, and twice Hitachi has refused permission, despite Signature's express contractual right to conduct such sampling. See Attachment 7 at Exs. A-1, A-2 and B; Attachments 13-14. If Hitachi truly believed what it is claiming, it would welcome the sampling that Signature has proposed, as it would confirm Hitachi's theories. That Hitachi has refused Signature access for this sampling indicates that Hitachi has no confidence in its own technical theories.

"While it is understandable that Hitachi does not wish to test its tenuous theories through sampling, there is no credible regulatory or scientific reason that DTSC would willingly forgo this sampling. DTSC's steadfast opposition to further sampling throughout this project represents the abdication by DTSC of its duties to protect human health and the environment and the rejection by DTSC of sound scientific practice."

DTSC's Response to Comment 15:

To appropriately respond to this comment, DTSC has separated it into sub-comments 15(a) – 15(d).

Comment 15(a): To summarize, Signature asserts: Chloroform detected in December in EW-17 indicates that the RBTC has not been achieved and that additional investigation is needed. (Section C.5.c., paragraphs 1 and 2.)

Response to 15(a): DTSC disagrees. Well EW-17 is recognized to be screened in A/B aquitard soils that contain the highest chloroform concentrations observed during the site investigation. Well EW-17 displays groundwater recharge characteristics that are markedly less transmissive than wells completed solely in the A-Aquifer and indicate that the well is not in good communication with the A-aquifer. The most likely explanation for the isolation of well EW-17 from the A-aquifer is the phenomenon of hollow-stem-auger smear associated with installation of EW-17 approximately 3 to 4 feet into A/B-aquitard fat clay. The hollow-stem-auger smears the low permeable clay up the borehole wall during the drilling process. The smeared clay can act as a barrier to groundwater flow similar to the underlying aquitard material. The hollow-stem-auger drilling for the 5-foot wells screen installed 3 to 4 feet into the A/B-aquitard material likely produced the 2 to 3 feet of of smearing necessary to isolate the well from the the overlying A-aquifer. The detection of the elevated chloroform in EW-17 is most likely related to the low flow characteristics of the well which prevents the influx of A-aquifer groundwater and the diffusion of chloroform into the well from the adjacent recognized chloroform containing A/B-aquitard sediments. The detection of elevated chloroform in EW-17 reflects the elevated concentrations of chloroform detected in the A/B-aquitard sample collected from the well screen area. The detection of chloroform in EW-17 does not negate or reject the A-aquifer groundwater dataset that redundantly demonstrates that the A-aquifer concentrations have been reduced to levels below final site specific RBTC. See also Response to Comment 11, incorporated herein by reference.

Comment 15(b): To summarize, Signature asserts: DTSC has not appropriately required additional investigation to evaluate issues identified by Signature consisting of the; halo effect , potential groundwater chloroform concentration rebound associated with falling water table, initial chloroform mass estimate, Signature's estimation of extracted groundwater chloroform concentration, impracticability to achieve MCLs, accuracy of RBTC model, soil gas rebound source, and continuing chloroform source. (Section C.5.c., paragraph 3 and 8 bullets.)

Response to 15(b): The technical issues raised by Signature have been addressed in previous documents in the Administrative Record such as the memoranda prepared by DTSC's GSU and Responses to Comments 9 through 15(a) incorporated herein by reference. Issues raised by Signature, such as the alleged 'halo effect", speculative groundwater rebound, and the accuracy and significance of chloroform mass estimates, generally lack merit, and are not based on published peer reviewed studies. DTSC's GSU previously commented on inaccurate estimation of extracted groundwater chloroform concentration and the GSU does not recommend any additional investigation to address this allegation. (See GSU Memoranda dated January 23, 2009 and February 11, 2009.) The issue of the impracticability to achieve chloroform MCLs cannot be resolved by additional site investigation. The existing data indicate that chloroform MCLs will eventually be achieved as a result of seasonal groundwater recharge and advective groundwater flow. (See the February 11, 2009 GSU and HERD memoranda.) Signature's assertion that the RBTC model is flawed and requires additional calibration is not accepted and does not require additional investigation. Signature's claim that soil gas rebound is significant is not supported by site data and does not require additional investigation. Signature's claim that site data indicate the presence of additional persistent chloroform source is not supported by site remediation data and does not require additional investigation.

Comment 15(c): To summarize, Signature asserts: Hitachi GST has refused permission to conduct investigations on the Chloroform Release Area and that Hitachi GST does not have confidence in its technical theories regarding the site. (Section C.5.c., paragraph 4.)

Response to 15(c): DTSC considers the site characterization and remediation at the Chloroform Release Area to be adequate and appropriate for determining that corrective action is complete. A private contractual dispute is not relevant for DTSC's decision making. Signature's speculation about Hitachi GST's motives is not relevant.

Comment 15(d): To summarize, Signature asserts: DTSC has opposed further sampling throughout the project. (Section C.5.c., paragraph 5.)

Response to 15(d): This comment is not true. DTSC considered Signature's previous comments and integrated them into the design of the December 2008 soil gas and groundwater investigation activity. DTSC does not believe that additional investigation activities are necessary in order to demonstrate that the corrective action is complete. See further discussion about requests for additional sampling in Responses to Comments 9(e), 9(f), and 10(c), incorporated herein by reference.

Comment 16: The Determination Requires a Subsequent EIR

[February 13, 2009 letter, Section D.1.]

"DTSC's January 2009 Addendum (the "Addendum") to its November 2007 Initial Study and Negative Declaration (the "Negative Declaration") does not provide adequate CEQA review for the Corrective Action Complete Determination (the "Determination"). The Determination requires a subsequent EIR."

DTSC's Response to Comment 16: Signature asserts that DTSC's determination that corrective action is complete requires a subsequent EIR. DTSC's does not agree and believes that the Initial Study, Negative Declaration and Addendum provide adequate CEQA review and DTSC does not need to prepare a subsequent EIR for reasons discussed in Responses to Comments 17 through 22 below, incorporated herein by reference.

Comment 17: As a Responsible Agency, DTSC Must Assess the Determination Against the City's EIR

[February 13, 2009 letter, Section D.1.a.]

"In June of 2005, the City of San Jose certified the Final Environmental Impact Report ("EIR") for the Hitachi Campus and Mixed-Use Transit Village Project (the "Project"). The Draft EIR identifies DTSC among the agencies that are expected to rely on the Final EIR in issuing discretionary approvals for the environmental remediation required for the Project. DTSC's discretionary approval authority over the RCRA permit modification, the chloroform corrective action and the Determination makes DTSC a "responsible agency" pursuant to CEQA. See Cal. Pub. Res. Code §21069; CEQA Guidelines §§15381, 15366. As a responsible agency, CEQA requires DTSC to determine whether the EIR provides adequate CEQA review for each of DTSC's actions, and if not, to prepare a subsequent EIR to the extent permitted by CEQA. See CEQA Guidelines §15096(e)."

DTSC's Response to Comment 17:

Signature asserts that DTSC is a responsible agency and it must assess its determination against the City's EIR. DTSC disagrees and believes that it does not need to assess its corrective action determination against the City's EIR for reasons discussed in the consolidated response to Comments 17 and 18 below, incorporated herein by reference.

Comment 18: DTSC Improperly Treated the Chloroform Corrective Action as a Separate Project in the Negative Declaration

[February 13, 2009 letter, Section D.1.b.]

"Instead of relying upon the EIR as required, DTSC impermissibly defined Hitachi's chloroform corrective action as a separate "project" for purposes of CEQA, and prepared the Negative Declaration rather than proceeding under the EIR. This approach violated the well-established CEQA principle that the "project" that must be evaluated is the "whole of the action." See CEQA Guidelines §15378(a). Under CEQA, the term "project" refers to "the activity which is being approved and which may be subject to several discretionary approvals … the term 'project' does not mean each separate approval." Id. §15378(c); see Association for a Cleaner Env't v. Yosemite Community College Dist. (2004) 116 Cal.App.4th 629, 637 (finding that the closure and removal of a firing range included cleanup activities related to that closure). In preparing the Negative Declaration based on the premise that the corrective action was the "project"

(rather than a component of the Project), DTSC illegally circumvented its role as a responsible agency under the Project EIR. DTSC's past transgression, however, does not relieve DTSC of its responsible agency role in connection with the remaining DTSC discretionary approvals for the Project, including the Determination."

DTSC's Response to Comment 18:

To summarize, Signature asserts DTSC impermissibly defined Hitachi GST's corrective action in the Chloroform Release Area as a separate "project" for purposes of CEQA and that DTSC should have proceeded under the City's EIR instead of DTSC's Negative Declaration. DTSC disagrees with this assertion and believes that it properly evaluated the installation and operation of the soil vapor extraction system as a project pursuant to the 2007 Initial Study and Negative Declaration and 2009 Addendum for reasons discussed in the consolidated response to Comments 17 and 18 below.

Consolidated Response to Comments 17 and 18:

The assertions set forth in Comments 17 and 18 are (a) not timely; (b) incorrect, (c) insubstantial, and (d) DTSC satisfied the goals of CEQA more effectively by acting as lead agency and preparing an Initial Study and Negative Declaration.

(a) The comments are not timely. The comments are not timely because they are raising objections to a previous decision by DTSC and the public comment period and statute of limitations for challenging that decision have expired. This public comment period concerns DTSC's proposed decision to determine that corrective action is complete for the Chloroform Release Area. Comments 17 and 18 object to DTSC's 2007 Negative Declaration that was prepared to support DTSC's 2007 decision to approve the remedy set forth in the Corrective Measures Study. DTSC circulated the Initial Study/Negative Declaration for comment from August 31, 2007 through October 15, 2007. According to the Governor's Office of Planning and Research, State Clearinghouse (SCH) records, the documents were circulated to, among others, the City of San Jose, which was the lead agency for the 2005 EIR. According to DTSC's and the SCH's records, no comments on the Negative Declaration were received. DTSC approved the project and filed a Notice of Determination with the SCH on November 28, 2007. No legal challenges were filed before the expiration of the statute of limitations period. Because no party brought a timely lawsuit contesting the validity of the Negative Declaration, it is now legally presumed to be valid. As *Laurel Heights Improvement Association v. Regents of the University of California* (1993) 6 Cal. 4th 1112, 1130 ("*Laurel Heights II*") makes clear, an EIR (or other CEQA document) is "conclusively presumed valid unless a lawsuit has been timely brought to contest [its] validity." (See also *Snarled Traffic Obstructs Progress v. City & County of San Francisco* (1999) 74 Cal.App.4th 793, 797 ("as a general rule, once a negative declaration is issued or an EIR is completed, that decision is protected by concerns for finality and presumptive correctness.")

In *Laurel Heights II*, the California Supreme Court allowed an entire project to be implemented even though its supporting EIR, never judicially challenged, was later determined to be deficient and contain errors. Therefore, even if there were deficiencies in the 2007 Negative Declaration, DTSC is legally entitled to rely on it, and DTSC's preparation of an Addendum to it that explains minor changes does not provide an avenue for reopening the Negative Declaration.

(b) The Comments are Incorrect. Comments 17 and 18 emphasize DTSC's role as a responsible agency for the 2005 City EIR, and make the mistaken assumption that DTSC's CEQA review of the remedy for the Chloroform Release Area is still being undertaken as a responsible agency. In 2006, when DTSC approved the remedy for the 143-acre Redevelopment Property, it conducted its CEQA review through using the Responsible Agency checklist and issuing specified findings. This process made sense at that time because DTSC's proposed action for the overall Redevelopment Property was discussed and evaluated in the City's 2005 EIR.

In 2007, when DTSC prepared to approve the remedy for the 0.78- acre Chloroform Release Area, DTSC determined that it would more properly be the lead agency for the project (installation and operation of the soil vapor extraction system) pursuant to Article 4, section 15050 of the CEQA Guidelines. DTSC has the authority to approve hazardous waste corrective action and the City of San Jose had no permitting authority over the soil vapor extraction project. Thus, it was more logical and appropriate for DTSC to be lead agency, prepare a full Initial Study and then the Negative Declaration after it had evaluated the impacts of the project in the Initial Study. Now that DTSC is ready to determine that the remedy has been implemented and corrective action is complete, DTSC is still acting as lead agency with respect to the 2007 Negative Declaration, and therefore DTSC's decision to prepare a Negative Declaration is still presumed to be legally valid.

Even if DTSC's role as lead agency for the Negative Declaration could still be challenged, that challenge would fail, because DTSC is properly serving as the lead agency for both the Negative Declaration and the Addendum. CEQA Guidelines (tit. 14, Cal. Code of Regs. §§ 15000 et seq.; "Guidelines") Section 15052(a)(2)(A) provides that when a responsible agency is called on to grant an approval for a project, it ***must*** assume the role of lead agency if the original lead agency prepared environmental documents for the project, but (1) a subsequent EIR or negative declaration[19] is required

[19] CEQA Guidelines section 15162 addresses when a subsequent EIR or negative declaration must be prepared. Sections 15163 and 15164 provide situations where a CEQA documents of lesser scope may be prepared when the section 15162 requirements for preparation of a subsequent EIR or negative declaration have not been met. Subsequent negative declarations are not expressly mentioned in Section 15052(a)(2)(A); however, it references Section 15162, which addresses both when a subsequent EIR or negative declaration must be prepared. It should also be noted that while section 15052 specifies the circumstances when a responsible is required to assume the role of lead agency; it does not state that a responsible is not permitted to assume that role in other circumstances.

by Guidelines Section 15162, (2) the lead agency has granted a final approval for the project, and (3) the statute of limitations for challenging the lead agency's action has expired. According to Guidelines section 15162(c), if conditions occur in an already-approved project that trigger the need for a subsequent EIR or negative declaration, that subsequent document "shall only be prepared by the public agency which grants the next discretionary approval for the project."

In this case, the original lead agency had certified the EIR and granted its final approval and the statute of limitations had run on those actions by the time the investigation of the chloroform release in the vicinity of Building 028J had been completed and the remedy was ready to be selected. DTSC is the agency overseeing hazardous waste corrective action in the Chloroform Release Area. It was therefore appropriate under the Guidelines for DTSC to assume the lead agency role with respect to that approval.

The comment's reference to *Association for a Cleaner Env't v. Yosemite Community College Dist.* (2004) 116 Cal. App.4th 629, 637 is irrelevant because that case concerns an agency that refused to conduct any CEQA review for a project. For this determination that corrective action is complete, DTSC prepared an Initial Study, Negative Declaration, Addendum and Notice of Determination. DTSC clearly treated its decision as a project and fulfilled its CEQA obligations.

(c) The Asserted Defect is Not Substantial. Even if the Addendum could provide Signature with an opportunity to re-open and challenge the 2007 Negative Declaration, and even if Signature's argument that the 2007 Negative Declaration was deficient because it did not properly tier off the 2005 City EIR was correct, DTSC's proposed decision is still supportable because the alleged defect is insubstantial. Insubstantial defects in a CEQA document do not render it invalid.

Here, even if the 2007 Negative Declaration were determined to be defective because it was not set in the procedural context of the City's 2005 EIR, it still contains the *substantive* information required by CEQA. Specifically, the 2007 Negative Declaration: refers to the City's prior EIR; explains that after the EIR was certified and the project approved, additional information was gathered about the chloroform release in the vicinity Building 028J; analyzes the impacts of that contamination and the proposed 2-Phase™ Extraction system, and determines that those impacts are less than significant.

If DTSC had prepared the negative declaration as a "subsequent negative declaration" tiering off the 2005 City EIR, it would not have changed its conclusion that implementation of the remedy for the Chloroform Release Area will not have a significant effect on the environment. If the failure to label the 2007 Negative Declaration as a "subsequent" negative declaration was a defect, it was obviously an insubstantial one. It would not have been appropriate to prepare a subsequent EIR because the 2007 project did not cause potential substantial impacts on the environment.

(d) DTSC Met the Goals of CEQA More Effectively as Lead Agency. One of the basic purposes of CEQA is to require public agency decisionmakers to document and consider the environmental implications of their actions. (Pub. Resources Code §§ 21000, 21001.) Public participation and public review are also essential components of CEQA (CEQA Guidelines §§15201 and 15202, subd. (j)). DTSC met these goals more effectively by acting as lead agency and preparing the 2007 Initial Study and Negative Declaration than if DTSC had acted as a responsible agency. As a responsible agency, DTSC's practice would have been to prepare a Responsible Agency Checklist that compared the vapor extraction system project to the City's 2005 EIR and a set of findings that evaluated the new 2007 project against the City's 2005 EIR. Circulation and public comment on those types of documents is not required. Another option would have been to request the City to prepare an Addendum to the 2005 EIR, because the 2007 project did not present new or significant environmental impacts. Addendums are not required to be circulated for public comment. In contrast, as lead agency, DTSC was required by CEQA to circulate its 2007 Initial Study and Negative Declaration for public comment. Given the options DTSC had as a responsible agency relying on the City's 2005 EIR, DTSC is convinced it was more efficient, transparent and informative for DTSC to act in the lead agency role and prepare and circulate the Initial Study and Negative Declaration for installation and operation of the soil vapor extraction system in the Chloroform Release Area.

Comment 19: The Discovery of Chloroform in the Groundwater in Excess of RBTCs Established in the Project EIR Is New Information Requiring Preparation of a Subsequent EIR

[February 13, 2009 letter, Section D.1.c.]

"Notwithstanding the improper Negative Declaration, the Determination remains a component of the Project, and therefore remains subject to the EIR. As a responsible agency with respect to the Project, CEQA requires DTSC to determine whether the EIR provides adequate CEQA review for the Determination, and if not, to prepare a subsequent EIR if permitted by CEQA. New information of substantial importance requiring preparation of a subsequent EIR exists when a previous EIR is silent on the new information, and that information potentially would have one or more significant effects not discussed in the previous EIR. See Security Envt'l Sys. v. South Coast Air Quality Mgmt. Dist. (1991) 229 Cal.App.3d 110.

"DTSC cannot reasonably conclude that the EIR provides adequate CEQA review for the Determination, given the EIR did not even identify chloroform contamination in the groundwater in the vicinity of Building 028J in excess of the RBTC established by the EIR, and thus did not disclose the potentially significant health risk to sensitive receptors via inhalation.

"The EIR establishes an RBTC of 52 ug/L for chloroform in groundwater. It was not until after certification of the EIR and demolition of Building 028J that chloroform concentrations in excess of the EIR-established RBTCs were discovered in this area, necessitating the chloroform corrective action and the Determination. The discovery of chloroform in the groundwater in

excess of RBTCs in this area is new information of substantial importance that was not and could not have been known at the time of the EIR, and raises the possibility of significant Project impacts (e.g., significant health risks to sensitive receptors via inhalation) not identified in the EIR. The possibility of significant impacts is exacerbated by the Determination, which would authorize cessation of remediation activities notwithstanding the failure to meet the RBTC of 52 ug/L established in the EIR or even the cleanup goal of 80 ug/L established in the Corrective Measures Study, the Regional Board Site Cleanup Requirements for the site and the Negative Declaration. As a responsible agency with respect to the Determination, DTSC is required to prepare a subsequent EIR, rather than the Addendum to its impermissible Negative Declaration, to assess the new information regarding chloroform contamination in the groundwater."

DTSC's Response to Comment 19:

To appropriately respond to this comment, DTSC has separated it into sub-comments 19(a) – 19(c).

Comment 19(a): To summarize, the comment asserts that the City's EIR required an RBTC of 52 ug/L as a final cleanup goal for chloroform in groundwater, so establishment of 380 ug/L as an RBTC for groundwater in the Chloroform Release Area was new information with potential significant impacts that must be analyzed in a subsequent EIR;

Response to 19(a): DTSC disagrees with this comment for the following reasons:

(1) The City's EIR did not require the 52 ug/L to be met as a cleanup goal. It was only a screening level RBTC. The City's EIR did not require cleanups to achieve the RBTCs presented in Appendix H. The purpose of the RBTCs in Exhibit H was "to identify potential areas within the Redevelopment Area needing further investigation and/or mitigation prior to redevelopment." (pages 1-2 of Exhibit H.) The EIR contemplated that site specific data would be developed after approval of the EIR and the subsequent data would be the basis for establishing cleanup goals. This is demonstrated by the fact that the mitigation measure adopted in the EIR for the presence of hazardous substances was not expressed as taking specified actions or achieving specified cleanup standards; rather, the mitigation measure requires Hitachi GST is to undergo a process under the oversight of DTSC. The EIR requires Hitachi GST to "propose, seek DTSC approval for, and implement measures to remove these residual chemicals to a level that, at a minimum, is determined safe by DTSC…" (page 184 of the City's EIR). That safe level is not defined in the EIR; it is left to the discretion of DTSC as the agency with the appropriate expertise to subsequently establish safe levels based on the information gathered during the corrective action process Hitachi GST was required to undergo under DTSC's supervision.

(2) DTSC followed standard procedures in establishing the RBTCs used as final cleanup objectives. This was carefully explained in DTSC's GSU memorandum dated February 11, 2009, which Signature's assertion. Pages 2 and 3 of the GSU memorandum explain the evolution of the RBTC value. The important points are that (i) the evolution of the

RBTC value from 52 ug/L to 380 ug/L was the result of standard site investigation techniques; (ii) the original 52 ug/L RBTC was developed in January 2005 *using non-site-specific assumptions for the purpose of screening-level risk evaluation only* —it was not meant to be a cleanup goal; and (iii) the 2007 RBTC of 380 ug/L for chloroform *is supported by site-specific information* that was applied to generate appropriate health protective cleanup goals. Environ's December 3, 2008 letter also explains the evolution of the chloroform RBTC and explains why Signature's assertion is incorrect. Thus, as discussed above, the development of the RBTC of 380 ug/L as an actual clean up goal was not new information that needed to be analyzed by another EIR. Also see the February 11, 2009 memorandum by DTSC's Human and Ecological Risk Division (HERD) for further discussion of the evolution of the RBTC.

(3) Signature's statement that "it was not until after certification of the EIR that chloroform contamination in excess of the EIR-established RBTCs were discovered in this area" is clearly not true. Section II.F. of the EIR, titled "Hazards and Hazardous Materials" references Appendix H (the Screening Groundwater/Soil Health Risk Assessment), which contains detailed information about chloroform at Building 028J. Chloroform in Subarea O-4, which contains Lot 8, is specifically discussed in the subsections of Section II.F. titled "Existing Soil and Groundwater Contamination" and "Impacts from Direct Exposure to Soils." (See pages 167 and 177 of the City's EIR). Also, Section II.F.3. of the EIR, titled "Mitigation and Avoidance Measures—General Plan Policies", discusses the hazardous waste facility permit removal requirements, and the necessity of further investigation in the vicinity of Building 028J, based on the known presence of volatile organic compounds (VOCs) (See page 183 of the City's EIR).

(4) Finally, even if Signature's assertion had merit, DTSC approved 380 ug/L as a cleanup goal in the 2007 CMS, the impacts of which were reviewed in the 2007 Negative Declaration. As discussed in Responses 17 and 18 above, the 2007 Negative Declaration is legally presumed to be valid. There has been no change since the 2007 Negative Declaration was adopted with respect to the RBTC for chloroform in groundwater.

Comment 19 (b): To summarize, the comment asserts that 80 ug/L is an inflexible numeric goal established in the CMS, the negative declaration and the RWQCB's clean up requirements; and

Response to 19 (b): DTSC's Responses 17 and 18 above, incorporated herein by reference, dismiss this assertion. To summarize those responses: (i) the CMS only required attainment of the 80 ug/L "if practicable"; (ii) the Initial Study, which the Negative Declaration relied upon, incorporated the CMS by reference; (iii) the Negative Declaration only summarizes requirements and analyzes impacts - the Negative Declaration does not independently impose requirements; (iv) the Initial Study and the Negative Declaration stated that the extraction system would be operated "to the extent practicable" until the cleanup goals are met; (v) the Updated Final Statement of Basis and the Addendum to the Negative Declaration (both dated January 14, 2009) found that it was not practicable to meet the 80 ug/L level at all wells in the Chloroform Release Area; (vi) the Updated Final Statement of Basis and the Addendum found

that all cleanup goals, including the overall cleanup goal had been met; and (vii) the RWQCB does not require achievement of the 80 ug/L level in order for DTSC to determine that corrective action is complete (also see March 4, 2009 letter from DTSC to the RWQCB, with March 9, 2009 concurrence from RWQCB). Also note that response to Comment 6(a) provides additional information on the practicability of reaching the groundwater MCL.

Comment 19 (c): To summarize, the comment asserts that DTSC is a responsible agency for the determination that corrective action is complete in the Chloroform Release Area.

Response to 19(c): Responses 17 and 18 above dismiss the assertion that DTSC must act as a responsible agency for the determination that corrective action is complete. Also, this assertion is not directly relevant to this proposed corrective action completion determination, because DTSC is not proposing any change in the lead agency status it assumed as part of its approval of the Negative Declaration in 2007. As indicated above, that Negative Declaration had its own public comment period and is now legally presumed to be valid because the statute of limitations has expired.

Comment 20: The Addendum Is Not Supported by Substantial Evidence

[February 13, 2009 letter, Section D.2.a.]

"In the Addendum, DTSC takes the position that: (i) the 80 ug/L cleanup goal for groundwater has been met "to the extent practicable" and (ii) Hitachi's failure to meet the 80 ug/L goal will not change the finding of the Negative Declaration that the impacts of the corrective action are "less than significant". These conclusions are not supported by substantial evidence.

"The Negative Declaration firmly establishes 80 ug/L as the cleanup goal, without regard to practicability. It states: "the Regional Water Quality Control Board – San Francisco Bay (RWQCB – SF) has specified a cleanup standard of 80 ug/L for trihalomethanes (chloroform is a trihalomethane) for groundwater at the Hitachi GST site. ***Consequently, this value is the cleanup goal for chloroform in groundwater****" (emphasis added). Practicability is not mentioned with respect to the cleanup goal. Instead, The Negative Declaration discusses practicability only with respect to the operation of the extraction system. Specifically, it states that the "extraction system will be operated, to the extent practicable, until the cleanup goals are met." The Negative Declaration continues, "If the cleanup goals cannot be met by continued operation of the 2-Phase™ Extraction system, then an alternative remedial approach will be considered and potential environmental impacts will be evaluated in a separate CEQA document." In other words, the Negative Declaration unequivocally requires that the 80 ug/L cleanup goal be met, but provides for consideration of an alternative remedy to the extent that the goal cannot practicably be met through use of the extraction system.*

"The relevant inquiry pursuant to the Negative Declaration therefore is not whether meeting the cleanup goal is practicable, but whether continued operation of the extraction system is a practicable means of meeting the cleanup goal. Nowhere does the Addendum contain any evidence that continued operation of the extraction system is not practicable. In fact, continued

operation of the extraction system is both technologically feasible and economically feasible, as demonstrated by the fact that the system continued to operate and to remove material amounts of chloroform until it was shut down.

"Moreover, the only evidence provided in support of the contention that continued operation of the extraction system is not a practicable means of meeting the cleanup goal is the assertion that chloroform has reached asymptotic levels i.e. that the remediation system mass removal rate remained consistent over time. In fact, this assertion, if true, actually demonstrates the effectiveness of the system during the period of its operation. As demonstrated above, for several months prior to shutdown, the remediation system consistently was removing .05 pound of chloroform per week, while Hitachi estimated as little as .24 pound of chloroform mass remaining. Assuming the accuracy of the mass estimates offered by Hitachi and approved by DTSC, continued operation of the system for a few more months would have achieved the 80 ug/L goal. DTSC's conclusion to the contrary in the Addendum is not supported by any evidence, much less substantial evidence.

"The Addendum goes on to cite to a variety of reasons why meeting the 80 ug/L cleanup goal allegedly is unnecessary. As noted above, however, if continued operation of the extraction system were not a practicable means of meeting the cleanup goal, then the Negative Declaration requires consideration of "an alternative remedial approach." By contrast, the Determination would allow cessation of operation of the extraction system without meeting the 80 ug/L cleanup goal or considering an alternative remedial approach, in violation of the express requirements of the Negative Declaration."

DTSC's Response to Comment 20:

To summarize, Signature asserts (a) conclusions in the Addendum are not supported by substantial evidence; (b) the Negative Declaration established 80 ug/L as the cleanup goal for chloroform in groundwater l; (c) therefore, the relevant inquiry is whether it is practicable to continue operation of the extraction system and the Addendum does not contain evidence that it is not practicable to continue running the system; (d) continued operation of the system for a few more months would have achieved the 80 ug/L goal; and (e) the Negative Declaration requires consideration of "an alternative remedial approach".

DTSC Reponses:

(a) This assertion is incorrect. Section C. of the Addendum provides substantial evidence demonstrating that it is not practicable to meet the 80 ug/L MCL (see page 6 of the Addendum). The Updated Final Statement of Basis dated January 14, 2008 also provides substantial evidence on practicability (see page 12, 5th bullet). Response to Comment 6(a) above also provides a more detailed discussion on practicability. Section E. of the Addendum evaluates changes that occurred during implementation and provides substantial evidence that the changes did not create new or greater significant environmental impacts than those identified in the Negative Declaration, and as such, "…a subsequent Negative Declaration to address this new information is not required."

(see pages 9 through 16 of the Addendum). Also see page 15 of the January 14, 2009 Updated Statement of Basis, where DTSC states "...DTSC has determined that it was not necessary to consider an alternative approach because the overall CAO for the remedy has been met, as have the media-specific CAOs for soil, soil gas and groundwater."

(b) Responses 17 and 18, incorporated herein by reference, reject the assertion that the Negative Declaration established 80 ug/L as an inflexible cleanup goal. In fact, the Negative Declaration does not impose any requirements on the project. The Negative Declaration only summarizes requirements imposed by other documents such as the CMS Report and evaluates the environmental impacts of the project.

(c) The CMS establishes the requirements for the project, not the Negative Declaration. Section 5 of the CMS states that the CAO for groundwater is "to the extent practicable", meet the 80 ug/L MCL (page 26 of the CMS). The CMS does not state that the goal of the project is "to the extent practicable", keep running the extraction system indefinitely." Section 7.10 of the CMS states "…the extraction system will be operated, to the extent practicable, until the CAOs are met." (page 55 of the CMS). The Updated Final Statement of Basis dated January 14, 2009 demonstrates that the CAOs have been met, that it would not be practicable to continue running the system in order to reach the 80 ug/L MCL, and therefore the extraction system may be shut down. The Addendum contains evidence that continuing to operate the system would not necessarily reduce the chloroform in the A-Aquifer, and thus it is not practical to continue running the system. (See page 6 of the Addendum, page 12 of the Updated Final Statement of Basis and Response to Comment 6.).

(d) Responses 6 and 7 above, incorporated herein by reference, rebut the assertion that continued operation of the system for a few more months would achieve the 80 ug/L level. Also see page 12, fifth bullet of the Updated Final Statement of Basis dated January 14, which states that it is not feasible or necessary to remove the residual mass of chloroform in the A/B Aquitard.

(e) The Negative Declaration does not impose requirements on the project. The Negative Declaration merely explains the process that DTSC would follow if the cleanup goals could not met with the installation and operation of the vapor extraction system. In fact, DTSC found that the cleanup goals were met by the project. Thus it is not necessary to consider an alternative remedial approach or the environmental impacts associated with an alternative approach.

Comment 21: Approval of the Determination Requires a Subsequent Negative Declaration or Subsequent EIR, Because It Constitutes a Change in the "Project" That Could Have Significant Impacts Not Disclosed in the Negative Declaration

[February 13, 2009 letter, Section D.2.b.]

"Even if DTSC were permitted to utilize the Negative Declaration as the basis for CEQA review of the Determination, DTSC should have prepared a subsequent negative declaration or subsequent EIR, rather than the Addendum. Approval of the Determination without achievement of the 80 ug/L goal constitutes a change in the "project" analyzed in the Negative Declaration. See Environmental Council of Sacramento v. City of Sacramento (2006) 142 Cal.App.4th 1018, 1035 (holding that, when a lead agency identifies assumptions on which the CEQA analysis is based, those assumptions "become an integral part of the project description. If they fail to become reality …, we are dealing with a different project."). Where changes occur in a project for which a negative declaration has been prepared, the lead agency must consider whether those changes involve new or substantially more severe significant environmental effects than identified in the negative declaration, in which case a subsequent negative declaration (if the impacts can be mitigated) or subsequent EIR (if the impacts may not be mitigated) is required. CEQA Guidelines §15162; see City of San Jose v. Great Oaks Water Company (1987) 192 Cal.App.3d 1005, 1017.

"The Addendum fails to identify non-attainment of the 80 ug/L cleanup goal and a change in the cleanup goal from that standard as a change in the project. As noted above, DTSC's suggestion that the Negative Declaration only requires achievement of the cleanup goal "to the extent practicable" is incorrect.

"The Addendum next asserts that meeting the 80 ug/L cleanup goal is unnecessary, noting that the Regional Board's 80 ug/L standard for the site is a drinking water standard and that achievement of that standard is unnecessary because deed restrictions prevent use of groundwater at the site for drinking water. As demonstrated above, notwithstanding the deed restriction, achievement of the MCLs is mandated by the Porter Cologne Act, the Basin Plan, California regulations, Regional Board policy and the Site Cleanup Report for the Site. These laws and regulations exist to protect public health and safety.

"The Addendum further asserts that public health and safety is adequately protected because RBTCs identified in the Negative Declaration (380 ug/L, versus 52 ug/L identified in the EIR) have been meet. This conclusion is not supported by substantial evidence. In fact, the evidence in the record demonstrates that groundwater currently exceeds RBTCs. In one post-remediation sample in December of 2008, the concentration in well EW-17 reached 560 ug/L, well above RBTCs, even under the much less stringent Negative Declaration standard. Even if the 380 ug/L RBTC were met, however, the Addendum does not provide substantial evidence to support the assertion that health and safety would be protected notwithstanding the failure to meet the established health and safety standard of 80 ug/L. As demonstrated in Signature's previous submissions and above, the model used to derive the 380 ug/L RBTC is very poorly calibrated to actual site conditions, and consistently underestimates the soil gas levels that will result from particular groundwater chloroform concentrations.

"Even if the 380 ug/L RBTC were met, the prior CEQA documents for the site led the public to believe that a more protective cleanup goal would be enforced (52 ug/L in the case of the EIR and 80 ug/L in the case of the Negative Declaration), without reference to the distinction

between drinking water standards and vapor migration standards. Failure to prepare a subsequent Negative Declaration or EIR to address this significant relaxation of the cleanup goal would deprive the public, which relied on the EIR and the Negative Declaration, of meaningful participation regarding the issue of the achievement of the cleanup goal. See Mira Monte Homeowners Assn. V. County of Ventura (1985) 165 Cal.App. 3d 357, 365 (County failed to prepare subsequent EIR after identification of previously unidentified encroachment into wetlands. Court held that "the failure to prepare a subsequent or supplemental EIR deprived the public, who relied on the EIR's representations, of meaningful participation regarding the issue of wetland degradation."). Especially in connection with a large, long-term project such as this, in order to provide the public a meaningful opportunity to participate regarding the appropriate cleanup goal, DTSC must prepare a subsequent negative declaration or subsequent EIR."

DTSC's Response to Comment 21:

To summarize, Signature asserts that (a) DTSC should have prepared a subsequent negative declaration or subsequent EIR, rather than the Addendum because deeming corrective action to be complete even though the 80 ug/L MCL was not met constitutes a "change in the project"; (b) the Addendum fails to identify this "change in the project"; (c) the Addendum fails to provide substantial evidence that public health and safety will be protected even if the 380 ug/L RBTC is met; and (d) even if the 380 ug/L RBTC were met, previous CEQA documents led the public to believe that 52 ug/L was the cleanup standard.

DTSC Responses

(a) Responses 17 and 18, incorporated herein by reference, dismiss the assertion that 80 ug/L was a numeric, inflexible cleanup goal. The Corrective Measures Study (CMS) made clear that the project could be determined to be complete without the 80 ug/L being fully achieved.

(b) Based on (a) above, there was not a "change in the project" and thus the Addendum did not assert that was such a change. However, because Signature had previously raised the comment that terminating corrective action before full achievement of 80 ug/L constituted a change in the project, DTSC provided a detailed explanation in the Addendum as to why that position is incorrect. Even if this did constitute a "change in the project," it would not constitute a "substantial change" or "the involvement of new significant environmental effects" under CEQA Guidelines section 15162, requiring the preparation of a subsequent EIR or negative declaration. As explained in Response to Comment 6 above, "In the context of these circumstances and other facts in the Administrative Record, DTSC firmly concludes that (1) determining that corrective action is complete does not and will not adversely affect the current and probable future beneficial uses of water in the Basin, nor would it affect the future uses of the subject property, (2) completion of corrective action does not pose any human health or ecological risks, and (3) water quality objectives have been attained to the extent practical and will be fully attained within a reasonable period of time in the future.

(c) Numerous documents in the Administrative Record demonstrate why achievement of the 380 ug/L RBTC for chloroform in groundwater will protect public health and safety. See, for example, the CMS, the February 11, 2009 memorandum by DTSC's GSU, the February 11, 2009 memorandum by DTSC's Human and Ecological Risk Division (HERD), the December 3, 2008 letter from Environ and the Final Remedy Completion Report dated November 17, 2008.

(d) Response 19(a), incorporated herein by reference, explains that the City's EIR never portrayed the 52 ug/L for chloroform as anything more than a screening tool. The use of 52 ug/L was not based on site-specific data and the EIR did not assert that 52 ug/L was a cleanup level. The EIR did not purport to establish final cleanup standards. Instead, it left the establishment of such standards to the discretion of DTSC as the agency with the appropriate expertise.

Comment 22: Conclusion [CEQA Comments]

[February 13, 2009 letter, Section D.3.]

"As a responsible agency with respect to the Project, DTSC is required to assess the Determination against the Project EIR. Because the discovery of chloroform in the groundwater in excess of RBTCs identified in the EIR results in a new and potentially significant Project impact not identified in the EIR, DTSC must prepare a subsequent EIR. Even if DTSC were permitted to rely upon the Negative Declaration, the Addendum is legally inadequate. The conclusions of the Addendum that the 80 ug/L goal only had to be met to the extent practicable, that attainment of the 80 ug/L goal is not necessary and that impacts will not occur because RBTCs have been met, are not supported by substantial evidence. In addition, the elimination of the 80 ug/L goal denies the public of a meaningful opportunity to participate. As such, even if DTSC were not a responsible agency pursuant to the EIR, DTSC would be required to prepare a subsequent negative declaration or subsequent EIR."

DTSC's Response to Comment 22:

Signature concludes: (a) As a responsible agency, DTSC is required to assess its determination against the City's 2005 EIR; (b) DTSC must prepare a subsequent EIR because of the discovery of chloroform in excess of the 52 ug/L discussed in the EIR; (c) Even if DTSC could rely on the Negative Declaration, the Addendum was inadequate because it did not provide substantial evidence for its conclusions; (d) elimination of the 80 ug/L goal denies the public a meaningful opportunity to participate; and (e) even if DTSC were not a responsible agency, DTSC would be required to prepare a subsequent negative declaration or subsequent EIR.

DTSC Responses

(a) Responses 17 and 18 explain why DTSC appropriately assumed the role of lead agency and prepared the Negative Declaration.

(b) Responses 17 and 18 explain why establishment of 380 ug/L as the cleanup goal for chloroform was not new information that required a subsequent CEQA document.

(c) The Addendum provided substantial evidence that Section 5 of the CMS only required attainment of the 80 ug/L MCL "to the extent practicable". Documents in the Administrative Record, such as the Addendum, the Updated Final Statement of Basis and DTSC's January 2009 Fact Sheet explain why it is not necessary to meet the 80 ug/L in order to find that corrective action is complete (see, for example, Section C, pages 5 through 7 of the Addendum).

(d) The MCL of 80 ug/L was never an inflexible numeric goal for chloroform in groundwater and thus DTSC never "eliminated"80 ug/L as a goal. (See Response to Comment 19(b).)

(e) Section E. of the Addendum explains why changes that occurred during implementation did not change the impacts of the project. The cleanup goals of the project were met, so DTSC does not need to consider an "alternative remedial approach" and thus DTSC does not need to prepare a subsequent CEQA document.

Response to Attachments 1 through 9 (Comments 23 –31)

Introduction

DTSC reviewed and considered all submittals from Signature and Hitachi GST that were submitted prior to the beginning of the public comment period for the proposed Corrective Action Complete Determination. As stated in Response to Comment 4 of this Response to Comments document, DTSC is not required to respond to any documents or comments that were submitted prior to the issuance of the public notice for the proposed determination and the opening of the public comment period. Nonetheless, DTSC did respond to many of the concerns raised by Signature prior to the start of the public comment period. In the interest of transparency and responsiveness, DTSC is hereby responding to these comments and attachments as follows:

Comment 23: Prior Evaluations, Attachment 1

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- Erler & Kalinowski, Inc. (EKI), ***Concerns Associated With the Potential Shutdown of the 2-Phase Extraction System at Former Building 028J***, August 28, 2008, Attachment 1."

Response to Comment 23:

The EKI August 28, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the EKI August 28, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The EKI document was prepared prior to the October and December 2008 sampling events and Hitachi GST's submittal of the Final Remedy Completion Report and the December 2008 Report. For the most part, EKI's comments are obsolete or have been superseded by similar, subsequent comments from Signature.

The EKI August 28, 2008 document was addressed in the Administrative Record. See Environ's letter, "Re: Response to Comments, August 28, 2008 EKI Letter to Michael Ghielmetti at Signature Properties, Chloroform Release Area at Former Building 028J ("Lot 8")," dated September 22, 2008.

In summary, the EKI document makes the following assertions associated with shutdown of the 2-PhaseTM Extraction system:

(a) "Concentrations of chloroform in groundwater are greater than, and in some cases multiples of, the Corrective Action Objectives.
(b) Shutdown criteria have not been achieved, including a requirement for achievement of Corrective Action Objectives in soil gas and groundwater for three consecutive months.
(c) Increases in chloroform concentrations in groundwater and soil gas are expected following system shutdown due to "rebound." This expectation is supported by observations during the November/ December 2007 shutdown.
(d) Chloroform mass estimates have likely been underestimated in the Modeling Report.
(e) Future chloroform concentrations in the A-aquifer are likely underestimated in the Modeling Report.
(f) Future chloroform concentrations in the vadose zone are not estimated in the Modeling Report.
(g) The time for chloroform to be "flushed" from groundwater is likely greater than estimated in the Modeling Report."

Signature's assertion (a) compared soil gas and groundwater date from the Modeling Report and the August 2008 sampling to the RBTCs and the 80 ug/L CAO for chloroform in groundwater. The assertion is obsolete due to the October and December 2008 soil gas and groundwater sample results and superseded by similar, subsequent Signature comments. See Response to Comments 6a, 6b and 10. The issue of the 80 ug/L CAO for chloroform in groundwater was also addressed in the Addendum to the Negative Declaration. Also, see Response to Comments 5, 6, 13, and 14a.

Signature's assertion (b) misstates the CAO requirements concerning three months of sampling, is obsolete due to the October and December 2008 soil gas and groundwater sample results, and is superseded by similar, subsequent Signature comments. See Response to Comments 10 and 12. The issue of three months post remediation sampling was addressed in the updated Final Statement of Basis, dated January 14, 2009, and the Addendum to the Negative Declaration. Also, see Response to Comments 9a, 9b and 11.

Signature's assertion (c) is obsolete due to the October and December 2008 sampling events and is superseded by similar, subsequent Signature comments. See Response to Comment 12.

Signature's assertion (d) evaluates the chloroform mass estimates in the CMS Report and the Modeling Report. This has been superseded by the Final Remedy Completion Report and by similar, subsequent Signature comments. See Response to Comment 14.

Signature's assertion (e) is obsolete due to the October and December 2008 sampling events and similar, subsequent Signature comments. See Response to Comments 9b and 14.

Signature's assertion (f) is obsolete due to the October and December 2008 soil gas results which document residual post remediation chloroform concentrations. See Comments 9b and 14.

Signature's assertion (g) is obsolete and contradicted by the October and December 2008 sampling data which indicates that chloroform is being "flushed" from groundwater at rates faster than those identified in Modeling Report. See Response to Comments 9b and 14.

Comment 24: Prior Evaluations, Attachment 2

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- S.S. Papadopulos & Associates (SSPA), ***Comments on Modeling Report (Executive Summary with Slides)***, October 13, 2008, Attachment 2.

Response to Comment 24:

The SSPA October 13, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the SSPA October 13, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The SSPA document was prepared prior to the October and December 2008 sampling events and Hitachi GST's submittal of the Final Remedy Completion Report and the December 2008 Report. For the most part, SSPA's

comments are obsolete or have been superseded by similar, subsequent comments from Signature.

The SSPA October 13, 2008 document was responded to in the Administrative Record. See Environ's presentation, "Response to SSPs Presentation," dated November 3, 2008.

In summary, the SSPA document makes the following assertions associated with ENVIRON's report, "Chloroform Mass Estimates and Projected Future Groundwater Conditions, Chloroform Release Area At Former Building 082J," (Modeling Report):

- Extraction system data indicates the presence of a continuing source and is inconsistent with Environ's conclusions.
- Current chloroform concentration in extracted groundwater is greater than 380 ug/L
- Environ assumes an annual recharge amount that underestimates the time for reduction of chloroform to concentrations below MCL.

Signature's assertion (a) has been superseded by similar, subsequent Signature comments. See Response to comments 9, 10 and 12.

Signature's assertion (b) has been superseded by similar, subsequent Signature comments. See Response to Comment 10.

Signature's assertion (c) is based on the misinterpretation of information source for estimated recharge used in Modeling Report. The Modeling Report annual groundwater flushing estimate was based on historic water level fluctuations and not precipitation.

Comment 25: Prior Evaluations, Attachment 3

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- EKI, ***Observations During Hitachi's Soil Gas Sampling at the Former Building 028J Chloroform Remediation Area,*** October 28, 2008, Attachment 3.

Response to Comment 25:

The EKI October 28, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the EKI October 28, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The EKI document was prepared prior to the December 2008 sampling event and Hitachi GST's submittal of the Final Remedy Completion

Report and the December 2008 Report. For the most part, EKI's comments are obsolete or have been superseded by similar, subsequent comments from Signature.

The EKI October 28, 2008 document was responded to in the Administrative Record. See Environ's letter, "Re:..Response to Comments, October 28, 2008 Erler & Kalinowski, Inc. Memorandum to Michael Ghielmetti of Signature Properties, Chloroform Release Area at Former Building 028J ("Lot 8")," dated November 26, 2008.

In summary, the EKI document makes the following assertions associated with soil gas sampling:

- The post-run tubing method used by TEG Inc. at the Site is prone to leakage.
- The leak checking procedures were inadequate and were inconsistent with the joint DTSC and Los Angeles Regional Water Quality Control Board guidance.
- Preferential pathways to ambient air may be present due to the multiple penetrations from prior sampling rounds in a small area, thereby resulting in diluted soil gas samples.

Signature's assertion (a) is obsolete due to the December 2008 soil gas samples and has been superseded by similar, subsequent Signature comments. See Response to Comments 12, 15, and 31.

Signature's assertion (b) is obsolete due to the December 2008 soil gas samples and has been superseded by similar, subsequent Signature comments. See Response to Comments 12, 15, and 31.

Signature's assertion (c) has been superseded by similar, subsequent Signature comments. See Response to Comments 15 and 31.

Comment 26: Prior Evaluations, Attachment 4

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- SSPA, ***Groundwater Sampling Protocol***, October 29, 2008, Attachment 4.

Response to Comment 26:

The SSPA October 29, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the SSPA October 29, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The SSPA document was prepared

prior to the December 2008 sampling event and Hitachi GST's submittal of the Final Remedy Completion Report and the December 2008 Report.

The SSPA October 29, 2008 document was responded to in the Administrative Record. See Environ's letter, "Re: Response to Comments, October 29, 2008 S.S. Papadopulos & Associates Letter to Stuart I. Block of Cox, Castle, & Nicholson LLP, Chloroform Release Area at Former Building 028J ("Lot 8")," dated November 24, 2008.

In summary, the SSPA document makes the following assertion associated with groundwater sampling protocol: There is a potential for aeration of the groundwater in the wells at the Hitachi site during the sampling process. Aeration of groundwater samples is a problem that can skew sampling results related to volatile organic compound.

DTSC disagrees with Signature's assertion that the groundwater sampling protocol used at the Hitachi site has skewed the chloroform concentration data. See DTSC's January 23, 2009 memorandum.

Comment 27: Prior Evaluations, Attachment 5

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- SSPA, ***Comments on Environ Response to SSP&A Presentation of November 3, 2008***, November 11, 2008, Attachment 5.

Response to Comment 27:

The SSPA November 11, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the SSPA November 11, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The SSPA document was prepared prior to the December 2008 sampling event and Hitachi GST's submittal of the December 2008 Report.

The SSPA November 11, 2008 document responds to a presentation by Dr. Rob Powell of ENVIRON on November 3, 2008, which responded to a presentation by Steven Larson of SSPA on November 3, 2008, concerning SSPA's evaluation of ENVIRON's report, "Chloroform Mass Estimates and Projected Future Groundwater Conditions," dated August 11, 2008. In summary, the SSPA November 11, 2008 document makes the following assertions:

- The consistent and persistent mass removal rates achieved by the remediation system strongly suggest the presence of a continuing source of chloroform and are fundamentally inconsistent with ENVIRON's mass estimates and with its conclusion that nearly all chloroform mass has been removed from soil and groundwater.
- The mass removal data shows that the concentrations in the groundwater produced from the 2-Phase™ Extraction system would have to exceed 380 ug/L in order to yield the amount of chloroform mass being removed by the system.
- If, during system operation a dewatered zone was created and significant chloroform mass was purged from the residual water in that zone, the average concentration in the groundwater would be diluted when the groundwater level recovered due to the removal of chloroform from the residual water in the dewatered zone. This process could produce a "halo" effect of reduced chloroform concentrations in the groundwater in an area around the extraction wells, where average chloroform concentrations were lower than the concentrations in groundwater beyond this area.
- ENVIRON has failed to demonstrate long-term attainment of the RBTCs for soil gas. Because the August 2008 and October 2008 soil gas data do not establish a steady-state concentration for soil gas, it is impossible for ENVIRON to conclude that the remediation has achieved the soil gas RBTCs.
- It is undisputed that ENVIRON's initial natural attenuation model was flawed, and that the actual time for natural attenuation will be significantly longer than presented in ENVIRON's modeling report. Even the increased estimates of time for natural attenuation presented by ENVIRON likely significantly underestimate the time to achieve the cleanup goals through natural processes.
- Soil gas samples might be impacted by leakage of ambient air into the samples.

The SSPA November 11, 2008 document was responded to in the Administrative Record. See Environ's letter, "Re: Response to Comments – Comments on Environ's Response to SSP&A Presentation of November 3, 2008, November 11, 2008 S.S. Papadopulos & Associates Letter to Stuart I. Block of Cox, Castle, & Nicholson LLP, Chloroform Release Area at Former Building 028J ("Lot 8") Area," dated December 1, 2008.

DTSC has also responded to these issues in DTSC's memorandum dated January 23, 2009, and also see the following Comments: for assertions (a) and (b), See Response to Comments 10 and 14; for assertion (c), See Response to Comments 10 and 15; for assertion (d), See Response to Comment 12; for assertion (e), See Response to Comments 8 and 9; and, for assertion (f), See Response to Comments 12 and 31.

Comment 28: Prior Evaluations, Attachment 6

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- SSPA, ***Critical Review of Risk-Based Target Concentration (RBTC) Determinations for Hitachi, Building 028J Site***, November 18, 2008, Attachment 6.

Response to Comment 28:

The SSPA November 18, 2008 document was submitted prior to issusance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the SSPA November 18, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The SSPA document was prepared prior to the December 2008 sampling event and Hitachi GST's submittal of the December 2008 Report.

In summary, the SSPA document makes the following assertions associated with the risk-based target concentration determinations:

- Existing site data already demonstrates that ENVIRON's RBTC model performs very poorly at predicting equilibrium soil gas concentrations associated with particular groundwater conditions. In fact, ENVIRON's RBTC model consistently and significantly underestimates the level of soil gas that would be expected from a particular chloroform concentration in groundwater. The actual site data from before operation of the remediation system began indicates that average chloroform concentrations of 160 ug/L in groundwater would be expected to result in soil gas concentrations well in excess of the soil gas RBTCs. This flaw in ENVIRON's model strongly suggests that the groundwater RBTC of 380 ug/L will generate human health risk that are higher than DTSC believes are acceptable.
- ENVIRON's original RBTC model in the 2005 Environmental Impact Report is more consistent with site sampling data in terms of estimating soil gas concentrations. This same model determined that chloroform concentrations in groundwater at or below 52 ug/L were necessary to achieve the soil gas RBTC's. It appears that virtually all of the increase in the RBTC from 52 to 380 ug/L is attributable to ENVIRON changing the classification of soil type at the water table from "sandy loam" to "silty clay loam."

DTSC disagrees with the assertions regarding inadequacy of soil gas RBTC and inappropriate use of soil type parameters in the RBTC development. These assertions have been previously addressed in the Administrative Record, see Environ's letter, "Re: Response to Comments – November 18, 2008 S.S. Papadopulos & Associates Letter, Critical Review of Risk-Based Target Concentration (RBTC) Determinations for Hitachi, Building 028-J Site," dated December 3, 2008, DTSC's GSU memorandum dated February 11, 2009, and DTSC's HERD memorandum dated February 11, 2009.

Comment 29: Prior Evaluations, Attachment 7

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- Signature Properties, ***Comments on Hitachi Completion Report***, December 4, 2008, Attachment 7.

Response to Comment 29:

The Signature December 4, 2008 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the Signature December 4, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009. The Signature document was prepared prior to the December 2008 sampling event and Hitachi GST's submittal of the December 2008 Report.

In summary, the Signature document makes the following assertions concerning the "Final Remedy Completion Report, Chloroform Release Area at Former Building 028J," dated November 17, 2008:

- Hitachi has not demonstrated long-term compliance with soil gas RBTCs.
- Hitachi has not demonstrated long-term compliance with groundwater RBTCs.
- Hitachi has not demonstrated that remediation to achieve MCLs is technically impracticable.
- Hitachi has not demonstrated that natural flushing will achieve MCL cleanup levels.
- Hitachi has failed to account for a clear continuing source of chloroform.

DTSC disagrees with the assertions regarding achievement of soil gas RBTC, achievement of groundwater RBTCs, need to achieve groundwater MCL, lack of demonstration of groundwater flushing will achieve MCL, and the existence of a significant residual chloroform source. These assertions have been previously addressed in the Administrative Record, see DTSC's GSU memorandum dated
January 23, 2009, and Response to Comments 5a, 5b, 6a, 7a, 9c, 9e, 10a, 10c, 10d, 12b, and 12c.

Comment 30: Prior Evaluations, Attachment 8

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- SSPA, ***Comments Regarding Environ Sampling***, January 9, 2009, Attachment 8.

Response to Comment 30:

The SSPA January 9, 2009 document was submitted prior to issuance of DTSC's public notice of the proposed corrective action complete determination, along with its supporting documents and Administrative Record. Signature's February 13, 2009 letter does not provide any explanation for how the SSPA January 9, 2009 comments apply to the proposed corrective action complete determination issued on January 14, 2009.

In summary, the SSPA document makes the following assertions associated with the sampling date presented in the "Groundwater and Soil Gas Sampling Results – December 2008 Report," dated January 5, 2009:

- The December 2008 data clearly demonstrate that Hitachi has not achieved the cleanup goals and that groundwater concentrations exceed the chloroform RBTC.
- Chloroform in soil gas has not reached equilibrium with groundwater and will continue to rise in relation to groundwater. Based on the observed groundwater concentrations, it is likely that equilibrium soil gas concentrations will exceed RBTCs.
- The data once again confirm the presence of a continuing source of chloroform that will continue to feed groundwater and soil gas over time, revealing fatal flaws in ENVIRON's conceptual site model.

DTSC disagrees with the assertions regarding achievement of groundwater RBTC, achievement of soil gas RBTCs, and existence of a significant residual chloroform source. These assertions have been previously addressed in the Administrative Record, see Environ's letter, "Re: Response to Comments, January 9, 2009 S.S. Papadopulos & Associates Letter to Stuart I. Block of Cox, Castle, & Nicholson LLP, Chloroform Release Area at Former Building 028J ("Lot 8")," dated January 16, 2009, DTSC's GSU memorandum dated January 23, 2009, and Response to Comments 7a, 9c, 9e, 12b, and 12c of this RTC document..

Comment 31: Prior Evaluations, Attachment 9

[February 13, 2009 letter, Section B.]

"… Signature hereby submits all its prior evaluations as formal public comments on DTSC's proposed determination, including:

- Erler & Kalinowski, Inc. (EKI), ***Rebuttal to Environ's Response-to-Comment Letter, dated 26 November 2008, Regarding EKI's Observations during Hitachi's Soil Gas Sampling at the Former Building 028J Chloroform Remediation Area, 5600 Cottle Road, San Jose, California***, [February 12, 2009,] Attachment 9.

Response to Comment 31:

The EKI February 12, 2009 document is a rebuttal to ENVIRON's November 26, 2008 letter responding to EKI's October 28, 2008 memorandum concerning soil gas sampling. Signature's February 13, 2009 letter does not provide any explanation for how the EKI October 28, 2008 comments apply to the proposed corrective action complete determination issued on January 14, 2009.

In summary, the EKI February 12, 2009 document makes the following assertions associated with soil gas sampling:

(a) The post-run tubing method used by TEG, Inc. at the Site is prone to leakage.
(b) The December 2008 soil gas sampling was performed under wet conditions.
(c) The leak checking procedures for the October 2008 and prior soil gas samples were inadequate.
(d) Preferential pathways to ambient air may be present due to the multiple penetrations from prior sampling rounds in a small area, thereby resulting in diluted soil gas samples.

DTSC disagrees with the assertions regarding validity and general quality of the soil gas data. These assertions have been previously addressed in the Administrative Record, see Environ's letter, "Re: Response to Comments, February 12, 2009 Erler & Kalinowski, Inc. Memorandum to Michael Ghielmetti of Signature Properties, Chloroform Release Area at Former Building 028J ("Lot 8")," dated February 24, 2009, and DTSC's GSU memorandum dated January 23, 2009. The December 2008 soil gas sampling event was conducted in a manner to avoid potential issues associated with post-run tubing method used by TEG, Inc and leak detection previously raised by EKI. The December 2008 soil gas sampling data is consistent with previous data indicating that the allegation of questionable soil gas sample validity are incorrect. DTSC disagrees with the allegations of preferential pathways diluting soil gas results and interprets the results of soil gas leak detection conducted throughout the project to support this interpretation. DTSC disagrees with the allegation that wet weather conditions biased the December 2008 soil gas sampling results and concludes that the data is valid and representative of site conditions based on general consistency of soil gas data collected during three separate independent sampling events.

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Attachments

Administrative Record List for Final Decision

DTSC March 4, 2009 letter to RWQCB with March 9, 2009 concurrence from RWQCB.