TRI-S ENVIRONMENTAL
SENSIBLE STRATEGIES AND SOLUTIONS FOR THE ENVIRONMENT

August 31, 2006

Ms. Mary Rose Cassa
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: Comments on ERM Feasibility Study, Hookston Station, Pleasant Hill, California
File No. 07S0156

Dear Ms. Cassa:

On behalf of Walnut Creek Manor ("WCM"), Tri-S Environmental (Tri-S) provides comments on the ERM Feasibility Study as requested in your email dated August 1, 2006 and as part of the 30-day public comment period.

Fundamental Assumption Flawed-PCE Originates From the Hookston Station Site

There is an abundance of evidence that demonstrates PCE does originate from the Hookston Station Site (Hookston Site) and ERM`s repeated statements to the contrary are simply untrue. Further, there is substantial evidence, rooted in the written record, that there has not been a proper, complete and fair comparison of all available PCE data taken On and Off of the Hookston Site. A summary of the main pieces of evidence to support PCE sources on the Hookston Site is provided below:

The Baseline Risk Assessment dated February 2006 reports that 27 of 117 (23.1%) soil samples collected on the Hookston Site contained PCE.

Tri-S letter dated May 5, 2006 makes note that passive soil gas testing that took place March-May 1991 by ENGEO found the maximum PCE concentration from 76 locations at SV-51. SV-51 is located on the eastern boundary of the Hookston Site and contained 116,253 units of ion count (relative intensities). It should also be noted that 50 of the 76 samples or 65.8% tested for detectable concentrations of PCE. ENGEO reported on June 14, 1991 that 17 of the 76 samples contained relatively significant PCE concentrations and noted three different areas of PCE on the Hookston Site:

- East of Ashby Lumber along the northeast property line
- Northeast of the Delta Pacific Building
- At the south end of the property

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Additional passive soil gas testing by ERM took place in November 2001 whereby 69 of 106 samples were taken from the Hookston Site tested positive for PCE. Therefore, 65.1% of the passive soil gas samples found PCE within the Hookston Site in 2001. Tri-S attempted to compare the soil gas concentration in the vicinity of the highest concentration found during the 1991 sampling event at sample location SV-51. We discovered this location to be in between sample locations V-07 and V-09 shown in Figure 5-1 in the ERM Remedial Investigation Report dated August 2004. Where you would expect to see sample location V-08, in close proximity to SV-51 taken from ten years prior, there is none reported. Because no data is reported for a sample location V-08, no comparison can be made to the highest PCE concentration found previously on the Hookston Site. A complete examination of the ERM reports currently available to the public at the Water Board did not provide any explanation or other information regarding the curiously omitted V-08. Finally, Tri-S has not received any response to its request for information and clarification from ERM regarding the curiously missing sample location V-08, which was requested in letter to Mr. Jim Warner dated May 11, 2006 (via US Mail and Facsimile).

After approximately a decade, there appeared to be a stable mass of PCE distributed across the Hookston Site based on the results of passive soil gas testing: 2001 (65.1% detections) and 1991 (65.8% detections). The passive soil gas testing network during both sampling events are similar. It is important to notice that instead of addressing the 65.1% detections on the Hookston Site in 2001, ERM points to off-site sources that would not be in anyway responsible for affecting the overwhelming majority of their on-site detections from passive soil gas monitoring. Other PCE data found on the Hookston Site at different times is discussed below.

ERM reports in their Preliminary Risk Assessment dated October 22, 2002 a substantial mass flux of PCE at sample location SF-04 of 0.086 ug/m^2, min^{-1} in the southern quadrant of the Hookston Site near the east-west center. It should be noted that this location is identified as the maximum reading on-site and other locations on the Hookston Site found PCE mass flux. According to the environmental consultant/chemist who collected the data, Dr. C.E. Schmidt (via personal communication on August 28, 2006), concentrations from the open soil flux procedure are indicative of a localized source. In addition, it is important to notice that the maximum off-site flux of 0.015 ug/m^2, min^{-1} at location SF-23 (located in a residential area) is less than one-fifth (or less than 20%) of the measured results at SF-04.

There are soil and groundwater concentrations of PCE consistent with a source in the general vicinity of or on the Hookston Site, such as SF-04 as mentioned above. Soil sample B-74 at a depth of 30.5 feet below grade was 14.3 ug/kg of PCE on September 18, 2003 while the recent groundwater sample at MW-13A was reported as 45 “J” ug/L of PCE on January 27, 2006. A “J” value is marked as such to indicate an estimated value less than the reporting limit. ERM, in their First Quarterly Groundwater Monitoring Report in 2006, makes a special note on the shallow PCE groundwater plume map marked as Figure 5 that the PCE found in well MW-13A is not used to show a source on the Hookston Site because the data not consistent with historical data. The historical data they refer to includes PCE at 8.83 ug/L on October 10, 2003 and several non-detections. Because data is not consistent does not mean it should be dismissed or ignored. In fact, such results should instead serve as an indication of the need for further investigation.

In ERM letter report dated July 1, 2005 entitled "Soil Vapor and Indoor Air Sample Analyses", ERM "asked the laboratory to reanalyze the chromatograms for indoor air samples collected from an adjacent residential dwelling in January 2004." ERM goes on to state "PCE was not a target compound during the previous indoor air sampling event, however, the raw data collected by the analytical instruments can be used to quantify PCE." The reanalysis was prompted by PCE found in a vapor well sample nearby a residential dwelling. Just prior to that on December 12, 2003, ERM also took and reported on indoor air samples IA-1 through IA-6 (excepting IA-4 which is not reported for undisclosed reasons) within the Hookston Site where PCE was not reported by the laboratory. If ERM deemed it was important to compare subsurface PCE concentrations to indoor air concentrations off-site, why did they not ask the laboratory to also reanalyze the on-site indoor air samples, taken approximately one month prior to the off-site samples, for PCE? Standard environmental investigation practice would suggest that a fair comparison of similar data sets be performed. This shortcoming appears especially relevant since the ERM active vapor well ASV-01 sample revealed 53 ug/m^3 of PCE in the same vicinity of the IA samples from October 10, 2003. Tri-S formally requests the opportunity to examine the PCE concentrations found in the reported indoor air samples IA-1,2,3,5 and 6 collected from Jack`s Autobody and Evergreen. Further, we request the ambient air sample AA-2 taken on the same day, December 12, 2003 also be reanalyzed so the PCE can be reported properly.

Gasoline in Shallow Soils: Magnitude and Cleanup Status of Probable Benzene Source

A Harding Lawson report dated June 26, 1990 found substantial total petroleum hydrocarbons as gasoline (TPHg) in two soil samples collected on October 27, 1989 on the Hookston Site. Sample locations S-4 and S-8, which are both located in the southeast portion of the site, contained 620,000 ug/kg of TPHg and 210,000 ug/kg of TPHg, respectively, by EPA Method 8015 (carbon chain). For undisclosed reasons, the benzene concentration was not reported for either of these samples. According to the literature, the molar fraction of benzene in typical gasoline ranges from 2% to 5% (Odencrantz et al, 1992). It is therefore reasonable to conclude the presence of benzene in the TPHg containing samples.

Harding Lawson clearly documented and demonstrated their concern about the lateral and vertical extent of petroleum affected soils at the Hookston Site and suggest remediation will be required. Tri-S has not found any evidence that the petroleum hydrocarbon remediation took place. In the conclusions section of their 1990 report referenced above, Harding Lawson states:

> Our findings indicate that, although elevated concentrations of petroleum hydrocarbons are present in the vadose-zone soil over a substantial area, they do not extend deeper than approximately three feet in the areas sampled. However, because of the site history and the presence of light industrial businesses on the site we believe the potential exists for petroleum hydrocarbon affected soil to be present in the areas outside those investigated to date. We conclude the remediation of soil from the site containing high levels of petroleum hydrocarbons will be required by the regulatory agencies.

Fate and Transport Evaluation: Source of PCE on Hookston Site and ERM Declares Water Does Not Flow Downhill

ERM attempts to quantify biodegradation/attenuation/decay rates and mass loss in between transects in their Appendix D. It is important to note that the source of PCE that is coincident with the one-dimensional transport analysis relates to well MW-13A for the A-Zone, which is located toward the east-west center and approximately one-hundred feet south of the north-south center of the Hookston Site. The source concentration of PCE was 45 ug/L. Although ERM suggests the possibility of other PCE plumes entering their property, it is abundantly clear and acknowledged by Hookston, that there are considerable sources of PCE on their property. ERM`s vigorous attempt at pointing to other sources of PCE appears to be a concerted effort to draw attention elsewhere, as opposed to accepting their responsibility and obligation to properly track and mitigate their own sources.

In Figure D-2 ERM presents a mass flux approach to estimate the amount of TCE that moves across an imaginary line that connects certain, selected wells. The theory of this approach is fundamentally based upon an imaginary line being perpendicular to the groundwater flow direction, much like a cableway crosses a river. In this instance, ERM draws an imaginary line or transect (Transect II) across wells MW-22A, MW-04 and MW-01 in an attempt to estimate the "On-Site Portion of the Vincent Road source area plume" contribution of TCE entering the Hookston Site TCE plume. ERM is seemingly so desperate to show a contribution to the Hookston Site plume that they have necessarily had to ignore the laws of physics and have essentially declared that groundwater does not flow downhill with gravity and instead flows mostly sideways. This flaw in their assumptions is best illustrated by simply referring to the imaginary line titled "Transect II." Please notice Transect II is improperly drawn approximately 60 degrees away from being perpendicular to the groundwater flow direction. At the same time, please also notice the significant inconsistency in the application of the mass flux approach whereby ERM Transects I and III are oriented to the groundwater contour lines quite differently (and more properly) than Transect II. ERM's fantasy, as it relates to Transect II, would essentially have us believe what amounts to an off-site plume literally making a right turn against gravity into the Hookston Site TCE plume. In an effort to add additional TCE mass, the average concentration across Transect II is also grossly exaggerated. ERM reports a 310 ug/L concentration of TCE over 270 feet of Transect II when MW-01 is the maximum of the three wells in the transect at 99 ug/L. Further, Transect II intersects the 50 ug/L contour on both sides. There is absolutely no possibility of a 310 ug/L concentration along Transect II. Based on the information drawn/depicted by ERM in Figure D-2, it is unclear whether or not any TCE west of Vincent Road contributes to the Hookston Site TCE plume.

Finally, it is important to notice the mass flux approach by ERM compares the mass flux from transects that are approximately 2,000 feet apart for both the A- and B-Zones. Using the assumed bulk flow velocity of 0.110 ft/day, these sections are 49.8 years apart from a contaminant transport examination perspective. Any conclusions drawn from ERM`s mass flux analysis must be treated as highly suspect because of the incredible distance between transects, the lack of an adequate groundwater monitoring network between the transects and the lack of consideration of the vertical transport mechanisms inherent with both the flow system and TCE.

Risk Assessment: Limitations and Concerns

ERM states on page 27 “risks are mostly attributed to benzene and PCE, which do not originate from the Hookston Station Parcel” referring to risk evaluation from the results of air sampling conducted in down gradient homes. Tri-S has shown there are multiple lines of evidence to support multiple PCE sources on the Hookston Site and there are undefined petroleum hydrocarbon sources that may contain substantial benzene concentrations. With this in mind, ERM should be required to re-evaluate their risk assessment conceptual model and better identify the migration pathways of PCE and benzene that originates from the Hookston Site. We also think it is important ERM fully disclose and report both benzene and PCE from all the indoor air samples collected on their property to ensure a proper and fair evaluation of risk.

In a Press Release from the National Academies` National Research Council (NRC) dated July 27, 2006, NRC reports Evidence Growing On Health Risks from TCE; Current data are sufficient for EPA to Finalize Risk Assessment. The NRC goes on to state:

> The evidence on cancer and other health risks from TCE exposure has strengthened since 2001, the committee found. It pointed out that research, including studies of human populations, supports the conclusion that TCE is a potential cause of kidney cancer.
>
> A model is being used to extrapolate from animal studies an estimate of the cancer risk posed by TCE at low doses. The risk is extrapolated below a "point of departure," which is associated with an incremental effect, such as 5 percent more cancers. EPA should consider a range of points of departure in its risk assessment, the committee recommended. Because there is not enough evidence on how TCE triggers cancer to choose the best model for relating the body's response to different dose levels -- a so-called dose-response model -- it is appropriate under EPA's cancer guidelines to extrapolate the risk using a linear model, in which cancer risk rises in proportion to dose.”

After any careful and objective review of the ERM Feasibility Study, it is evident ERM and perhaps the Water Board needs to perform a more thorough evaluation of the risk characterization of the Hookston Site to more fully and properly assess the migration pathways associated with TCE. In addition and based on the recent NRC committee findings, they should also consider a sensitivity analysis that incorporates suggestions put forward by the NRC. For further information, the press release and information on how to order the complete report can be found at the following internet website:
http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11707.

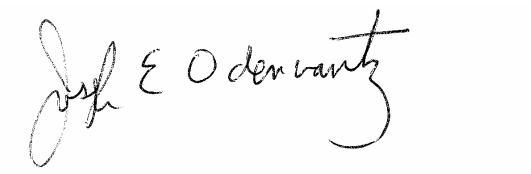
Summary

The ERM Feasibility Study is lacking in that the chemicals of concern that originate from the Hookston Site must include all identified PCE and petroleum hydrocarbons. ERM points to other parties throughout their report while ignoring a vast amount of data that appears to have been purposefully omitted. In addition, it is important to notice that ERM has ignored the laws of physics and concludes that groundwater does not flow downhill in their blatant effort to associate a

small amount of TCE mass flux from off-site locations with the established Hookston Site`s TCE plume. Finally, the TCE risk calculations featured in the feasibility study should, at a minimum, include a sensitivity analysis based upon the recent NRC committee report that highlights evidence growing on health risks from TCE. In addition, risk calculations that consider PCE and benzene should be reconsidered as chemicals of concern that emanate from the Hookston Site as opposed to being outright dismissed by the authors.

Should you have any questions, comments or concerns, please feel free to contact me via telephone at (949) 644-8602 or via email at jodencrantz@tri-s.com.

Very truly yours,



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Reference

Odencrantz, J.E., J.M. Farr and C.E. Robinson. 1992. *Transport model sensitivity for soil cleanup level determinations using SESOIL and AT123D in the context of the California Leaking Underground Fuel Tank Field Manual*, Journal of Soil Contamination, Volume 1, Number 2, pp. 159-183.