Appendix D

Response to Comments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Cleanup Staff's Response to Comments on Tentative Order for Site Cleanup Requirements
2460 El Camino Real, Santa Clara, Santa Clara County

August 26, 2013
File No. 43S1090 (NMK)

This document provides Cleanup Staff's response to comments received on the Tentative Order (TO) for the Site Cleanup Requirements for the subject Site. On June 25, 2013, Cleanup Staff distributed the TO to the full interested persons list and to the Regional Water Board's Advisory Team for comments. The Regional Water Board's Advisory Team submitted their comments on July 22, 2013. Moonlite Associates, LLC, (Moonlite) and United Artists Theatre Circuit, Inc., (UATC) submitted their comments on July 29, 2013. Below is a summary of comments received and Cleanup Staff's responses to those comments. Section B (Moonlite) starts on page 2, Section C (UATC) starts on page 7, and Section D (EKI for UATC) start on page 22.

A. Regional Water Board's Advisory Team Comments

1) ***Comment:*** Add a reference to Water Code section 13267 in the "It is Hereby Ordered" paragraph to avoid any dispute regarding the Water Board's ability to require investigation as part of the Order.

Response: Cleanup Staff agrees. The TO has been changed to include a reference to Water Code 13267.

2) ***Comment:*** On page 11 of the Order, under Cleanup Level Section B., Soil Cleanup, Soil Gas Cleanup, and Sub-Slab Soil Gas Cleanup, the Order as written appears to limit the requirements for the dischargers to meet the specified cleanup levels to the boundaries of the Site (the address), rather than all areas overlying the plume. However, from the findings and tasks in the Order, it appears that staff intends to have the dischargers clean up soil or soil gas offsite should that become necessary. The proposed edit, referring to areas overlying the plume rather than the Site, would ensure that the Order governs cleanup of any offsite portions of the plume.

Response: Cleanup Staff agrees. The language in the TO, *B. Remedial Action Plan and Cleanup Levels,* has been changed to also include the areas overlying the plume offsite.

3) ***Comment:*** For the same reasons given in comment 2, on page 12, we recommend requiring that the dischargers meet indoor air cleanup levels in all buildings overlying the plume, as opposed to only buildings overlying the Site.

Response: Cleanup Staff agrees. The language in the TO, *B. Remedial Action Plan and Cleanup Levels,* has been changed to include all buildings overlying the plume.

4) *Comment:* The proposed deadline for Task 1 in Section C. is approximately two weeks after the September Board meeting. This may not be a concern for a discharger who is already investigating the Site, but if a previously-uninvolved discharger has concerns about meeting this deadline, we recommend moving the deadline.

Response: Cleanup Staff agrees. See response to Moonlite's Comment 8. The due date for TO Task 1 has been extended to December 31, 2013.

5) *Comment:* Task 7 has a deadline that proceeds the date when the Order is scheduled for adoption. As a matter of due process, the Water Board cannot enforce against dischargers on a deadline that passes before they are actually ordered to do perform a particular task. Task 7 should be removed or the deadline pushed back until sometime after the adoption hearing.

Response: Cleanup Staff agrees. The TO Task 7 has been deleted.

6) *Comment:* Task 11 (recording a deed restriction) should be limited to the current property owner.

Response: Cleanup Staff agrees. The TO Task 11 has been changed to limit this requirement to the current property owner.

B. Moonlite Associates, LLC, Comments

1) *Comment:* Additional past operators of the former Moonlite Cleaners dry cleaner have been identified, some of which are presumed deceased, but several are believed to be living and the last known addresses for these individuals are provided. A request for extending the TO comment period was not made, but a request was made for Regional Water Board staff to consider these previous operators potentially as additional named dischargers at a later date.

Response: Comment noted. Cleanup Staff do not recommend extending the TO comment period or rescheduling the September 11, 2013, Regional Water Board meeting. Staff will issue site history requirement letters to these identified individuals. Once staff has reviewed the site history responses, staff will further evaluate whether to name or to not name these individuals as additional dischargers and provide a recommendation to the Water Board. Thus, no change was made to the TO.

2a) *Comment:* It appears that Regional Water Board Environmental Screening Levels (ESLs) were used as cleanup levels. ESLs should not be prescriptively used as cleanup levels.

Response: Comment noted. The ESL Document was not used as the basis for cleanup levels. The groundwater cleanup levels are based on drinking water standards. The soil cleanup levels are based on preventing leaching from soil to groundwater. The indoor air cleanup levels are based on a 10-6 cancer risk for inhalation. The soil gas cleanup levels are based on preventing vapor intrusion into overlying buildings using an attenuation factor of 0.001 from soil gas to indoor air. Finding 11.g of the TO notes that the dischargers may propose revised cleanup levels for consideration.

2b) *Comment:* The requirement in the TO to remediate to the ESLs based on 10^{-6} risk is inappropriate until further Site specific cleanup standards are calculated. The San Francisco Bay Water Board has approved cleanup levels at other sites that are higher than 10^{-6} risk.

Response: Comment noted. The 10^{-6} risk level is used as the starting point for cleanup levels and is only deviated from under unusual circumstances such as technical or economic impractibility. Finding 11.g of the TO notes that the dischargers may propose revised cleanup levels for consideration. Thus, no change was made to the TO.

2c) *Comment:* Final cleanup levels should be determined when the remedy is selected.

Response: Cleanup Staff concur that the cleanup plan should have cleanup levels. However, there is nothing that precludes including cleanup levels in the TO at this time. Finding 11.g of the TO notes that the dischargers may propose revised cleanup levels for consideration. If the dischargers include revised cleanup levels in their cleanup plan, Regional Water Board staff will evaluate the proposed cleanup levels during the approval process for the cleanup plan and will consider changes to the cleanup levels if appropriate. In addition, it is more efficient to prepare one cleanup order with cleanup levels than to rely on a second cleanup order to set cleanup levels. Thus, no change was made to the TO.

3) *Comment:* The TO proposed attenuation factor of 0.05, used to derive sub-slab cleanup levels, is too conservative and will require efforts that would not be cost effective.

Response: Comment noted. Cleanup Staff acknowledges that the 0.05 attenuation factor was not included in the new ESLs. The indoor air and soil gas cleanup levels when taken together are adequately protective for vapor intrusion risk. The TO section *B.5., Remedial Action Plan and Cleanup Levels*, *Sub-Slab Soil Gas Cleanup Levels,* and the corresponding Finding *Basis for Sub-Slab Soil Gas Cleanup Levels*, has been deleted. The Finding 11.g of the TO notes that the dischargers may propose revised cleanup levels for consideration.

4) *Comment:* The requirement for a risk management plan should be deferred until after the development of the remedial action plan and an evaluation of the effectiveness of the remedial measures have been conducted.

Response: Comment noted. Since cleanup levels will not be reached for some time, risk management measures are needed in the interim. However, a new Finding 13.c has been added to the TO: the remedial action plan may propose revised risk management measures for Regional Water Board consideration.

5) *Comment:* The cleanup levels for tetrachloroethene (PCE) in soil gas should be revised based on the current USEPA updated toxicity factor for PCE.

Response: Cleanup Staff disagrees. DTSC and the Regional Water Board have not approved the new USEPA toxicity factor for PCE. We recently reconfirmed this with a DTSC Senior Toxicologist on July 31, 2013. Thus, no change was made to the TO.

6) *Comment:* The sub-slab cleanup levels in the TO should be revised to reflect the less conservative USEPA sub-slab soil gas to indoor air attenuation factor.

Response: Comment noted. See response to Comments 3above. The TO section *B.5., Remedial Action Plan and Cleanup Levels, Sub-Slab Soil Gas Cleanup Levels*, has been deleted.

7) *Comment:* The indoor air cleanup levels for PCE in the TO should be revised to reflect the less conservative USEPA toxicity factor.

Response: Cleanup Staff disagrees. See response to Comment 5. Thus, no change was made to the TO.

8) *Comment:* Extend the due date for *Task 1. Work Plan for Additional Soil Gas Investigation* to October 31, 2013.

Response: Cleanup Staff agrees. The Task 1 due date has been changed to December 31, 2013, per UATC's extension request.

9) *Comment:* Extend the due date for *Task 2. Completion of Soil Gas Investigation* to January 31, 2014.

Response: Cleanup Staff agrees. The Task 2 due date has been changed to March 31, 2013, per UATC's extension request.

10) *Comment:* Extend the due date for *Task 3. Work Plan for Additional Indoor Air Sampling* to February 28, 2014.

Response: Cleanup Staff agrees. The Task 3 due date has been changed to April 30, 2013, per UATC's extension request.

11) *Comment:* Extend the due date for *Task 4. Completion of Indoor Air Sampling* to May 31, 2014.

Response: Cleanup Staff agrees. The Task 4 due date has been changed to July 31, 2014, per UATC's extension request.

12) *Comment:* Extend the due date for *Task 5. Work Plan for Groundwater Monitoring Wells Installation* to November 30, 2013.

Response: Cleanup Staff agrees. The Task 5 due date has been changed to November 30, 2013, per Moonlite's comment.

13) *Comment:* Extend the due date for *Task 6. Completion of Groundwater Monitoring Wells Installation* to March 31, 2014.

Response: Cleanup Staff agrees. The Task 6 due date has been changed to May 31, 2013, per UATC's extension request.

14) *Comment:* *Task 7. Completion of Zero-Valent Iron Pilot Study* is not necessary since the pilot study is completed and these results will be presented in the Remedial Action Plan.

Response: Cleanup Staff agrees. Task 7 has been deleted.

15) *Comment:* Extend the due date for *Task 8. Remedial Action Plan* to June 30, 2014.

Response: Cleanup Staff agrees. The Task 8 due date has been changed to July 31, 2014, per UATC's extension request.

16) *Comment:* Extend the due date for *Task 9. Implementation of Remedial Actions* to May 31, 2015.

Response: Cleanup Staff agrees. The Task 9 due date has been changed to January 31, 2015, per UATC's extension request.

17) *Comment:* Delete *Task 10. Proposed Deed Restriction* until after the cleanup plan is approved. Alternatively, revise Task 10 to include the option to cleanup to residential standards.

Response: Cleanup Staff does not agree to delete the deed restriction task; however, we added language to reflect the option to cleanup to residential standards. Also see response to Comment 4.

18) *Comment:* The required *Task 12. Risk Management Plan Implementation* should be deferred until after the development of the remedial action plan and an evaluation of the effectiveness of the remedial measures have been conducted.

Response: Cleanup Staff disagrees. See response to Comment 4. However, Task 12 due date has been changed to November 30, 2015, per UATC's extension request.

19) *Comment:* Extend the due date for Task 13. *Five Year Status Report* to January 31, 2020.

Response: Cleanup Staff agrees. The Task 13 due date has been changed to October 31, 2019, per UATC's extension request.

20a) *Comment:* In the Self-Monitoring Program (SMP) for groundwater Site wells, the frequency of sampling should be revised to quarterly events for the first three years, then to semi-annual monitoring thereafter if warranted by stable or decreasing trends of the chemicals of concern in groundwater.

Response: Cleanup Staff disagrees. *Self-Monitoring Program, 8. SMP Revisions,* states that the Regional Water Board Executive Officer may revise the SMP at his own initiative or at the request of the dischargers after considering the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports. If stable or decreasing trends are demonstrated after several quarters, the dischargers can request a reduction in frequency. Thus, no change was made to the TO.

20b) ***Comment:*** Add a provision for cessation of groundwater monitoring if low-threat closure criteria are met.

Response: Cleanup Staff disagrees. After adequate cleanup has been completed, the dischargers may request low-threat closure of wells or the entire Site based on the low-threat closure criteria. Task 13. *Proposed Curtailment*, is usually used to request curtailment of active cleanup, then a period of monitored natural attenuation usually follows to demonstrate plume stability without active cleanup, then a request for low-threat closure may be submitted. Thus, no change was made to the TO.

20c) ***Comment:*** Surface monitoring requirements in the SMP are not necessary since concentrations of PCE in surface water are below the water quality objectives. Surface water monitoring should be deleted or at least be changed from quarterly to annually.

Response: Cleanup Staff disagrees. It is necessary to measure surface water elevations simultaneously with measurements of groundwater elevations in monitoring wells to monitor the flow of contaminated groundwater into Saratoga Creek since it is a gaining creek. Additionally, the proposed active remediation at the Site may not completely break down the PCE in groundwater, leaving more toxic chemicals such as vinyl chloride, which will need to be monitored in the creek. However, the sampling frequency for the creek locations was decreased to semi-annual.

21) ***Comment:*** Regarding *Cleanup Staff Report, IV. Site History*, a list of additional operators/owners of the former Moonlite Cleaners was identified.

Response: Comment noted. See response to Comment 1. Thus, no change was made to the TO.

22) ***Comment:*** **Comments regarding Cleanup Staff Report, VII.** ***Response to March 12, 2013, EKI Report***

22a) The first paragraph should also include a statement that PCE is also present upgradient and southwest of the dry cleaner in MW-1.

Response: Cleanup Staff agrees. The Staff Report Section VII. B has been changed to include this.

22b) ***Comment:*** In the second paragraph, Moonlite notes that localized pumping from nearby water supply wells may have locally influenced groundwater flow directions. Groundwater flow directions were to the west-southwest at the former Chevron station at Moonlite Shopping Center in 1990 and 1991.

Response: Cleanup Staff agrees. The Staff Report Section VII. B has been changed to recognize this.

22c) ***Comment:*** In the third paragraph, Moonlite notes that EKI did not consider groundwater flow directions for the former Chevron USA station that was located on the Moonlite Shopping Center property and closer to the former Moonlite Cleaners than the Shell Station.

Response: Cleanup Staff agrees. The Staff Report Section VII. B has been changed to include this.

22d) ***Comment:*** In the fourth paragraph, Moonlite notes that regional groundwater flow was also described as to the north during the early 1990s.

Response: Cleanup Staff agrees. The Staff Report Section VII. B has been changed to include this.

C. United Artists Theatre Circuit, Inc., Comments

1a) ***Comment:*** The TO naming UATC, a former owner of the Site, as a liable "discharger" is unique and unprecedented. …And it asks the Regional Board to adopt a new precedent under which innocent former landowners will be subject to draconian cleanup liability based solely on the mere existence of a former commercial use of their property and the detection decades later of contamination not previously associated with that commercial use. [I. Executive Summary, Pg.1, first paragraph]

Response: Cleanup Staff disagrees. The recommendation to name UATC as a discharger is consistent with numerous State Water Board Orders because (1) UATC owned the property at the time of the discharge, (2) had knowledge of the activities which resulted in the discharge, and (3) had the legal ability to prevent the discharge. Also see responses to Comment 6.g1. Thus, no change was made to the TO.

1b) ***Comment:*** The Staff's recommendation to name UATC as discharger rejects sound scientific analysis by the USEPA, the Santa Clara Valley Water District, the USGS and other recognized experts in favor of "anything-is-possible" conjecture and speculation. [I. Executive Summary, Pg.1, first paragraph]

Response: Cleanup Staff disagrees. UATC is inaccurately describing these references, and our recommendations are consistent with the work and recommendations of these local, state, and federal agencies as explained in Cleanup Staff's response to Erler and Kalinowski, Inc., below; see response to EKI Comments 1d, and 6, in regard to the USEPA citations; see response to UATC Comment 6e in regards to the Santa Clara Valley Water District citation; and see response to EKI Comment 12 in regards to the USGS citations. Thus, no change was made to the TO.

1c) ***Comment:*** It is incompatible for the Regional Water Board to find that UATC had knowledge by 1978 (when UATC's affiliation with the Site ended) of the activities that resulted in the PCE discharge, while simultaneously concluding that the Regional Water Board did not know by 2001 (when UATC emerged from bankruptcy) that there was PCE contamination at the

Site so that the Regional Water Board could not have put in a claim during UATC's bankruptcy proceedings. [I. Executive Summary, Pg.1, second paragraph]

Response: Cleanup Staff disagrees. UATC is using mistaken logic and comparing apples to oranges. As explained in the Staff Report Section VIII, UATC was the landlord and master lessor of the Site and had knowledge of the dry cleaner's activities that resulted in the PCE discharge. In contrast, the Regional Water Board was not aware of the Site and its contamination until 2009 – almost a decade after UATC filed for bankruptcy. The Regional Water Board oversees thousands of cleanup cases and cannot be aware of all potential future cases that it will oversee at some point in the future.

2) *Comment:* Little is known about dry-cleaning practices at the Site. [II. Factual Background, A. Site History, third paragraph]

Response: Cleanup Staff disagrees, as described in the *Cleanup Staff Report, III. Site History*, much is known about the dry cleaning practices at the Site. UATC developed and owned the property for approximately 15 years, continued as master lessor for an additional 2 years, had tenants that operated a dry cleaning business for 17 years that used dry cleaning equipment with the chemical PCE (see *Cleanup Staff Report, III. Site History B).* See response to Comment 6h below.

Additionally, the 1961 State Fire Marshal Permit lists the dry cleaning equipment initially installed at the Site. The notarized July 11, 1975, "Notice by Transferee" recording the sale of the Moonlite Cleaners and Ye Old Wash House from Herbert C. Bettencourt to John Reed and Blanche Reed lists the same dry cleaning equipment as the 1962 State Fire Marshal permit as well as additional equipment. Thus, no change was made to the TO.

3) *Comment:* Staff has not set forth evidence of a single lease between any landlord and Moonlite Cleaners' owners or operators… no records whatsoever [exist] to shed light on how Moonlite Cleaners actually conducted its operations either before or after UATC vacated the Site in 1978. The absence of pre-1978 records … is attributable in part to the fact that many of UATC's historic records were destroyed in 2006 …as part of an established documentation program. There is nothing in the record, however, that explains the absence of information from the post-1978 record. [II. Factual Background, A. Site History, second to and last paragraph]

Response: See response to Comment 6a below. Furthermore, as explained by UATC in their *April 12, 2013, Technical Report on Site History*, UATC destroyed their own records and expecting Cleanup Staff to resurrect these destroyed documents is impossible and unreasonable. Cleanup Staff notes that UATC did not complete a record search at the Santa Clara County Clerk-Recorder's Office. Moonlite Associates provided information regarding the operators of the former Moonlite Cleaners in their *July 29, Comments on Tentative Order.* See response to Moonlite Associates Comment 1 above. Thus, no change was made to the TO.

4) *Comment:* All claims against UATC were discharged and released in full prior to the January 25, 2001, bankruptcy. [B. UATC's Bankruptcy]

Response: Cleanup Staff disagrees. See response to Comment 7a-c.

5) *Comment:* Site History reports were required from UATC and the City of Santa Clara, but no Site History report has ever been requested from Moonlite Associates. [C. The Claims Against UATC, third paragraph]

Response: Comment noted. Moonlite Associates voluntarily provided historical documents, conducted site investigations and has initiated active remediation at the Site. These activities are well documented on the Regional Water Board GeoTracker website for this case. Staff determined that a Site History requirement was unnecessary due to Moonlite Associates proactive and voluntary submittal of information and initiation of soil vapor extraction (active cleanup).

6a) *Comment:* The Regional Board has failed to identify substantial evidence supporting a decision to name UATC discharger. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, first three paragraphs]

Response: Cleanup Staff disagrees. There is substantial evidence to name UATC as discharger under Section 13304 of the Water Code because UATC owned the property at the time of discharge, had knowledge of the activities that cased the discharge, and had the legal ability to prevent the discharge.

The fact that UATC owned the property during the time that the former Moonlite Cleaners operated and used PCE is not arguable. The release mechanisms specifically associated with the dry cleaning equipment used by Moonlite Cleaners is discussed below in response to Comment 6h. The technical evidence and reasoning for the timing of the release during UATC's ownership is discussed below in Cleanup Staff's response to EKI's comments.

UATC was aware of its tenant that operated a dry cleaner and the hazardous nature of this operation, as discussed below in response to Comment 6h and in *Staff Report, VII. UATC is a Discharger under Water Code section 13304, B.* UATC was involved with the establishment of the dry cleaner and benefitted financially for 17 years from income from the Site.

UATC had the legal ability prevent the discharge as discussed below in response to Comment 6h.

6b) *Comment:* Staff completely ignored Moonlite [Associates] as a source of information about whether PCE was released at the Site while Moonlite [Associates] owned it. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A. 1]

Response: Cleanup Staff disagrees. Moonlite Associates has provided voluminous historical correspondence and voluntarily conducted site investigations and initiated active remediation at the Site. See response to Comment 5. Additionally, Moonlite Associates agreed to voluntarily enroll in the Regional Water Board Cost Recovery Program and to being named as a discharger. In contrast, UATC has not provided Staff with any information that a release occurred during the period following UATC's ownership of the property, i.e., UATC did not conduct its own file review at the local agencies to determine if there had been a documented release. Thus, no change was made to the TO.

6c) ***Comment:*** The Staff's failure to scrutinize these issues [in regard to Staff' allegedly ignoring Moonlite Associate as a source of information and Staff's inadequate determination of the City of Santa Clara as a potential discharger] impacts not only whether all relevant parties are before the Regional Board, but also the validity of the Staff's conclusions that PCE was discharged at the Site before 1978 and leaks from the aging sewers are not a primary cause of contamination. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A. 1, last paragraph]

Response: Cleanup Staff disagrees.

See response to Comment 6b in regards to Staff's alleged failure to adequately investigate Moonlite Associates as a source of historical information.

See response to EKI's Comments 5a, 5b, and 5c in regards to Cleanup Staff's conclusion that the release of PCE occurred through or immediately beneath the concrete slab and not from the City of Santa Clara sanitary sewer.

See response to Moonlite Associate's Comment 1 in regards to potentially naming additional past operators of the former Moonlite Cleaners.

Thus, no change was made to the TO.

6d) ***Comment:*** To the extent that the Staff Report intends to claim that the concentration and distribution of PCE at the Site supports an inference that PCE was release to the surface of the Site before 1978, that claim has already been debunked by the analysis submitted to the Regional Board by EKI, which demonstrates that the concentrations and distribution of PCE at the Site show exactly the opposite. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A. 2a) Presence, Concentration and Distribution of PCE in Groundwater]

Response: Cleanup Staff disagrees. See the Staff Report and the response to EKI's comments for an in depth discussion regarding EKI's assertion that a release of PCE occurred post-1978 from the sewer.

EKI concludes that the PCE release happened after UATC's ownership and control based on its review of groundwater data and a wastewater leakage model. EKI infers that groundwater would have flowed to the northwest prior to the mid-1990s, and since there is no northwest-trending plume, the discharge did not happen during UATC's ownership and control from 1962 to 1978. EKI's conclusion is not technically supportable.

- During the 1960s and 1970s, groundwater was much deeper than today, as documented by SCVWD data and the water well drillers reports for the three deep production wells in the vicinity. Saratoga Creek ran intermittently such that the creek could not have significantly changed the northerly regional groundwater flow direction or caused a northwest-trending plume. Saratoga Creek was an intermittent creek during the 1960's and 1970s, only flowing an average of one-half of each year, which would not be enough to recharge groundwater and cause a northwest trending plume.

- If there was a groundwater plume in the 1960s and 1970s, it would have traveled to the north, and remnants of this are seen in northerly borings B2, B17, B18, and B32.
- PCE has been detected at deeper depths, up to 1,130 ug/L at 50 feet below ground surface in well MW5A, which indicates an older release when groundwater was deeper during the 1960s and 1970s.
- The equipment used by Moonlite Cleaners in the 1960s and 1970s involved PCE making its way onto the concrete floor and the PCE would have slowly seeped into the concrete floor, or through cracks or perforations in the concrete floor. The PCE would then be bound up in the soil beneath the concrete floor for years to decades and would then contribute to the northeast-trending groundwater plume that is seen today. EKI's wastewater leakage model is not valid because it does not consider this mechanism.

Thus, no change was made to the TO.

6e) ***Comment:*** The Staff Reports' argument …that "common industry-wide practices" in the 1960s and 1970s indicate that a PCE release occurred prior to 1978…disregards data in the 2007 Santa Clara Valley Water District Dry Cleaner Study that indicate(s) that at least one quarter of historic dry cleaning operations have never caused PCE contamination. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A. 2b) Use of PCE and "Common Industry-Wide Practices"]

Response: Cleanup Staff disagrees. The SVWD Dry Cleaner Study indicates that three quarters of historic dry cleaners caused a release of PCE contamination, which is one of the multiple lines of evidence that Cleanup Staff relies on. This is corroborated by Site investigations that document a very large release of PCE occurred at the Site through time. The dry cleaner that operated during UATC's ownership used PCE. The release mechanisms associated with the specific equipment used by Moonlite Cleaners since 1961 is explained in response to Comment 6h below., and the 1961 equipment continued to be used in the mid-1970s as explained below in response to Comment 6h. As discussed in the SCVWD Dry Cleaner Study, older dry cleaners are more likely to release PCE due to inefficiencies of older equipment. The SCVWD Dry Cleaner Study cites the 2002 Florida Department of Environmental Protection dry cleaner study (Florida Study) as the most comprehensive review of dry cleaner release mechanisms. The Florida Study concludes that more PCE is released as a result of solvent transfer, storage, and operation than due to sewer line discharges. See pages 17-19, 43-47, and 142-148 of the SCVWD Dry Cleaner Study. See *Staff Report, IV.* Thus, no change was made to the TO.

6f) ***Comment:*** …supposed "inefficiencies of older dry cleaning equipment from the 1960s" …prove nothing about when PCE was released at the Site …[and] …the higher PCE loss rate in the 1960's was caused by greater air emission, not greater discharges to the subsurface. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A. 2c) Inefficiencies of Older Equipment]

Response: Cleanup Staff disagrees. See response to Comment 6e and EKI Comment 5c. Thus, no change was made to the TO.

6g.1) ***Comment:*** Prior cleanup and abatement orders issued by regional boards have relied on at least some technical evidence – such as fate-and-transport analysis – to estimate the timing and

location of the discharge. Sufficient technical evidence is lacking to name UATC as a discharger. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A.3. There is No Precedent for Reaching Conclusions as to the Timing of a Discharge without Eyewitness Testimony or Technical Evidence]

Response: Cleanup Staff disagrees. In this case, there is sufficient technical evidence to name UATC as a discharger. A numerical fate-and-transport model is not needed to constitute substantial evidence in this case. The environmental data show that a significant discharge of PCE occurred from dry cleaners that used PCE while operating at the Site during UATC's ownership. As shown in the SCVWD Study, the earlier a dry cleaner operated the more likely it is that larger quantities of PCE were released to soil and groundwater due to the older equipment and common PCE handling and disposal practices for that time period. As discussed in the Staff Report and the response to EKI's comments, EKI's theory of a post UATC's release being solely responsible for the contamination is not technically supportable. Thus, no change was made to the TO.

6g.2) ***Comment:*** If the Regional Water Board concludes in this case that there is substantial evidence that a PCE release occurred while UATC owned the property, then it follows that everyone who owned commercial or industrial property in the 1960s and 1970s would be liable under Water Code Section 13304(a) so long as they or their tenants used the same chemicals that are later found at the site, and the Staff can allege, as they always will, that historical handling practices were generally worse than they are today. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, A.3. There is No Precedent for Reaching Conclusions as to the Timing of a Discharge without Eyewitness Testimony or Technical Evidence]

Response: Cleanup Staff disagrees. UATC's liability is based on specific facts, such as the equipment used, their release mechanisms, how long the equipment was used, and UATC's knowledge of the use a dangerous and toxic chemical at the Site.

6h) ***Comment*****:** The Regional Board must have substantial evidence that UATC knew or should have known of the discharge and failed to prevent it to conclude that UATC "caused or permitted" waste to be discharged under Water Code Section 13304(a) and legal precedents. The Water Coder requires some evidence of UATC's culpability for the discharge before UATC can be ordered to conduct remediation. In evaluating when a landowner should have known about contamination caused by others, courts have focused on whether the landowner had a reasonable basis for undertaking an inspection for contamination, and if so, whether the contamination was discoverable by reasonable inspection. None of the common release mechanisms identified by the staff would have been detected through reasonable inspection. There is no evidence that UATC had actual knowledge of a discharge of PCE at the Site while UATC owned or leased the Site. There is no basis for inferring that the Fire Marshal Permit actually notified UATC in 1961 (or at any time before 1978) of the danger that California Water Code section 13304 is concerned with: groundwater contamination. The Fire Marshal Permit expressly authorizes Moonlite Cleaners to install equipment that uses solvents, but does not mention the risk of groundwater contamination. Staff's conclusion that UATC should have known that chemicals used by dry cleaners at the Site presented a risk of groundwater contamination is unfounded. There is not substantial evidence that UATC had the legal ability to prevent a PCE discharge. [III. There is no Basis for Naming UATC as a "Discharger" Under the Water Code, B-C]

Response: Water Code section 13304 requires any person who caused or permitted any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, to clean up or abate the effects of the waste.

Former landowners, like UATC, that did not actually cause a discharge may nevertheless be found to have "permitted" waste to be discharged. Specifically, under the State Water Boards' precedential orders, former landowners and former lessees permitted waste to be discharged if: 1) they owned or were in possession of the site at the time of the discharge, 2) had knowledge of the activities which resulted in the discharge, and 3) had the legal ability to prevent it. *In the Matter of Wenwest et al*., Order No. WQ 93-13, *In the Matter of John Stuart*, Order No. WQ 86-15. This test is based on the evolution of the case law from finding a landowner owes no duty to third parties concerning dangerous conditions on his or her property to finding that "an enlightened public policy requires that a landlord owes a duty of care to correct a dangerous condition created by a tenant, where the landlord has actual knowledge of the condition and an opportunity to obviate it." *In the Matter of Logsdon*, Order No. WQ 86-4, citing *Uccello v. Lauderslayer* (1975) 44 Cal. App.3d 504. The State Board has held that actual knowledge of contamination is not needed where it is reasonable for a person to be aware of the dangers inherent in an activity. *In the Matter of John Stuart*. As the former Chief Counsel for the State Water Board, this approach is legally supportable and good public policy: "[s]o long as the owner of a piece of land is aware of what is happening on the land (or should be expected to be aware) and has the power to regulate the conduct of which he or she is aware, the landowner, not the public treasury, should bear the costs of cleaning up pollution and nuisances that occur on the land." Memo from William R. Attwater to State Water Board, May 4, 1987.

There must be substantial evidence to support a finding of responsibility; this means credible and reasonable evidence which indicates the named party has responsibility. *In the Matter of Exxon*, Order No. WQ 85-2. Under State Water Board Resolution 92-49, the Regional Water Board may use any evidence, whether direct or circumstantial, including, but not limited to:

- Documentation of historical activities, waste characteristics, chemical use
- Site characteristics and location in relation to other potential sources of a discharge
- Hydrologic and hydrogeologic information
- Industry-wide operational practices that historically have led to discharges
- Lack of documentation of responsible management of wastes
- Physical evidence, such as analytic data, soil or pavement staining

Applying the above standards, UATC is a properly named discharger. It owned and controlled the Site for the 16 years during which Moonlite Cleaners used, handled and discharged PCE. Starting in 1962, Moonlite Cleaners used at least the following dry cleaning equipment: Hoffman Master Jet Cleaning Unit, Hoyt SF-130 Reclaimer, Per Combo Filter Still Cooker, and a Vaper-Mat Model 800. Each of these machines had PCE release mechanisms. For example, the Per Combo Filter Still Cooker cooked down the leftover PCE mixture from the dry cleaning process, during which the PCE mixture routinely boiled over and released into the environment, either on to the floor or a drain. The cooker produced wet PCE-laden muck waste that would drip while

being disposed of. The Hoyt SF-130 Reclaimer's purpose was to reclaim as much PCE for reuse, but it never reclaimed 100% of the PCE and the remaining PCE mixture either went into a bucket or a drain. The Vapor Mat Model 800 (a sniffer) took PCE in the air and was a major source of PCE-laden wastewater. Also, Moonlite Cleaners' operation was not a closed system, meaning that wet PCE-laden clothes were manually transferred from the wash into the Hoyt SF-130 Reclaimer for drying (and PCE reclaiming, which underscores the amount of PCE still on the wet clothes). Such transfer inevitably led to PCE dripping onto the floor. Moreover, according to a 1975 bulk transfer document, this very same equipment transferred over to a new operator, which means the same 1962 equipment was still being used in 1975 (during UATC's ownership) and resulting in PCE discharges. See Exhibit C to Moonlite Associate's July 29, 2103, letter.

UATC knew about the PCE handling on its property and the hazardous nature of solvent handling, as evidenced by the 1961 Fire Marshall Permit, which clearly alerted UATC to the dangerous nature of PCE and the need for careful handling. The permit put UATC on notice that Moonlite Cleaners' operations had risks related to solvent use and handling not inherent in other businesses. It noted the possibility of toxic concentrations of vapor developing as part of operations. Given the nature of the undertaking, the permit also referred to other applicable laws by stating:

> Your attention is called to local ordinances, rules and regulations and restrictions …Local requirements more stringent than this administered by this office shall apply. This permit is not a guarantee that local authorities will sanction the proposal and you are therefore cautioned to investigate thoroughly before continuing further with this undertaking.

Local ordinances from 1961 could not be located, but in 1975, the ordinance was clear about prohibiting PCE discharges. The August 2, 2012, letter from the City of Santa Clara includes the July 24, 1975, Ordinance No. 1321, An Ordinance of the City of Santa Clara Amending Chapter 23 of the "The Code of the City of Santa Clara, California" By Amending Section 23-32. It states:

> No person shall discharge, or cause, allow or permit to be discharged, into the sanitary sewer system or any part thereof, any toxic or poisonous substances in sufficient quantity to injure or interfere with the sewage treatment process, or in sufficient quantity to create a hazard in the sewage treatment plant or any other part of the sanitary sewer system, or in sufficient quantity to create a hazard for humans, animals or fish in any waters receiving effluent from the sanitary system. No person shall discharge, or cause, allow or permit to be discharge into the sanitary sewer system or any part thereof any industrial waste containing any of the following toxic substances exceeding the concentrations set forth opposite the toxic substances involved, to wit:
>
> Toxic Substances* Maximum Allowable Concentrations

Chlorinated Hydrocarbons,** including but not limited to, pesticides, herbicides, algaecides	Trace

*(abbreviated list)
**(PCE is a chlorinated hydrocarbon)

So not only did UATC know about the use and handling of toxic PCE at the Site, it should have also known by 1975 that PCE in water, even in trace amounts, was hazardous for humans, animals or fish and cannot be put into the sewer system because of its harmful effects to the sewer system and receiving waters.

UATC argues that there is no evidence it received the Fire Marshall Permit. This permit required the plans concurrently approved with it to be submitted in connection with a building permit. One month after the Fire Marshall Permit was issued, UATC through its contractor and agent obtained such a building permit for the Site. These facts suggest that development and permitting of the dry cleaning operation at the Site occurred in concert and it is not credible that UATC and its agents would be completely unaware of the Fire Marshall Permit. UATC's argument that the Fire Marshall Permit did not mention specifically "groundwater pollution" misses the point. Any reasonable landlord upon reading the Fire Marshall Permit would be on notice that a dangerous chemical was going to be used at the Site and required careful handling, a "toxic," flammable chemical that required the use of breathing masks and ventilation (see Fire Marshall Permit). It is unreasonable to think just because the Permit did not mention groundwater that PCE could not be released into the environment and into waters of the state.

Finally, UATC had the legal ability to prevent the PCE discharges as a landowner from 1962 to 1975 and as a master lessor from 1975 to 1978. On November 7, 1975, UATC concurrently sold the Site to Hanson Holding, Inc. and leased it back as a master lessor under a master lease agreement. See Tab 3 and 4 of March 11, 2011, Lori Gualco Letter to Nathan King. Under section 4.02 of that agreement, it specifically refers to existing leases between UATC and its tenants and affirms UATC's rights as landlord under those leases. In that section, UATC also represents that it supplied correct copies of those existing leases. Thus, UATC's claim that the Board is speculating about such leases is simply wrong. Moreover, under the master lease agreement, UATC's initial rent as master lessor was $400,000 (in 1975 dollars) a year for the shopping center and, again, it is not credible to think UATC had no leases for the shopping center tenants given the magnitude of money involved. In addition, under the master lease agreement, UATC had full control of its sublessees as landlord. The State Water Board has held that the contractual position of a party as sublessor and lessee of a service station gave him enough legal control over the property to hold him responsible for what took place there. *In the Matter of John Stuart*. The same is true here: UATC was in a contractual position to legally control what went on the Site. Thus, UATC had the legal ability to prevent the PCE releases at the Site.

Instead of following State Water Board precedents as they apply to former landowners and lessess, UATC selectively picked language from Board orders to argue that UATC must have had or should have had very specific knowledge about the contamination at the Site in order to

be named. Specifically, UATC argues that it must have known or should have known about the discharge and the PCE contamination and failed to prevent it in order to be named to the cleanup order. This is the standard to name current landowners who did not have any connection with the property at the time of the initial release of waste into the environment. See *In the Matter of Arthur Spitzer et al*., Order No. WQ 89-8. See also Manaster and Selmi, California Environmental Law & Land Use Practice, § 32.30[2]-[3].

Similarly, UATC argues that it cannot be charged with knowledge of groundwater contamination associated with dry cleaners because that was not common knowledge until the 1980s. It says it is absurd that a movie theatre company is supposed to know this when even the Regional Board did not know about the contamination at the Site in 2000. As explained above, it is enough that UATC knew or should have known about the use of a dangerous and toxic chemical at the Site and that it required careful handling. UATC cannot and should not disavow all responsibilities as a landlord and master lessor, put blinders on and claim it was simply an unaware movie theatre company. UATC was more than a movie theater company. UATC was a large corporation that owned large commercial properties, like the Moonlite Shopping Center and rented space to commercial operations such as dry cleaners. For example, UATC also owned the a shopping center at 39-49 El Camino real, Millbrae, California, where a dry cleaner also operated from approximately 1958 to 1989 where a release of PCE has occurred. Moreover, that the Regional Water Board did not know about the contamination at the Site in 2000 has nothing to do with whether UATC, as the landlord and master lessee, knew or should have known what was going on property it owned and controlled.

Finally, UATC's recitation of case law on what is reasonable for a landlord to do in terms of inspecting for contamination is irrelevant, since the standard is not whether a prior landowner knew or should have known about specific contamination, as discussed above.

7a) *Comment:* The Bankruptcy Court Order granted a broad discharge for all claims against UATC and included a narrow exception, which did not include liability to the government for property UATC did not own after the date of the Bankruptcy Court Order.

Response: The Bankruptcy Court Order did not discharge UATC's liability for the contamination as explained in responses to Comments 7b and 7c below.

7b) Comment: Water Board cleanup orders are claims under the Bankruptcy Code. The Water Board is authorized to perform cleanup and recover its costs from dischargers under the Water Code and this right of payment is a dischargeable claim under *In re Chateaugay Corp*., 944 F.2d 997 (2nd Dist 1991). It appears staff may be relying on *Chateaugay* for the proposition that an order to stop or ameliorate pollution is not a dischargeable claim. But UATC has not owned or leased the site in several decades and is not currently causing or allowing continuing pollution. The Seventh Circuit's *In re CMC Heartland Partners*, 966 F.2d 1143 (7th Cir 1992) is instructive. *Chateaugay* is not controlling precedent, has not been universally followed, and one district court in the Ninth Circuit has rejected it, focusing only on whether an agency has an alternative right to payment in lieu of cleanup.

Response: Despite the fact that the Board in 2000-2001 (the time of UATC's bankruptcy) had no knowledge of the existence of the Site, the contamination, UATC's connection to it, or of

UATC's bankruptcy, UATC nonetheless argues that the Board had a claim against UATC that was discharged by bankruptcy in 2001, some eight years prior the Board's discovery of the contamination at the Site. UATC focuses on the Board's right to recoup any cleanup costs it incurs under the Water Code to argue that cleanup orders are dischargeable claims under the Bankruptcy Code. That is only part of the inquiry under *Chateaugay*, which held that "a cleanup order that accomplishes the dual objectives of removing accumulated wastes and stopping or ameliorating ongoing pollution emanating from such waste is not a dischargeable claim." (*Chateaugay* at 1008.) The cleanup and abatement order at issue seeks to do precisely that: cleanup accumulated waste and stop the ongoing migration and discharge of PCE into waters of the state. UATC's attempt to step away from the obligation to stop the ongoing pollution based on the fact it no longer owns the property is unavailing and has been specifically rejected by the Third Circuit Court of Appeals (contrary to what UATC has asserted, it filed for bankruptcy in Delaware such that the law of the Third Circuit Court of Appeals controls) in *Torwico Electronics, Inc. v State of New Jersey Dept. of Environmental Protection*, 8 F.3d 146 (3rd Cir. 1993)(obligations of bankrupt debtor ran with the waste, not the land, even though he debtor was no longer in possession of land containing debtor's hazardous waste; merely because a state may have had an alternative right to payment did not convert state's statutory authority to cleanup into a claim). PCE continues to be discharged into waters of the state and the proposed cleanup and abatement order requires UATC to stop it.

In re CMC Heartland, a Seventh Circuit case cited by UATC, merely affirms that CERCLA response costs and damages (as opposed to injunctive relief addressing imminent and substantial endangerment to the public health and welfare) are claims that are dischargeable under bankruptcy.

With respect to the argument that the *Chateaugay*, a Second Circuit case, is not precedential, staff notes it is one of the seminal cases on the intersection of bankruptcy and environmental laws and was followed in the Third Circuit in *Torwico*.

7c) Comment: The Regional Water Board's claim against UATC arose before UATC filed for bankruptcy. The inquiry under the "fair contemplation" test for when a claim arose does not end if the Regional Board lacked actual knowledge of contamination at the Site. If the Regional Water Board should have known of the contamination at the Site by the time of UATC's bankruptcy was confirmed, its claim arose before bankruptcy and was discharged. Other state agencies' knowledge may be imputed to the Regional Water Board. See In re Jensen. The Board should have known about the contamination at the Site because: 1) in 2001, the Board had extensive knowledge of risks of dry cleaner contamination in the Central Valley and Santa Clara via two studies prepared by the Central Valley Regional Water Board and the Santa Clara Valley Water District study cited by staff; 2) the Board had the data necessary to identify historical dry cleaning operations, such as telephone, business, and mall directories; 3) data indicating that releases were common in the dry cleaning industry was available to the Regional Board by 2001 and the Santa Clara Valley Water District study explains that a 2001 EPA survey estimated that 75% of active dry cleaning facilities in the U.S. have caused contamination; and 4) the State Fire Marshal knew since the early 1960s that dry cleaning with solvents occurred at the Site and if UATC should have known about the chemical usage at the Site and its dangers, including the potential for unauthorized discharge, then the State Fire Marshall should have had the same knowledge, which can be imputed to the Regional Water Board under In Re Jensen. If the

Regional Water Board takes the position that UATC, a movie theater company that was operating well before the dawn of modern environmental law, should have known that a release of PCE occurred at the Site before 1978, the Board indisputably should have drawn the same conclusion for itself by 2001.

Response: UATC's argument is basically that if it should have known about contamination at the Site, then the Regional Water Board should have known as well at the time of the bankruptcy in 2001 because it is a regulatory agency that knew dry cleaners caused PCE contamination. That is not the applicable test for when a claim arose in a bankruptcy proceeding.

By way of background, only claims that arise pre-petition may be discharged. Assuming the Water Board's cleanup order is a claim (which it is not), it did not arise until after the bankruptcy concluded. Courts have used a variety of tests to determine when a claim arises, but the "fair contemplation" test is the most common in the environmental cleanup context. Under the test, all future response costs and natural resource damages costs based on pre-petition conduct that can be "fairly contemplated" by the parties at the time of the debtor's bankruptcy are claims. *In re Jensen*, 995 F.2d 925, 930 (9th Cir. 1993) citing *In re National Gypsum,*[1] 139 B.R. 397 (1992). In the CERCLA context, indicia of fair contemplation includes knowledge by the parties of a site in which a potentially responsible party (PRP) may be liable; notification by EPA of PRP liability; commencement of investigation and cleanup activities; and the occurrence of response costs. *In re National Gypsum* at 408. This is the test for when a claim arose in cleanup cases, not UATC's argument that the Board should have known about the contamination at the Site because it knew about dry cleaners causing PCE contamination in 2001. None of the indicia of fair contemplation existed during UATC's bankruptcy in 2001: the Board had no knowledge of the Site, of UATC or its potential liability as it relates to the Site; there were no investigations at the Site; and there were no response costs. The Board only became aware of the Site and the contamination in 2009—some eight years after UATC's bankruptcy was confirmed. Accordingly, the Boards' claim (assuming it is one) never arose in time for it to be discharged.

UATC's attempt, based on *In re Jensen*, to impute the knowledge of the State Fire Marshall in the early 1960s of the dangers at the Site to the Regional Water Board in 2000-2001 is an untenable stretch. In *In re Jensen*, the court imputed the knowledge of North Coast Regional Water Board of potential fungicide spills at a lumberyard onto the California Department of Health Services (DHS) and precluded DHS from recovering from the debtor the cleanup costs DHS eventually incurred in cleaning up the property. The court reasoned that DHS and the North Coast Regional Water Board are state agencies involved in many of the same capacities and that DHS had sufficient knowledge of the debtors' potential liability to give rise to a dischargeable contingent claim. Importantly, the facts supported this result since both agencies worked together to remove the fungicide at the lumberyard one month after the debtors' bankruptcy petition was

[1] The Staff Report misquoted this case and has been revised to strike the following language: "a claim only arises if the government has actual or constructive knowledge of a release or threatened release and could tie the debtor to the release prior to confirmation of the bankruptcy" and replaced with "all future response costs and natural resource damages costs based on prepetition conduct gave rise to claims to the extent such claims could be 'fairly contemplated' by the parties at the commencement of the debtor's bankruptcy."

filed, during which contamination was found and cleaned up by DHS. These facts are simply not present here.

8a) *Comment:* Compliance tasks for all dates should be extended 90 days to allow the dischargers to coordinate efforts. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, A. Deadlines]

Response: Cleanup Staff agrees. The compliance dates for the Tasks below will be changed as follows:

Task 1, Workplan for Additional Soil Gas Investigation, Compliance Date: December 31, 2013

Task 2, Completion of Soil Gas Investigation, Compliance Date: March 31, 2013

Task 3, Workplan for Additional Indoor Air Sampling, Compliance Date: April 30, 2013

Task 4, Completion of Indoor Air Sampling, Compliance Date: July 31, 2013

Task 5, Workplan for Groundwater Monitoring Wells Installation, Compliance Date: November 30, 2013

Task 6, Completion of Groundwater Monitoring Wells Installation, Compliance Date: May 31 2014

Task 8, Remedial Action Plan, Compliance Date: July 31, 2014

Task 9, Implementation of Remedial Action, Compliance Date: January 31, 2015

Task 10, Proposed Deed Restriction, Compliance Date: February 28, 2015

Task 12, Risk Management Plan Implementation, Compliance Date November 30, 2015, and every year thereafter

Task 13, Five Year Status Report, Compliance Date: October 31, 2019, and every five years thereafter

8b) *Comment:* Instead of setting cleanup levels now, the TO could establish a schedule and procedure for establishing them at a more appropriate time. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, B. Clean-Up Levels]

Response: Cleanup Staff disagrees. See response to Moonlite Associate's Comment 2c. Thus, no change was made to the TO.

8c) *Comment:* Task 4. Completion of Soil Gas Investigation, p. 12

Limit the soil gas investigation to further delineating the extent of soil gas contamination without requiring characterization of VOC concentrations to Regional Board ESLs [instead allow the

calculation of a site specific number in the RAP, and allow the use of this risk based cleanup number for definition of soil gas contamination]. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Cleanup Staff disagrees. Soil gas contamination is difficult to define due to preferential pathways and other factors influencing migration and dispersion in the subsurface. It is appropriate to give the dischargers a target to define the soil gas to. This target is the cleanup level specified in the Order. The dischargers need to know the full extent of contamination when preparing the cleanup plan. Allowing the dischargers to define the soil gas contamination to the residential ESL, and not requiring definition to non-detect concentrations, is accommodating. Thus, no change was made to the TO.

8d) ***Comment:*** Task 3. Workplan for Additional Indoor Air Sampling, p. 12

The objectives of this work should be limited to further delineating indoor air contamination without requiring characterization of VOCs to ESLs due to potential background sources. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Cleanup Staff disagrees. If the dischargers encounter background sources, they may present this as part of the investigation. Thus, no change was made to the TO.

8e) ***Comment:*** The objectives of this investigation should be limited to further delineating the extent of groundwater contamination without requiring characterization of VOC concentrations to Maximum Contaminant Levels (MCLs). [Task 5, Workplan for Groundwater Monitoring Wells Installation]

Response: Cleanup Staff disagrees. Groundwater is a potential source of drinking water; therefore, the extent of the plume needs to be defined to MCLs.

8f) ***Comment:*** Task 7. Completion of Zero-Valent Iron Pilot Study, p. 13

UATC should not be responsible for preparing and submitting the completion report since this work has already been completed by Moonlite Associates. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Comment noted. This task has been deleted.

8g) ***Comment:*** Task 9. Implementation of Remedial Actions, p. 14

UATC has not been involved in ongoing actions, and should not be required to document system startup. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Cleanup Staff disagrees. Both dischargers will be responsible for submitting a RAP and then completing this task. Thus, no change was made to the TO.

8h) *Comment:* Tasks 10 and 11. Proposed Deed Restriction and Recordation of Deed Restriction

As UATC is not the owner of the Site, it will have no ability to record a deed restriction on the property, and should be exempted from these requirements. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Cleanup Staff concurs. This task has been changed for Moonlite Associates only.

8i) *Comment:* Task 16. Evaluation of New Health Criteria

This task is routinely performed as part of a five-year review and should be deleted to avoid duplication of effort. [The TO Seeks to Impose Impracticable Deadlines and Other Unreasonable Requirements, C. Individual Tasks]

Response: Cleanup Staff disagrees. This task is a separate contingency task, and it may endanger human health to wait for up to five years for the next five-year review. Thus, no change was made to the TO.

9a) *Comment:* D. Provisions, Cost Recovery

UATC objects to any cost recovery allocation of liability that does not reflect Site history.

Response: Cleanup Staff disagrees. The Regional Water Board in general and this TO in particular do not allocate cost recovery between the dischargers. Thus, no change was made to the TO.

9b) *Comment:* D. Provisions, Access to Site and Records

UATC cannot provide access from the Site and should be excluded from this Provision.

Response: Comment noted. UATC may not grant access to the Site since UATC does not currently own the Site, but UATC will generate records in the future in regards to activities at this Site. Thus, no change was made to the TO.

9c) *Comment:* D. Provisions, Self-Monitoring Program

UATC recommends a change from quarterly monitoring to semi-annual monitoring.

Response: Cleanup Staff disagrees. Quarterly monitoring is a requirement since new and additional remediation is expected, and this remediation could change the conditions in the subsurface. Thus, no change was made to the TO.

10) *Comment:* VI. Conclusion

If the Regional Board names UATC as a discharger, then it must also name the City of Santa Clara as a discharger.

Response: Cleanup Staff disagrees. See response to EKI's comments for a technical discussion of why the release of PCE did not occur from the City of Santa Clara sanitary sewer. See response to EKI Comments 5b, 5d, and 9. Thus, no change was made to the TO.

D. <u>Erler and Kalinowski, Inc. (EKI) Comments on Cleanup Staff Report, on behalf of UATC</u>

1a) ***Comment:*** Staff assertion that PCE that seeped through the building's concrete floor was dense non-aqueous phase liquid (DNAPL) is not supported by available data … PCE groundwater concentrations at the Site are consistent with releases of PCE dissolved in wastewater, not releases of PCE DNAPL.

Response: Cleanup Staff disagrees. EKI has misinterpreted what Staff meant. Staff does not differentiate between the forms of PCE that were released through the building's concrete floor. The release through the building's concrete floor could have been in the form of a pure PCE product, a solution of water and PCE, or both. Also see response to Comment 1d. Thus, no change was made to the TO.

1b) ***Comment:*** Contrary…to the Staff Report, no soil data exists for the Site.

Response: Comment noted. The statement should be "… (the highest PCE concentrations in ***soil gas*** and groundwater are beneath the Site and downgradient from the Site) ..." This change has been made to the TO and the Staff Report.

However, a lack of soil sampling does not and should not preclude the likelihood of PCE contaminated soil beneath the concrete slab. The assumption of PCE contaminated soil beneath the concrete slab is supported by the extraordinarily high concentrations of PCE detected in soil gas beneath the slab.

1c) ***Comment:*** …the highest PCE groundwater concentrations are northeast and southeast of the former Moonlite Cleaners building.

Response: Cleanup Staff disagrees. See Response 1b. The highest concentration of PCE in groundwater is downgradient from the Site to the northeast, not to the southeast. The wells EKI cites, MW4 and MW5, are north east of the Site. Thus, no change was made to the Staff Report.

1d) ***Comment:*** U.S. EPA considers DNAPL to be present in groundwater at the Site if the concentrations of DNAPL compounds in groundwater samples are greater than one percent of their pure phase of effective solubility. One percent of the pure phase solubility of PCE is approximately 2,000 ug/L. PCE concentrations in groundwater at the site are less than this threshold value. …PCE groundwater concentrations at the Site are consistent with releases of PCE dissolved in wastewater, not releases of PCE DNAPL, as asserted by staff… (and this)… rejects sound scientific analysis by the USEPA.

Response: Cleanup Staff disagrees. The US EPA reference EKI refers to states that groundwater in excess of 2,000 ug/L may indicate that groundwater has come in contact with

PCE DNAPL, but the opposite is not necessarily true; hydrodynamic dispersion, wellbore dilution, non-optimal monitoring well placement, and degradation processes can all decrease the concentration of PCE in groundwater. Therefore, concentrations of PCE found in groundwater at the Site, while currently below the 1% solubility concentration, could be caused by DNAPL.

Because of the very high PCE indoor air concentrations in the former dry cleaning location and the very high PCE soil gas concentrations immediately beneath the former dry cleaner, it is most likely that pure PCE product was spilled onto the concrete floor due to typical handling practices or equipment failure. This release mechanism is consistent with the most common release mechanisms identified in the 2007 SCVWD Dry Cleaner Study, which cites a 2002 Florida Department of Environmental Protection dry cleaner study (Florida Study) as an excellent, comprehensive review of release mechanisms from dry cleaners. The Florida Study identified soil beneath the floor slab in the vicinity of the dry cleaning machines and distillation units as the area within dry cleaning operations most frequently contaminated by PCE.

There are at least two scenarios under which free product (DNAPL) releases at the dry cleaner facility would produce groundwater concentrations less than 1% of solubility (less than 2,000 ug/l). In the first scenario, free-product PCE would be sorbed to soil in the vadose zone and never reach groundwater, then possibly contaminating groundwater at a later date when groundwater rose. In the second scenario, a portion of the free-product PCE would reach groundwater (despite some sorbtion to vadose-zone soil) but over time would be depleted, desorbing into the groundwater, so that current PCE concentrations in groundwater would fall below the 1% solubility threshold.

Based on high soil gas concentrations beneath the facility, a possible secondary release mechanism could have been a leak from the sewer lateral immediately beneath the dry cleaning equipment. The Staff Report was revised to indicate a possible secondary release mechanism from the sewer lateral immediately beneath the dry cleaning equipment.

2**) *Comment:*** Staff contend that channelized deposits cause contaminated groundwater to flow to the northeast irrespective of the direction of the groundwater gradient. Consequently, groundwater at the Site flows in the direction of the gradient.

Response: Comment noted. This comment is a mischaracterization of Cleanup Staff's position. Cleanup Staff does not contend anywhere in the TO or the Staff Report that groundwater flows in a direction irrespective of groundwater gradient. Cleanup Staff agrees that groundwater gradient is an influence that determines the direction of groundwater flow at a regional scale, but local influences must also be considered. Specifically, the Staff Report, *Section V. Hydrogeology states:*

"The flow direction of groundwater at the Site is most likely controlled by the north-trending Saratoga Creek, the north-trending ancestral Saratoga Creek stream deposits, the gently north sloping topography, and deep production wells in the vicinity."

This sentence in the Staff Report was changed to add regional groundwater gradient as one of the factors that influence groundwater flow direction.

3a) *Comment:* Staff does not identify nor provide construction details of the deeper production wells that Staff surmises are influencing groundwater conditions at the Site.

Response: Comment noted. Please refer to the *March 19, 1992, Former Chevron Service Station #9-9631, 2798 El Camino Real, San Jose, California*, investigation report that provides information regarding the identification numbers and locations of three deeper production wells within one-half mile radius of the Site, and a discussion concerning the potential influence these wells have on groundwater beneath the Site. Note that this site is located on the same block as the Site, at the corner of Kiely Boulevard and El Camino Real. This report discusses three active (at that time) water production wells located within ½ mile radius of the site (Table 1 and Figure 1), discusses regional groundwater flow to the north and the influence of these deeper groundwater production wells that deviate the local site groundwater flow direction as noted below in Comment 3b. This report is part of the written record for the Chevron case and is located on the County of Santa Clara, Department of Environmental Health, Local Oversight Program Public Record Document Search web page at:

http://lustop.sccgov.org/files/07S1W04K01f/SWI_R_1992-03-11.pdf

Thus, no change was made to the Staff Report.

3b) *Comment:* Production wells screened in the deeper aquifer below the regional clay layer are unlikely to affect horizontal groundwater flow in the shallow zone above the clay layer.

Response: Cleanup Staff disagrees. The deeper production wells have apparently influenced the direction of shallow groundwater flow in the vicinity of the Site from April 25, 1990, to June 7, 1991, on March 4, 1992, on December 15, 1993, and on December 29, 1994. During these periods of time, the shallow groundwater flow directions were primarily to the southwest, which is not consistent with EKI's predicted northwest groundwater flow direction for this time, and not consistent with the regional northerly groundwater gradient. Cleanup Staff discussed this issue of deep groundwater production wells affecting the shallow groundwater aquifer with George Cook with the Santa Clara Valley Water District. The low permeability clay aquitard at approximately 100 feet below ground surface in the vicinity of the Site appears to be somewhat incompetent and about 20 feet thick. Assuming that the groundwater flow direction at the Site is only influenced by Saratoga Creek is not supported by historic groundwater flow direction data and is therefore incorrect. The *January 29, 1996, Technical Response/Workplan for the Former Chevron Service Station #9-9631, 2798 El Camino Real, Santa Clara, California, Table 3, Historical Gradient Data* reports the following groundwater flow directions in shallow monitoring wells (<50 feet bgs):

Date Sampled	Groundwater Flow Direction
4/25/90	SW
6/15/90	SW
9/25/90	SW

12/20/90	SW
3/7/91	SW
6/7/91	SW
9/6/91	W
12/2/91	W
3/4/92	WSW
6/25/92	NW
9/3/92	NW
11/20/92	NW
3/2/93	NW
6/21/92	NNE
9/23/93	W
12/15/93	SW
3/15/94	NW
6/28/94	NE
9/15/94	NE
12/29/94	SW
3/8/95	NNW
6/9/95	NE
9/8/95	NE

Groundwater flow direction appears to be influenced by the deeper production wells in the vicinity of the Site, in addition to Saratoga Creek, as shown in the varying flow directions at the Chevron site during this time period. Otherwise, groundwater flow direction would have been northerly pre-1994 and northeasterly post-1994. Thus, no change was made to the Staff Report.

3c) ***Comment:*** The top of the regional clay layer is encountered at an elevation of approximately 45 feet above mean sea level.

Response: Cleanup Staff disagrees. As documented in the well logs for the three production wells in the vicinity, the top of the clay layer that is assumed to separate shallow groundwater from the deeper drinking water aquifer is located approximately 100 feet below ground surface (the Site is at approximately 80 feet above sea level, which would place the clay at around 20 feet below sea level), The clay is approximately 20 to 40 feet thick. The production wells'

screened or perforated intervals and filter pack are set below this clay layer from approximately 100 feet below ground surface to the total depth of the wells. As discussed above, it does not appear that the regional clay aquitard is completely competent in the vicinity of the Site. Thus, no change was made to the Staff Report.

4) *Comment:* The lower PCE concentrations at locations B-2, B-17, B-3, B-32, B18, and B23 are not inconsistent with a post-1978 release and are likely due to PCE soil vapor migration or PCE dispersion in groundwater.

Response: Cleanup Staff disagrees. The timing of the release of PCE, either before or after 1978, cannot be predicted based solely on the lack of significant contamination in the subsurface to the northwest of the Site due to the uncertainty of the historic groundwater flow direction. As seen at the Chevron station site adjacent to the Moonlite Site, flow direction varied widely in the early and mid-1990s, contrary to EKI's hypothesis that groundwater flowed only to the northwest pre-1994. Thus, no change was made to the Staff Report.

5a) *Comment:* PCE groundwater concentrations are below 1% pure phase or effective solubility and do not indicate DNAPL (which is what a surface spill would consist of) … EKI and West agree that contamination…was caused by PCE-containing wastewater that leaked from sewer lines beneath the former Moonlite Cleaners building and adjacent to the Site.

Response: Comment noted. See responses to Comment 1d. Attenuation of PCE in groundwater easily explains a scenario where less than 1% pure phase PCE can be present as a dissolved plume from DNAPL. Additionally, there is a possibility that the sewer lateral beneath the Site was also a source of contamination, which is supported by the high soil gas results beneath the slab. However, these soil gas results do not indicate that a release occurred from the City sanitary sewer lines behind the facility. See response to Comment 9.

5b) *Comment:* Staff does not mention that the SCVWD found leaking sewer lines to be the most frequent type of releases at dry cleaning establishments. SCVWD (2007) states: "PCE exfiltration from sewer lines connected to dry cleaners in the 1980's and earlier was a primary route of subsurface contamination from dry cleaners (Figure 5)."

Response: Comment noted. Cleanup Staff did not mention that the SCVWD Dry Cleaner Study found leaking sewer lines to be the most frequent types of release because this is not what is concluded in the SCVWD Dry Cleaner Study.

The SCVWD Dry Cleaner Study states that the Florida Department of Environmental Protection and Florida State University study (Florida Study) "… provides an excellent resource for identifying potential release mechanisms and sources…..showed that more PCE mass is released as a result of solvent transfer, storage and operations than due to sewer line discharges." The SCVWD Dry Cleaner Study also states that the State Coalition for Remediation of Dry Cleaners (SCRD) found leaking sewer lines to be the most frequent types of release mechanisms; however, the SCVWD Dry Cleaner Study addresses this discrepancy between the Florida study and the SCRD cases as follows:

"The number of release mechanisms associated with equipment failures and operation is apparently underestimated in the SCRD case profiles, which provide less detailed information on release mechanisms than the Florida study."

The SCVWD Dry Cleaner Study prefers the findings of the Florida study that more PCE mass is released through solvent storage an transfer, equipment operation and maintenance, equipment failure, other spills, and does not support the conclusion by EKI that leaking sewer lines to be the most frequent type of releases at dry cleaning establishments. As discussed in response to EKI Comment 1d, the sewer lateral immediately beneath the dry cleaning equipment is a possible secondary release mechanism. The Staff Report was revised to indicate a possible secondary release mechanism from the sewer lateral immediately beneath the dry cleaning equipment.

5c) *Comment:* The higher PCE loss rate in the 1960s was caused by greater air emissions, not greater discharges to the subsurface.

Response: The SCVWD Dry Cleaner Study at Page 20 indicates that releases above the slab will volatilize more readily than subsurface releases. But this does not preclude a portion of the PCE released at the slab from migrating downward to the subsurface.

5d) *Comment:* Review of the available data supports the finding that a release of PCE-containing wastewater, as opposed to a DNAPL release, is the source of PCE in soil gas and groundwater at the Site. (EKI's position is that the primary release mechanism is from a sewer).

Response: Cleanup Staff disagrees. See response to EKI Comments 1d and 5a - c. The highest soil gas concentrations are directly beneath the slab in the location of the former Moonlite Cleaners, not around the sanitary sewer that services the building, which indicates a release of PCE either through or directly beneath the concrete slab. The highest PCE detected in soil gas concentrations beneath the slab were 5,700,000 ug/m3 PCE at SG2 and SG3 before active soil gas vapor extraction began. The highest soil gas samples collected along the sanitary sewer are less than 1,000 ug/m3 PCE, a significant difference of over three orders of magnitude, and can be attributed to the sanitary sewer gravel pack acting as a preferential pathway from the source area beneath the slab of the former Moonlite Cleaners. Thus, no change was made to the Staff Report.

6. *Comment:* As described by EPA, the fine grained nature of materials like concrete presents a barrier to NAPL entry. NAPL would have spread across the floor rather than seep through concrete.

Response: Cleanup Staff disagrees. Concrete floors usually have cracks, seams, perforations or other pathways that are not water proof. It is common knowledge that concrete is an extremely poor material to use as a water proof barrier for hazardous waste/materials, particularly chlorinated solvents, and this is consistent with the many documented releases through concrete sumps, floors, and vaults at sites documented in the Regional Water Board case files.

Additionally, the EPA reference that EKI provides is used misleadingly. EKI cites the glossary of an EPA article that states:

***"Capillary Barriers** are fine grained lenses, layers and lamination upon which lateral spreading and pooling of DNAPL can occur."*

The EPA cites the source of this definition and explanation of this process as: *"Kueper, B.H., et. al, 1993, A Field experiment to study the behavior of tetrachloroethylene below the watertable: Spatial distribution of residual and pooled DNAPL."*

The EPA definition of capillary barriers and the 1993 Kueper article describe the pooling and spreading of DNAPL in the subsurface above fine grained sediment (clay) in the saturated zone. The terms *"fine grained lenses, layers and lamination"* are geologic terms for describing sedimentary features, and are not terms used for describing concrete.

EKI appears to have misused this reference. Thus, no change was made to the Staff Report.

7. *Comment:* If DNAPL had migrated through the floor (e.g., through pipe penetrations or cracks), the DNAPL still would have had to force its way through the clay underlying the building because DNAPL does not mix readily with water. DNAPL would need to accumulate on the order of several feet to overcome the capillary pressure and enter the clay.

Response: Cleanup Staff disagrees. As shown in Figures 1 and 2 of the 2009 EPA document *Assessment and Delineation of DNAPL Source Zones at Hazardous Waste Site*, small amounts of DNAPL can migrate through vertical conduits in the subsurface and then dissolve beneath the groundwater table to produce a dissolved-phase plume. Thus, no change was made to the Staff Report.

8a) *Comment:* PCE soil gas and indoor air concentrations measured at the Site are entirely explained by a release of PCE-containing wastewater from sewer lines beneath the building (EKI used DTSC's screening level vapor intrusion model GW-Screen, Version 3.0, to model this)

Response: Cleanup Staff disagrees. EKI's use of the GW-SCREEN model is invalid because it used the model incorrectly. The model is designed to use a PCE concentration in groundwater to estimate a soil gas and indoor air concentration. EKI uses a hypothetical PCE concentration in wastewater inside a sewer line as representative of the groundwater concentrations. This is an incorrect use of the model and invalidates EKI's results. Thus, no change was made to the Staff Report.

8b) *Comment:* PCE is found in indoor air samples within buildings to the east and west of the former dry cleaning establishment. The presence of PCE in the other buildings (where no dry cleaning equipment was present) suggests vapor intrusion of PCE from underlying soil and groundwater contamination, not volatilization of PCE DNAPL released during sloppy dry cleaning operations that somehow impregnated the concrete slab, as suggested by Staff.

Response: Comment noted. Lower PCE concentrations in indoor air in adjacent buildings is from vapor intrusion from underlying soil and groundwater, and if there are any cracks in the building walls, it could also be from vapor intrusion from the former dry cleaning tenant space into the adjacent tenant spaces.

9) *Comment:* PCE-containing wastewater was released from the sewer lines because:

1. PCE was released in the dissolved phase because the groundwater samples are less 2,000 ug/L PCE, which is the threshold indicating groundwater has come in contact with PCE DNAPL.
2. PCE has been detected in groundwater samples approximately 350 feet to the east-southeast of the site in (MW2) a cross gradient direction along the orientation of the sewer lines.
3. Video inspection of the City of Santa Clara sewer line revealed possible leaks in the line.

Response to Comment 9.1: Cleanup Staff disagrees: See response to Comment 1d. Thus no change was made to the Staff Report.

Response to Comment 9.2: Cleanup Staff disagrees. The historical direction of groundwater flow to the southwest, as described in response to Comment 3b, could have caused the PCE plume to move southwest. The influence of the gaining Saratoga Creek could then influence the groundwater flow direction to the northeast, accounting for the presence of PCE in groundwater in the direction and at MW2. Thus no change was made to the Staff Report.

Response to Comment 9.3: Comment noted. However, the indoor air and soil gas data, and the most common release mechanisms described in the SCVWD Dry Cleaner Study and the Florida Study, support a release of PCE through the slab. Also, see response to EKI Comments 1d, 5b and 5d. Thus no change was made to the Staff Report.

10) *Comment:* EKI states that PCE groundwater concentrations north and northwest of the Site are attributable to the existing PCE plume which is moving northeast towards Saratoga Creek. EKI attributes the northwest orientation of the plume to a post-1978 release.

Response: Comment noted. However, the lower concentrations of PCE in groundwater north and northwest of the Site do not preclude a pre-1978 release. See response to Comments 4 and 13d. Thus no change was made to the Staff Report.

11) *Comment:* EKI used the San Jose index well as a proxy for regional groundwater conditions.

Response: Comment noted. Staff understands that EKI used this well is a proxy for regional groundwater conditions, and that groundwater has recharged in the Santa Clara Valley Basin. However, the three deep production wells within one-half mile from the Site provide a closer representation of deeper groundwater conditions beneath the Site. The Staff Report was changed in Section VI B. to reflect much deeper groundwater in the 1960s and 1970s.

12) *Comment:* EKI used the groundwater gradients from the Shell station on the east side of Saratoga Creek because the Shell station is the same distance to Saratoga Creek as the Site, and would experience a similar magnitude of effect from Saratoga Creek, but in an opposite direction due to symmetry across the Creek. The groundwater flow pattern, supported by the Shell data, is consistent with expectations for the behavior of an unconfined aquifer near a hydraulically

connected stream. (EKI refers to the USGS for explanation of how groundwater flows into a gaining stream and away from a losing stream).

Response: Cleanup Staff disagrees. See response to Comment 3b. The shallow groundwater data collected from the Chevron site conflicts with EKI's prediction of a northwest groundwater flow direction at the Site during the early 1990s. We cannot assume that the groundwater flow direction is symmetrical on either side of Saratoga Creek without considering the influences of production wells in the vicinity and the depth to groundwater during the 1960s. EKI's assumption that there was shallow groundwater beneath the Site during the 1960s is not supported by the depth to first encountered water on the 1961 well report 07S01W04Q001; first encountered water was reported at 225 feet below ground surface, or approximately -145 feet below mean sea level. It should also be noted that this well is located adjacent to Saratoga Creek. According to this data, and the SCVWD production well data, only deep groundwater beneath the regional aquitard existed beneath the Site until groundwater was recharged. Without shallow groundwater, a release during UATC's ownership during the 1960s would not produce a northwest-trending plume.

Staff agrees and is consistent with the USGS explanation of the direction of groundwater flow in an unconfined aquifer near a hydraulically connected stream. However, Staff does not agree that the direction of groundwater flow at the Shell station, and therefore the Site, are only influenced by Saratoga Creek. Thus no change was made to the Staff Report.

13a) ***Comment:*** The average 1990-1993 gradient was N 36 E, and the average 1994-2001 gradient was N 05 W, thereby documenting a clear and dramatic shift in the gradient direction at the Shell station (from the northeast to the northwest). (This comment is made in regards to Staff's comment that EKI's depiction of a northwest trending groundwater plume at the Moonlite Site is not supported by the groundwater flow directions seen at the Shell gas station based on Staff's review of EKI's data where Staff found a roughly 45 degree variation in groundwater flow direction).

Response: Comment noted. It is doubtful that groundwater flow direction can be estimated to within a degree as estimated by EKI. It appears that EKI agrees with Cleanup Staff's review of the data: the difference between N 36 E and N 05 W is 41 degrees, or slightly less than what Cleanup Staff noted. Additionally, the shallow groundwater data at the Chevron station discussed in response to Comment 3b conflicts with the Shell station data. Thus no change was made to the Staff Report.

13b) ***Comment:*** Since the Moonlite Cleaners Site is on the opposite side of Saratoga Creek, the switch of groundwater flow direction should be mirrored at the Moonlite Cleaners site. This would necessitate a northwest trending groundwater plume at the Moonlite Cleaners Site if the release occurred pre-1978. Since a northwest trending groundwater plume does not exist, the release of PCE must have occurred after the change of groundwater flow direction post-1978, during the ownership of the site by Moonlite Associates.

Response: Cleanup Staff disagrees. As previously discussed, EKI's hypothesis that groundwater flowed to the northwest between 1962 and 1978 is not supported by multiple lines of evidence

provided by Cleanup Staff. See response to Comments 3b, 4, 9.2, 12, and 13a, including further discussion below. Thus no change was made to the Staff Report.

13c) ***Comment:*** Figure 10 of the EKI report depicts a PCE plume that is shifted approximately 60 degrees counter-clockwise from its present configuration.

Response: Cleanup Staff disagrees. This scenario is unlikely. EKI shows a 90 degree shift in plume direction on Figures 10 and 11 of the March 2013 EKI report, and describe it in the text as a 60 degree shift. In comment 13a, EKI is now saying a 41 degree shift took place. EKI should be consistent in its estimation of the magnitude of the purported shift in groundwater direction.

13d) ***Comment:*** If PCE-containing wastewater had been released at the site before 1978, PCE in groundwater would have migrated to the northwest. Calculations performed by EKI …indicates a [PCE plume] still should persist in groundwater northwest of the Site as evidence of this migration. Given no such [plume has] been detected in groundwater northwest of the Site, a pre-1978 release did not occur.

Response: Cleanup Staff disagrees. See response to Comment 12 above. It is doubtful that shallow groundwater existed beneath the Site during most of the 1960s. We have reviewed the USGS surface water discharge records for Saratoga Creek collected at the gage located approximately 0.5 mile southwest of Saratoga (around 9 miles upstream of the Site). The flow within Saratoga Creek was intermittent from 1962 to 1978 at the Site based on the USGS records, and depth to groundwater was very deep during this period (up to 200 feet approximately below ground surface). The only flow into the creek occurred from precipitation and minor surface runoff. In other words, Saratoga Creek only had flowing water when it was raining (it was a losing creek), whereas today groundwater is also flowing into the creek, causing continuous flow (gaining creek).

EKI's assumption, that if a pre-1978 release occurred there should be remnants of a northwest trending groundwater plume, is dependent on (1) shallow groundwater existing beneath the Site, and (2) enough surface water in the losing Saratoga Creek to affect shallow groundwater and to cause a northwest trending plume. Based on the intermittent flow in Saratoga Creek and the depth to groundwater during this period of time, it is unlikely that there was enough surface water in the creek to recharge shallow groundwater beneath the Site. Shallow groundwater did not exist beneath the Site until after the late1960s when the SCVWD began to recharge the deep aquifer in the 1960s. Precipitation and minor surface runoff that would support intermittent flow in the creek would not produce enough water to recharge the shallow groundwater aquifer. . Therefore, a release at the Site in the 1960s during UATC's ownership would not have been significantly affected by Saratoga Creek, and there should not be a northwest trending plume, which is the case. During the 1970s, the shallow groundwater aquifer began to be recharged but was most likely still much deeper than is seen today; therefore the creek would still not have significantly altered the groundwater flow direction to the northwest in the shallow aquifer. Section VII B. of the Staff Report was changed to reflect this.

14, 15, and 16) ***Comments:*** The low PCE in concentrations in groundwater samples from borings B17 and B18 are not inconsistent with a post-1978 release and are likely due to PCE soil

vapor migration or PCE dispersion in groundwater. If a pre-1978 release had occurred, sufficient time existed for a PCE plume to develop in groundwater and migrate to the northwest.

Response: Cleanup Staff disagrees: See response to Comments 4 and13d. Thus no change was made to the Staff Report.

17) *Comment:* EKI contends that since there isn't a deep PCE groundwater plume, the release must have occurred post-1978. EKI discredits Staff's observation that 1,130 ug/L PCE detected in groundwater at 50 feet below the surface is an example that high concentrations of PCE actually do exist at depth by referring to an observation by the EPA that "initial well measurements are sometimes highly variable during a 'break in' sampling and analysis period and potentially less trustworthy. Additionally, EKI notes that groundwater samples collected from this well have decreased since this initial sample was taken, and the downward gradient flow from Saratoga Creek would pull PCE downward to this depth. Therefore, this 1,130 ug/L PCE in groundwater at 50 feet is consistent with a post-1978 release.

Response: Cleanup Staff disagrees. See response to Comment 1d. It is more likely that PCE concentrations in deeper monitoring well MW5A are at least partially indicative of an older release, indicating a discharge when UATC owned the shopping center. Given that the PCE could have been bound up for years to decades in the soil immediately beneath the concrete slab and above the sewer line, these PCE concentrations at 40 feet below ground surface are most likely partially attributable to PCE discharges from the 1960s and 70s. PCE would be sorbed to soil in the vadose zone and not reach groundwater until a much later date.