Office of Environmental Health Hazard Assessment



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Arnold Schwarzenegger
Governor

MEMORANDUM

TO:

David A. Young

Los Angeles Region IV

California Regional Water Quality Control Board

320 W. 4th Street, 1st Floor Los Angeles. California 90013

FROM:

Hristo Hristov, MD, Ph.D., M.Env.Sc.

Integrated Risk Assessment Branch

Office of Environmental Health Hazard Assessment Assessment

1001 I Street, 12th Floor Sacramento, California 95814

DATE:

April 17, 2006

SUBJECT:

RISK ASSESSMENT OF POTENTIAL MIGRATION OF VOLATILE

ORGANIC COMPOUNDS TO INDOOR AIR, 4900 VALLEY BOULEVARD, LOS ANGELES, CALIFORNIA, AND RESPONSE TO OBHHA REVIEW OF

"RISK ASSESSMENT OF POTENTIAL MIGRATION OF VOLATILE

ORGANIC COMPOUNDS TO INDOOR AIR, 4900 VALLEY BOULEVARD,

LOS ANGELES, CALIFORNIA

SWRCB # R4-05-10

OEHHA # 880118-01

Document Reviewed

(Italicized text is quoted from the report.)

The Integrated Risk Assessment Branch of the Office of Environmental Health hazard Assessment (OEHHA) reviewed the document entitled "Risk Assessment Of Potential Migration Of Volatile Organic Compounds To Indoor Air, 4900 Valley Boulevard, Los Angeles, California", prepared by Environ to provide comments or approval. In addition, a letter entitled "Response to OEHHA review of Risk Assessment Of Potential Migration Of Volatile Organic Compounds To Indoor Air, 4900 Valley Boulevard, Los Angeles, California" was received on March 29, 2006 and considered in the preparation of this memorandum. The letter was prepared to address some initial OEHHA's concerns intended to the attention of the Los Angeles Water Resource Quality Control Board (LA RWQCB) site manager.

California Environmental Protection Agency

Scope of the Review

The documents were reviewed for scientific and regulatory issues related to the risk assessment process applied "to obtain an "unrestricted use" condition for the Site from the California Regional Water Quality Control Board – Los Angeles...." The review was intended to verify the obtained results, elaborate on their analysis, and evaluate the conclusions made by the consultant. Only typographical errors reflecting the scientific integrity and the text interpretation were noted.

Limitations

The Report Format and Content - This short report is limited to the development of risk-based concentrations (RBCs) developed to protect residents potentially occupying the site from inhalation of vapors migrating from contaminated soil and groundwater.

Site Characterization - No site characterization section was found in the provided report. Environ provided (through the LA RWQCB) a set of documents, namely "Fourth Quarter 2003 Ground Water Monitoring report and Confirmation Soil Sampling, 4900 East Valley Boulevard, Los Angeles, California", and "Workplan for Confirmation Soil Sampling and Final Round of Ground Water Sampling, 4900 East Valley Boulevard, Valley Alhambra Property, Los Angeles, California" as part of the Response to OEHHA review letter on March 29, 2006. However, OEHHA was not authorized to review these documents. An accurate estimate of risk from contamination at a site depends on chemical concentrations that reflected the contamination at the site. This requires samples of soil, soil-gas and water to be analyzed for toxic chemicals that are likely to be in the samples. Furthermore, the sample locations must represent the site as a whole or at least not avoid significant contamination. Finally, samples must be handled in such a way that chemical is not lost before the analysis can take place. Due to their proximity to and familiarity with sites, Regional Water Quality Control Board (RWQCB) staff can better determine the sampling locations, sample handling and needed for chemical analysis. Therefore, OEHHA based its analysis on the assumption that the sampling and analysis are comprehensive, representative, and accurate for this site and that all data used in the Risk Assessment are correct and representative of the data shown in the ground water monitoring and confirmation soil sampling report.

Type of Data Used — All modeling is based on soil matrix and groundwater data. CalEPA and US EPA recommend the use of soil-gas data to decrease the uncertainty related to contaminant partitioning among the three soil matrix phases. According to the Environ "Response to OEHHA review of "Risk Assessment of Potential Migration..." letter sent on

March 29, 2006 "no soil-gas sampling was performed following the remediation because of the low concentrations remaining in soil and ground water." This could represent a limitation in the assessment.

Site Background

No Site Background Information was found within the provided risk assessment report and within the documents sent on March 29, 2006.

General Comments

Completeness of the Risk Assessment – The LA RWQCB requested OEHHA to review the risk estimation under residential and construction scenarios, soil ingestion and contact pathways, and migration of vapors originating from soil and ground water. Some initial comments provided by OEHHA to the LA RWQCB resulted in Environ's "Response to OEHHA review of "Risk Assessment of Potential Migration..." letter sent on March 29, 2006 to OEHHA. A Site Conceptual Model (SCM) figure attached to this letter shows a number of complete exposure pathways, including soil ingestion and dermal contact with soil. However, according to the text (response 1) all pathways except vapor migration indoors have been eliminated as incomplete without further explanation. The elimination of potentially relevant pathways should be discussed in the report. OEHHA agrees that risk estimation under residential scenario provides more conservative risk estimates than typical risk estimation under industrial or commercial scenarios. However, this does not apply to the construction worker scenario. Without further explanation, OEHHA cannot support the elimination of pathways under the residential and construction scenarios.

Groundwater Contamination Of Concern – According to the SCM, "ground water at the site is not in a water supply aquifer and too deep for dermal contact". The following table compares the maximum groundwater concentrations to current drinking water Public Health Goals.

Chemical	Maximum Groundwater Concentration (μg/L)	Public Health Goal (µg/L)
Tetrachloroethylene (PCE)*	26	0.06
Trichloroethylene (TCE)*	19	0.8
cis-1,2-Dichloroethylene	89	100

^{*} carcinogen

Based on Table 5 showing parameters used in the vapor migration modeling, it appears that the ground water is located 13 feet below ground surface (ft bgs). The location of the closest drinking water wells is not shown in the report. OEHHA is not in a position to assess the appropriateness of the Environ's conclusion that ground water does not need to be protected as a drinking water source.

Evaluation of Ecological Impact – no discussion of the potential of ecological impact was found in the report.

Soil and Ground Water Vapor Migration to Indoor Air

The following issues were identified in the provided documents:

- 1. According to p. 3 of the report tetrachloroethylene (PCE) was identified at two separate depth strata from approximately 2 to 7 feet below ground surface (bgs) and from 10 to 13 ft bgs. All PCE modeling and risk calculations are based on this depth contamination assumption. The soil interval between 7.3 and 10 ft bgs was not sampled. Environ should have assumed that the PCE contamination starts at 7.3 and extends to 13 ft bgs to avoid modeling underestimation of the risk and hazard.
- 2. Although the report's Table 5 shows the parameters used in the vapor intrusion modeling (from soil and ground water), modeling spreadsheets were not provided within the report. Later, Environ provided example spreadsheets for PCE in soil and refined PCE modeling for one of the three groups of groundwater wells only, as part of its "Response to OEHHA comments..." letter. Thus I was unable to verify the modeling calculations.
 - Two soil strata, namely A and B are shown in the soil modeling section in Table 5. This subdivision is unnecessary and confusing because both strata are sand extending to the groundwater table, and the Johnson & Ettinger model allows assigning strata for the depth interval above the top of contamination not below the top of contamination. However, the spreadsheet provided later shows that the modeling was performed correctly. Accordingly, this comment refers to the presentation in Table 5 only.
 - Table 5 shows three groups of groundwater well locations differing by the different type of soil, respectively soil properties, soil thickness, and contaminant concentrations. The provided spreadsheet shows an example of refined groundwater PCE modeling at one of the groups only. This way it was impossible to understand whether the modeling results are representative of the locations showing the highest vapor migration, and respectively risk and hazard.

- 3. The report does not show the cumulative hazard resulting from inhalation of vapors originating in soil and ground water.
- 4. Table 6 of the report show some RBC calculation errors which were corrected in the revised Table 6 attached to the letter (except for ethylbenzene which RBC should be $2.32 \text{ E}+02 \mu g/kg$).

Based on the above, OEHHA independently remodeled the RBCs and estimated the cumulative risk and hazard. While the total incremental lifetime cancer risk resulted in the low 10^{-5} range, the total hazard index resulted about 0.2 which is even below the recommended acceptable one of 1.0. The obtained RBC and risk values resulted to be close to the ones generated by the consultant.

Conclusions

My review of the presented Risk Assessment Of Potential Migration Of Volatile Organic Compounds To Indoor Air confirmed the consultant conclusions.

The following issues are presented for your consideration:

- 1. The assessment was limited to the indoor air pathway for residents. It did not evaluate all complete pathways under residential and construction worker scenarios.
- 2. The potential ecological impact was not discussed.
- 3. Groundwater was not considered a source or potential source of drinking water. No supportive arguments were found in the provided documents.
- 4. The methods and parameters for evaluating the vapor migration pathway were not clear in the original report. Although, this was eventually clarified by Environ's subsequent letter and my own recalculation, this letter is not part of the report. An amendment to the report may help in this regard.
- 5. Additivity was not considered for non-carcinogens, although my calculations demonstrated acceptable total hazard index.
- 6. The acceptability of the calculated total cancer risk is a risk management decision and the possibility of use restriction or mitigation should be determined by the LA RWQCB.

Please do not hesitate to contact me at (916) 322-8364 or by e-mail at, hhristov@oehha.ca.gov, if you have any questions related to this review.

Reviewed by:

PARKER MILLIKEN

PARKER, MILLIKEN, CLARK, O'HARA, SAMUELIAN
A PROFESSIONAL CORPORATION

JOAN C. DONNELLAN

Direct Dial: (213) 683-6638 E-mail: JDONNELLAN@PMCOS.COM

June 27, 2008

Via Hand Delivery & Facsimile

Fax No. (213) 576-6640
David Young
California Regional Water Quality Control Board
320 West Fourth Street, Suite 200
Los Angeles, California 90013

Re: 4900 Valley Alhambra Blvd Site, (SLIC No 0967, Site ID 204DJ00)

Dear Mr. Young:

Leggett & Platt Incorporated hereby requests that the file containing all documentation relied on by the Board in the above referenced matter be made available for inspection and copying no later than July 2, 2008 to assist both Valley Alhambra and Leggett & Platt Incorporated to evaluate the filing of a Petition for Reconsideration of the order issued in the June 11th 2008 letter pursuant to California Water Code Section 13267 and a Petition for Review and Abeyance with the State Water Board under California Water Code Section 13320.

Because State Water Board Counsel has advised us that the petitions must be filed by July 11, 2008, we request an expedited response to avoid further prejudice to our client.

Leggett & Platt Incorporated makes this request exclusively in its role as administrator of the cap fund established by the settlement agreement between Valley Alhambra and Leggett & Platt Incorporated and does not admit liability for the condition of the above referenced site.

Please contact Eddie Arslanian at Environ to arrange the date for inspection and copying.

Very Truly Yours,

Joan C. Donnellan

PARKER, MILLIKEN, CLARK, O'HARA & SAMUELIAN

hulla.



A Professional Law Corporation

June 27, 2008

Via U.S. Mail & Facsimile

(213) 576-6640 Mr. David Young California Regional Water Quality Control Board 320 West Fourth Street, Suite 200 Los Angeles, California 90013

Re: 4900 Valley Alhambra Blvd. Site, (SLIC No 0967, Site ID 204DJ00)

Dear Mr. Young:

My firm represents Valley Alhambra Properties, the owner of the above referenced property. We are in receipt of a recent order issued by the State Water Board with reference to this property. On behalf of our client, we hereby request that the file containing all documentation relied on and generated by the Board in the above referenced matter be made available for inspection and copying no later than July 2, 2008 to assist us and our consultants in evaluating the recent order in the context of the entire site history and to evaluate and, if necessary, file a Petition for Reconsideration of the order issued in the June 11, 2008 letter pursuant to California Water Code Section 13267 and a Petition for Review and Abeyance with the State Water Board under California Water Code Section 13320.

Because State Water Board Counsel has advised us that any such petitions must be filed by July 11, 2008, we request an expedited response to this request to avoid prejudice to our client in this matter.

Please contact Eddie Arslanian at Environ as soon as possible to arrange a date for inspection and copying. Should you have any questions or need further information to process this request, please do not hesitate to contact me.

Very trúly yours,

Linda L. Northrup

Mr. David Young June 27, 2008 Page 2

cc: Joan C. Donnellan, Esq. (by U.S. Mail)

Mr. Gary J. Herman, Sr. (by U.S. Mail)

Mr. Eddie Arslanian (by U.S. Mail)

Mr. George Linkletter (by U.S. Mail)

Ms. Sue Hahn (by U.S. Mail and Facsimile)

ENVIRON

FACSIMILE COVER LETTER

Date:

July 7, 2008

To:

UST File Review

From:

Eddie Arslanian

Company:

LARWOCB

Company:

ENVIRON

Fax No.:

213-576-6707

1

Fax No.:

(213) 943-6301

Project No.:

Total # of Pages:

(including cover page)

Message:

In anticipation of a filing of a "Petition for Reconsideration" by this Friday, July 11, ENVIRON requests to review files this week for the Valley Alhambra Property, 4900 Valley Boulevard, Los Angeles, California (Underground Storage Tank ID No. 900320052). The site also has a SLIC listing (SLIC No. 0967) and we have made a separate request for that file under the SLIC program. Please coordinate with Mr. David Young, the case officer under the SLIC listing, to expedite this process.

Please call me at 213-943-6326 to set up an appointment. Thank you.

copy: Mr. David Young, Los Angeles Regional Water Quality Control Board

Ms. Su Han, Los Angeles Regional Water Quality Control Board

ENVIRON

FACSIMILE COVER LETTER

Date:

July 7, 2008

To:

SLIC File Review Request

From:

Eddie Arslanian

Company:

LARWQCB

Company:

ENVIRON

Fax No.:

213-576-6717

Fax No.:

(213) 943-6301

Project No.: SLIC No. 0967

Total # of Pages: 1

(including cover page)

Message:

In anticipation of a filing of a "Petition for Reconsideration" by this Friday, July 11, ENVIRON requests to review files this week for the Valley Alhambra Property, 4900 Valley Boulevard, Los Angeles, California (SLIC No. 0967). Please coordinate with Mr. David Young, the case officer, to expedite this process.

Please call me at 213-943-6326 to set up an appointment. Thank you.

copy: Mr. David Young, Los Angeles Regional Water Quality Control Board

Ms. Su Han, Los Angeles Regional Water Quality Control Board

PARKER, MILLIKEN, CLARK, O'HARA, SAMUELIAN
A PROFESSIONAL CORPORATION

PEDRAM MAZGANI

Direct Dial: (213) 683-6686 E-mail: PMAZGANI@PMCOS.COM

July 10, 2008

Via U.S. Mail & Facsimile [(213) 576-6640]

Attn: David Young California Regional Water Quality Control Board 320 West Fourth Street, Suite 200 Los Angeles, California 90013

Re: 4900 Valley Alhambra Blvd Site, (SLIC No 0967, Site ID 204DJ00)

Dear Mr. Young:

On July 10, 2008, Leggett & Platt Incorporated filed a Petition with the State Water Resources Control Board pursuant to Water Code Section 13320 for review of the California Regional Water Quality Control Board, Los Angeles Region's Section 13267 Order issued to Leggett & Platt Incorporated on June 11, 2008. Pursuant to Title 23 of the California Code of Regulations, Section 2050.5(a) you are requested to file the administrative record, including available tape recordings and transcripts, if any, with the State Water Resources Control Board within thirty (30) days.

Please contact me if you have any questions.

Very Truly Yours,

Pedram Mazgani PARKER, MILLIKEN, CLARK,

O'HARA & SAMUELIAN

cc: Ms. Linda Northrup (via facsimile)

Mr. Gordon Billehimer (via facsimile)

Mr. Eddie Arslanian (via facsimile)

Mr. George Linkletter (via facsimile)

Ms. Sue Hahn (via hand delivery)

4009-700 (330435)

Joan C. Donnellan SBN 79462 Gary A. Meyer SBN 94144 Pedram F. Mazgani SBN 204808 PARKER, MILLIKEN, CLARK, O'HARA & SAMUELIAN A Professional Corporation 555 S. Flower St., 30th Floor Los Angeles, California 90071-2440 Telephone: (213) 683-6500 (213) 683-6669



Leggett & Platt, Incorporated

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

IN THE MATTER OF THE PETITION OF LEGGETT & PLATT, INCORPORATED, FOR REVIEW OF **WATER CODE SECTION 13267** ORDER DATED JUNE 11, 2008, BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD. LOS ANGELES REGION.

Petition No.

DECLARATION OF GEORGE LINKLETTER IN SUPPORT OF PETITION FOR REVIEW PURSUANT TO WATER CODE SECTION 13320 AND 23 C.C.R. SECTION §2050 ET SEQ. [Request To Be Held In Abeyance Under 23 C.C.R. §2050.5(d)] and STAY OF ORDER

I, GEORGE O. LINKLETTER, declare as follows:

- I declare under penalty of perjury that I am a Principal and Senior Vice President of ENVIRON and have served as the Principal-in-Charge of investigation, evaluation and remediating the PCE/TCE contamination at 4900 East Valley Boulevard, Los Angeles California ("Site").
- I have both A.B. and A.M. degrees in Geology from Dartmouth College, and a Ph.D. in Geology from the University of Washington. I am a Professional Geologist in the State of California with over 35 years of experience, including extensive experience in investigating suspected contamination, characterizing contaminated sites and developing and successfully implementing remedial programs. A copy of my curriculum vitae is attached hereto as Exhibit A.
- My experience extends to all types of industrial contaminants in soil and ground 3. water, including PCE/TCE, in both rural and urban settings.

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- 4. ENVIRON was engaged by Leggett & Platt Incorporated in 1998 as a consultant, to evaluate claims of contamination alleged in a complaint filed by Valley Alhambra, the Site owner, against Leggett & Platt Incorporated, Dresher, Inc., and alleged prior tenants at the Site. ENVIRON's evaluation was based on data reflected in reports filed with the California Regional Water Quality Control Board –Los Angeles Region ("Regional Water Board") by RMT Environmental in 1992 and 1993 in connection with the excavation and remediation of soil adjacent to a former paint dip tank system, which was removed by RMT. We also reviewed reports filed with the Regional Board in 1993 and 1994 by CLT Engineering Services, Valley Alhambra's consultant, in connection with an investigation of the Site and reflecting the presence of PCE and TCE in the subsurface adjacent to the paint tanks.
- 5. As a condition of the settlement of the litigation in 2000, Valley Alhambra and Dresher Inc./Leggett & Platt, engaged ENVIRON to investigate and remediate the PCE/TCE contamination reflected on the "Investigation Results Report" dated December 9, 1999 in accordance with the terms of the Settlement Agreement between Valley Alhambra, Dresher, Inc. and Leggett & Platt Incorporated.
- 6. The Regional Water Board issued a letter dated January 17, 2001 requiring a Subsurface Site Assessment Work Plan. In that letter, the Regional Water Board requested information regarding site use history and previous environmental investigations conducted at the site.
- 7. Early in the investigation process, the Regional Water Board requested that ENVIRON submit a work plan to identify the migration of contaminants off site on the property located at 4880 East Valley Boulevard, west of the Site. In response, ENVIRON submitted the "Work Plan for Off-Site HydroPunch and Bedrock Identification" dated February 22, 2001, affecting the adjacent property owned at that time by the Corradini Corporation.
- 8. On April 30, 2001, ENVIRON submitted to the Regional Water Board its "Response to Request for Subsurface Site Assessment Work Plan." ENVIRON's April 30, 2001 submittal addressed certain issues raised by the Regional Water Board in its letter dated January 17, 2001.

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The historical uses of the site and prior environmental investigations, including 9. remediation efforts, were documented in Attachment C to ENVIRON's April 30, 2001 submittal. Contrary to the statement in the June 11, 2008 Order from the Regional Water Board, the "dip tanks" and underground storage tanks used in the bed frame assembly process were used to store paints, not solvents, as reflected in reports filed with the Regional Board.

- Documentation on the site geology/hydrogeology, including several regional maps 10. show the site to be located on shallow alluvial deposits, which lie above a non-waterbearing formation. Based on ENVIRON's site investigation, including generally the stratigraphy interpreted from boring logs and specifically two borings in which no ground water was encountered in the southern portion of the site, the water-bearing strata at the site were confirmed to be locally variable.
- Research into ground water supply wells showed that there are no public supply or 11. privately owned wells within a one-mile radius of the Site.
- Initially, the Regional Water Board approved the work plan and its addendum in a 12. letter dated April 18, 2001. However, the work plan was not implemented due to inability to gain access to the Corradini property in spite of the efforts of ENVIRON, various attorneys, and the Regional Water Board itself (letter dated June 5, 2001; see Exhibit B). The Regional Water Board made no further demands to characterize the migration of contaminants off site.
- On June 5, 2001, the Regional Water Board issued a letter regarding ENVIRON's "Response to Request for a Subsurface Site Assessment Work Plan," dated April 30, 2001. In that letter, the Regional Water Board required that a work plan be submitted to delineate soil contamination west of the recognized source area. On June 20, 2001, ENVIRON submitted a "Work Plan to Delineate Soil West of Suspected Source Area," which involved advancing two soil borings (SB-1 and SB-2) along the western property boundary. This work was completed on June 22, 2001 and an update was provided to the Regional Water Board in ENVIRON's "Status of Project" letter dated October 31, 2001. The analytical laboratory reports of the soil samples and a figure depicting the locations of the two soil borings (SB-1 and SB-2) are collectively attached hereto as Exhibit C. Notably, SB-1 and SB-2 were advanced to the depth of the capillary

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fringe, just above the water table. The results from the deepest samples were judged reflective of ground water conditions and demonstrated only low or nondetectable concentrations of contaminants at the western boundary of the Site, adjacent to 4880 East Valley Boulevard.

- 14. On April 30, 2001, ENVIRON submitted an "Interim Remedial Action Plan" (IRAP) to address subsurface volatile organic compounds (VOCs). The Regional Water Board authorized the implementation of the work on June 8, 2001. The remediation system, consisting of 2-PHASE soil vapor and ground water extraction, began operating on December 6, 2001. Following an October 8, 2002 on-site meeting with representatives from ENVIRON (George Linkletter, Eddie Arslanian, and Bita Tabatabai) and the Regional Water Board (David Young and J.T. Liu), the Regional Water Board authorized ENVIRON to shut down the remediation system in order to evaluate possible rebound of VOCs in ground water. On October 15, 2002, ENVIRON submitted to the Regional Water Board a "Request for Post-Remediation Monitoring" documenting the outcome of the October 8, 2002 meeting (see Exhibit D).
- 15. Following the agreed upon number of post-remediation ground water monitoring events, a meeting was held on November 18, 2003 between representatives from ENVIRON (George Linkletter, Bita Tabatabai, and Eddie Arslanian) and the Regional Water Board (David Young and J.T. Liu) to discuss the data from the post-remediation ground water monitoring and protocols for confirmation soil sampling and a final round of ground water monitoring as a prelude to site closure (No Further Action [NFA] designation).
- 16. On December 3, 2003, ENVIRON submitted its "Work Plan for Confirmation Soil Sampling and Final Round of Ground water Sampling." The work plan included an historical summary of the soil, soil gas, and ground water data collected from the Site. In a December 9, 2003 email (see Exhibit E), Mr. Young approved the work plan, noting that "the only comment I have is with regard to analysis for VOCs. Due to the nature of this sampling event (confirmation sampling for site closure), VOCs should be analyzed in both soil and ground water by EPA Method 8260B. This analytical method covers a broader range of analytes, which is helpful information in determining if the site is eligible for closure. Other than this issue, everything else appears appropriate." ENVIRON addressed Mr. Young's comment using the requested method

PARKER MILLIKEN 28 CLARK O'HARA & SAMUELIAN, A PROFESSIONAL on samples collected on December 18 and 22, 2003.

- 17. In a January 16, 2004 email (see Exhibit F), ENVIRON submitted to the Regional Water Board the results of the confirmation soil sampling and final round of ground water sampling and requested an NFA designation for the site. In a February 11, 2004 email (Exhibit G), ENVIRON followed up with Mr. Young on the status of the NFA. In a February 24, 2004 email (see Exhibit H), Mr. Young requested a few items after talking to Regional Water Board "management" for the "closure process." In a March 25, 2004 email (see Exhibit H), ENVIRON submitted a case review form via electronic mail.
- 18. Following various emails between ENVIRON and Regional Water Board staff (see Exhibit I), in a June 30, 2004 email (see Exhibit I), Mr. Liu stated that Mr. Young had begun working on the NFA designation for the site.
- 19. In an August 10, 2004 email (see Exhibit J), ENVIRON once again submitted information to Mr. Young regarding the Site use history.
- 20. Following various emails between ENVIRON and Regional Water Board staff (see Exhibit K), in an October 1, 2004 email (see Exhibit L), Mr. Liu stated that the closure was discussed with Dr. Arthur Heath, Remediation Section Chief.
- In an October 6, 2004 telephone conversation with Mr. Liu, ENVIRON informed the Regional Water Board that the Site is not located within the San Gabriel Valley Superfund Area. Also, Mr. Liu stated that a deed restriction would be placed as part of the NFA designation for the Site, restricting the use to non-sensitive receptors (i.e., excluding uses such as residential, schools, health care). In an October 6, 2004 email (see Exhibit M), ENVIRON confirmed its understanding of the results of the telephone discussion held earlier that day.
- 22. In a March 1, 2004 letter to the Regional Water Board (see Exhibit N), ENVIRON requested removal of the remediation equipment from the Site. Subsequently, upon receiving the Regional Water Board's approval, the remediation equipment was removed.
- 23. To address the Regional Water Board's concern that a deed restriction would be required for unrestricted future use, and the implications of VOCs remaining in soil and ground water, ENVIRON prepared a "Risk Assessment of Potential Migration of VOCs to Indoor Air,"

RKER MILLIKEN 28 ARK O'HARA & dated November 28, 2005. The risk assessment concluded that the "cumulative cancer risks are no higher than 1 X 10⁻⁵ (mostly attributed to PCE) and recommended that the Regional Water Board provide an NFA designation for "unrestricted use for the site." The Regional Water Board submitted the risk assessment to the Office of Environmental Health Hazard Assessment (OEHHA) for review. OEHHA provided its comments to the risk assessment in an email dated January 17, 2006. On March 9, 2006, ENVIRON submitted a response to Regional Water Board and OEHHA responding to the OEHHA comments. In its April 17, 2006 memorandum addressed to the Regional Water Board, OEHHA stated that it agreed with ENVIRON's conclusions regarding the risk assessment, but raised certain questions for Regional Water Board consideration. The OEHHA memorandum was first submitted to ENVIRON via facsimile on July 13, 2006.

- 24. On January 19, 2007, representatives from ENVIRON (George Linkletter, CY Jeng, Eddie Arslanian), the Regional Water Board (Adnan Siddiqui¹ and David Young), and representatives of the property owner and Leggett & Platt met to discuss the outstanding items raised in the OEHHA memo. It is my recollection and understanding that, at that meeting, the Regional Water Board agreed on an approach to address the various comments made by OEHHA.
- At the January 19, 2007 meeting, Messrs. Siddiqui and Young indicated that they would discuss with Regional Water Board upper management whether there would be a need to conduct a post-remediation soil vapor study to confirm that there had been no change in the Site from the last ground water sampling as part of the closure process.
- 26. In a March 16, 2007 telephone conversation, David Young stated to Eddie Arslanian that Ms. Su Han had been assigned as the case supervisor for the Site, taking over from Adnan Sidiqui. George Linkletter, Eddie Arslanian, Seema Sutarwala and Regional Water Board staff (Su Han and David Young) met on May 16, 2008. At that meeting, in spite of the history of events, as summarized above, Regional Water Board staff stated that additional work would be required prior to obtaining closure for the Site. Regional Water Board staff, however, did not

¹ Adnan Siddiqui took over the site supervisor position after J.T. Liu transferred to the California Department of Toxic Substances Control.

identify any new evidence or changes of circumstance that would justify the Regional Water Board's apparent change in position.

- 27. My opinion regarding the current status of the Site and the probability of off site migration is based on the historical investigations conducted by other consultants, as well as ENVIRON's Investigation Results Report and subsequent reports of ground water and soil testing results.
- 28. In my opinion, investigation, assessment, and remediation activities conducted to date, and the data derived as a result thereof, do not support the need for further investigation for the following reasons:
 - The Site is located on shallow alluvial deposits, which lie above a non-waterbearing formation. Further, borings and wells installed at the Site confirm that the water-bearing strata at the Site is locally non-contiguous and that there is relatively little water present. In light of these data, contamination detected in shallow ground water beneath the Site does not pose a threat to aquifers that may be present down valley to the west of the Site.
 - There are no public supply or privately owned wells within a one-mile radius of the Site.
 - Ground water testing between 2001 and 2003 demonstrated that PCE levels in the ground water beneath the Site were reduced by orders of magnitude (e.g., from a peak of 4,800 µg/l to 26 µg/l at MW2, which is located immediately adjacent to the source area at the Site) as a result of Regional Water Board approved remediation at the Site.
 - Investigations relating to historic operations at the Site are inconclusive regarding the cause of the PCE contamination at the Site but clearly defined the source area. Given the results of the assessment, investigation, and remediation at the Site, it appears that source contamination at the Site has been sufficiently remediated and remaining materials do not pose a substantial risk to human health or the environment.
 - Data collected from monitoring wells and soil borings along the western property line of
 the Site (as well as other data points located downgradient from the source area), when
 compared to substantially higher contamination levels in the source area on the Site and
 within the context of the hydrostratigraphy at the Site, indicate only limited migration of

contaminants away from the source area.

- The radius of influence of the remediation system that operated at the Site, which include an extraction well immediately adjacent to the Site's western property line, indicate that the remedial process also addressed adjacent contamination which may have migrated to the downgradient property.
- The analytical results from the deepest samples were judged reflective of ground water conditions and demonstrated only low or nondetectable concentrations of contaminants along the western site boundary prior to the startup of the remediation system.
- ENVIRON prepared a "Risk Assessment of Potential Migration of VOCs to Indoor Air," dated November 28, 2005, which concluded that the "cumulative cancer risks are no higher than 1 X 10⁻⁵ (mostly attributed to PCE) and recommended that the Regional Water Board provide an NFA designation for "unrestricted use for the site." In its April 17, 2006 memorandum addressed to the Regional Water Board, OEHHA stated that it agreed with ENVIRON's conclusions regarding the risk assessment.
- The Regional Water Board has previously determined that the Site is suitable for closure.

 To my knowledge, the Regional Water Board has no new information or evidence to suggest a change from the empirical results that the Regional Board relied on to authorize the removal of the remediation equipment in preparation to formally close the Site, and thus to justify the demand for additional investigation of VOC's at the Site.
- Remaining contamination at and beneath the Site should dissipate without further active remediation and there is no evidence to suggest that it will pose a significant risk to human health or the environment.
- 29. The cost of additional investigation would require the development of a new scope of work for off-site investigation, installation of ground water wells, monitoring costs, additional reporting and related work.
- 30. Since approximately 1998, approximately \$913,000 has been spent to address environmental investigations and remediation at the Site. The <u>minimum</u> estimated costs to comply with the requirements of the Regional Water Board's Order dated June 11, 2008 will

KER MILLIKEN 28 RK O'HARA & MUELIAN, A likely be on the order of \$250,000, as illustrated in the estimate presented in the table below.

Order Requirement	Expenditures and Associated Timeframes
#1: Site Conceptual Model	\$25,000 (by August 19, 2008)
#2: Preparation and Implementation of Work Plan for Ground Water Characterization	\$25,000 (by August 19, 2008) \$130,000 (starting September 2008 – assuming Regional Water Board approval of work plan within 30 days of submittal)
#3: Preparation and Implementation of Work Plan for Soil Gas Investigation, and vapor Intrusion Evaluation.	\$10,000 (by August 2008) \$30,000 (between September and December 19, 2008)
#4: Resuming Semi-Annual Ground Water Monitoring	\$30,000 (minimum of 2 events). \$15,000 by January 31, 2009.

To date, ENVIRON has spent approximately \$913,000 in the site characterization, remediation and follow up consultation and reports to secure a closure. This does not take into consideration the costs incurred by RMT on behalf of Dresher Inc. or CLT Environmental on behalf of Valley Alhambra. To date, I estimate, based on our records and the information provided in connection with the RMT investigation and remediation and the CLT investigation, that over One Million Dollars has been spent to characterize and remediate the Site.

- 31. It is my opinion that the information regarding the use history of the Site and data from investigations by other consultants, ENVIRON's investigations, the ground water sampling data submitted to the Regional Water Board after the completion of the remediation at the Site, and the results of ENVIRON's human health risk assessment strongly suggest that there is a low probability of significant off-site contamination migrating from the Site that would present an unacceptable risk to human health.
- 32. It is also my opinion that, given the extensive work performed at the Site over the last 10 years, characterization of the Site is sufficient to understand the pre- and post-remedial conditions at the Site.

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33. Further, it is my opinion that the Regional Water Board's June 11, 2008 Order to commence a new investigation would result in excessive costs that will not result in corresponding benefits to public health and safety especially given the Regional Water Board's Order, which does not define the clear objectives of the additional testing.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct.

Executed this 10th day of July, 2008, at Los Angeles, California.

GEORGE O. LINKLETTER, Declarant

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George O. Linkletter, Ph.D.

Education

1971 Ph.D., Geology, University of Washington, Seattle

1967 A.M., Geology, Dartmouth College, Hanover, New Hampshire

1965 A.B., Geology, Dartmouth College, Hanover, New Hampshire

Registrations and Certifications

Professional Geologist, California

Experience

Dr. Linkletter is a Principal at ENVIRON International Corporation. He has over 35 years of experience in the fields of geochemistry and environmental, mathematical, engineering, and seismic geology. Since the early 1970s, when he developed one of the first academic programs in environmental geology in the United States, Dr. Linkletter has managed and participated in a wide range of projects dealing with industrial chemicals and wastes in the geologic and hydrologic environments. Many of these assignments were large interdisciplinary projects, including several projects designed to evaluate potential geoenvironmental-project interactions for facilities planned by the petroleum, utility, and hazardous waste management industries. These projects ranged from siting and designing waste management facilities to the characterization and remediation of environmental impairment at waste management facilities and industrial properties.

Dr. Linkletter managed and participated in the investigation and remediation of a number of USEPA and State of California Superfund sites. These assignments have included site investigations, remedial design and implementation, PRP allocation issues, and regulatory negotiation. Contaminants of concern at these sites have included chlorinated solvents, PCBs, heavy metals, asbestos, and petroleum hydrocarbons.

Throughout a broad spectrum of his work in the geological and engineering s geostatistics, sciences, Dr. Linkletter has had a strong focus on risk management, using applied mathematics, geostatistics, and decision analysis to quantify and manage uncertainty, thereby facilitating business decision making for his clients. For over a decade, Dr. Linkletter has served as a senior advisor and management consultant to major financial institutions and manufacturing firms, participating in the development and upgrading of corporate-wide environmental health and safety programs, guiding staffing decisions for corporate and divisional environmental programs, and establishing protocols for environmental due diligence.

Dr. Linkletter has an active litigation support/expert witness practice. Recent issues that have been the subject of his evaluation and testimony include the origin and timing of soil and ground water contamination, the standard of practice for environmental due diligence and related environmental tasks, compliance with the National Contingency Plan, and allocation of costs and responsibility

Dr. Linkletter has also participated in and directed scientific research projects and applied investigations in many parts of North America, South America, Europe, Africa, and both polar regions. Much of his work has included the development and use of computer models and

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geochemical techniques to study complex natural systems. He has applied the results of these studies to a variety of programs ranging from investigations for the siting and design of lifelines and critical facilities to large weather-modification projects. Dr. Linkletter received the U.S. Antarctic Service Medal for his research in geology, glaciology, and polar meteorology, and has been an invited speaker at universities throughout the United States, Europe, and South America. Dr. Linkletter formerly was a Vice President with Woodward Clyde Consultants, and a Managing Principal with Harding Lawson Associates in southern California.

Representative Projects

- Aswan High Dam, Egypt Project manager for comprehensive engineering evaluation of seismic stability of the High Dam. Assessment included seismic and engineering geology, hydrogeology, seismology, and earthquake and geotechnical engineering. Client: Government of Egypt/U.S. Agency for International Development.
- Litigation support, Wilmington, North Carolina Provided litigation support, including expert witness deposition testimony, related to the timing and origin of chlorinated solvent contamination in ground water beneath a former refrigeration coil manufacturing facility. Client: O'Melveny & Myers.
- Site investigation, regulatory negotiation, Carson, California Performed an evaluation of the origin of chlorinated solvents in fill soils, native soils, and ground water beneath a multi-tenant light industrial complex that had formerly been used for metal fabrication and oil field production. Assisted the land owner in obtaining a no further action letter in spite of the presence of chlorinated solvents in the ground water beneath the property. Client: Jones, Day, Reavis & Pogue.
- Air and hazardous materials permitting, Irvine, California Assisted the owner of a newly acquired property to obtain the air and other hazardous materials storage and handling permits required to open a specialty chemical formulation facility. Client: Alpha Metals.
- Litigation support, San Luis Obispo, California Provided litigation support, including deposition and trial testimony, related to the standard of practice for environmental due diligence and site investigation related to the acquisition of a former railroad property for residential use. Client: Beveridge & Diamond.
- Site investigation and remediation, Arrowbear, California Conducted a site investigation and remedial design and implementation at a former gasoline station acquired by a bank through foreclosure. Issues included the presence of petroleum and aromatic hydrocarbons in ground water in fractured bedrock, and the release of contaminants from the ground water into nearby surface waters. Assisted the bank to obtain reimbursement through the California Underground Tank Fund. Client: Aldrich & Bonnefin
- Site investigation, risk assessment, regulatory negotiations, San Diego, California Assisted attorneys for a property owner in obtaining regulatory closure on a former agricultural property from which an underground tank had been removed in an undocumented process and on which elevated concentrations of chlorinated pesticides had been found. The closure of unused water supply wells was also an issue. Client O'Melveny & Myers.

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- Site investigation, regulatory negotiations, City of Industry, California Assisted attorneys to the owner/operator of a carpet manufacturing facility targeted for inclusion as a PRP in the San Gabriel Valley Superfund program in obtaining a no further action letter from the RWQCB, and thus avoid the Superfund PRP designation. Client: Kirkland & Ellis.
- Ground water investigation and remediation, Colorado Project manager for multiphased evaluation, characterization, and remediation of volatile organic chemicals in two ground water plumes at a major electronics manufacturing facility. Statistical sampling design was used to limit the scope and costs of the investigation while achieving the required level of confidence in results. Client: Hewlett-Packard Company.
- Environmental due diligence for industrial acquisition Managed the evaluation of world-wide environmental liabilities for a consortium of banks involved in the financing of Loral's purchase of Ford Aerospace. Client: Simpson Thacher & Bartlett.
- Ground water investigation and remediation, Palo Alto, California Project Director for a large program that included the characterization and remediation of soil and ground water contamination by heavy metals and industrial solvents at two electronics manufacturing facilities and an area-wide Superfund site in Palo Alto. Client: Hewlett-Packard Company and Varian Associates.
- Site characterization and remediation, City of Commerce, California Directed the comprehensive investigation of site use history and soil and ground water contamination and the remediation of soil and ground water contamination by chlorinated solvents and petroleum hydrocarbons at a former industrial manufacturing facility. Client: Jones, Day Reavis & Pogue.
- Emergency response 106 Order removal action, Los Angeles, California Managed the planning and implementation of an emergency response removal action associated with a USEPA 106 Order issued to the owners and former operators of a metal plating facility. Issues included the presence of large volumes of highly concentrated chromic acid in deteriorating aboveground tanks, uncontrolled access to laboratory chemicals, contaminated plating vats and air handling systems, and the management of over 100,000 gallons of contaminated stormwater runoff. Client: McDermott, Will & Emery
- Litigation support, Anaheim, California Provided litigation support, including expert testimony in deposition and at trial, related to the standard of practice for environmental due diligence and the origin of chlorinated solvents in soil and ground water at a former aircraft component manufacturing facility. Client: Kirkland & Ellis.
- Litigation support, Santa Clara County, California Provided litigation support, including preparation of a declaration and an expert report related to historical mining, ore production and processing, and mining waste handling at the New Almaden mercury mine. Client: Beveridge & Diamond.
- Environmental due diligence, Huntington Beach, California Conducted an environmental due diligence assessment for a sporting goods retailer that was acquiring neighboring properties to expand an existing retail facility. Provided oversight of the remediation of a former gasoline service station by the oil company that previously operated the station. Conducted Phase II investigations related to underground tanks and

hydraulic hoists at a former recreational vehicle sale and service facility at the property. Client: Sports Chalet/Trammell Crow.

- Litigation support, Sunnyvale, California Provided litigation support and deposition testimony related to the origin of chlorinated solvents present in ground water beneath a office park located downgradient of several former semiconductor manufacturing facilities and service stations. Client: Quarles & Brady.
- Litigation support, El Cajon, California Provided broad-based litigation support to the law firm defending an insurance carrier in a matter related to a claim of environmental damages. Issues included the timing and nature of a release of petroleum hydrocarbons from a former underground tank, the distribution of soil and ground water contamination, and remedial strategies and costs. Client: Morrison & Foerster.
- Environmental due diligence, Burbank, California Assisted a major retailer in the evaluation of environmental issues related to the prospective purchase of a nearly 100 acre former aircraft manufacturing. Plans for the property called for comprehensive redevelopment into a regional-scale shopping center. Client: Wal-Mart.
- Litigation support, Sunnyvale, California Provided a detailed critique of the technical approach to and costs of investigation and remedial work at a former semiconductor facility on behalf of a former owner/operator in a private CERCLA recovery action. Also assisted in the preparation for and participated in depositions of the technical experts designated by the adverse parties. Client: Pettit & Martin
- Environmental due diligence, nationwide Assisted a major nationwide realty management company in developing its pre-acquisition environmental due diligence protocols and a program for annual post-acquisition evaluation of properties in the company's portfolio. ENVIRON conducts this program for the client and provides oversight of tenant response to recommended or mandated changes in their environmental management practices. Client: Confidential.
- Litigation support, Tampa, Florida Provided comprehensive technical and regulatory litigation support and expert witness testimony for attorneys defending the former owner of a metal scrap yard from claims by the new owner for costs related to environmental investigations and remediation. The primary issues related to the requirements for, approach to, and costs for the investigation and remediation of soils contaminated with heavy metals, PCBs, and petroleum hydrocarbons. Client: Trenam, Simmons, Kemker, Scharf, Barkin, Frye & O'Neill.
- Litigation support, Tampa, Florida Provided comprehensive technical and regulatory litigation support and expert witness testimony for attorneys defending the Hillsborough County, Florida in a suit that alleged that the County's mosquito abatement district had contaminated soils on portions of an island in Tampa Bay that was subsequently redeveloped into condominiums. The principal contaminants at issue were pesticides, PCBs, and petroleum hydrocarbons. Client: Trenam, Simmons, Kemker, Scharf, Barkin, Frye & O'Neill.
- Litigation support, Los Angeles, California Provided litigation support to attorneys for a family trust from which land was taken by a school district in an eminent domain action. The primary dispute related to the school district's proposed reduction in the fair market

value of the property due to costs associated with the investigation and remediation of soil contamination from underground gasoline tanks. A favorable settlement was achieved when ENVIRON successfully demonstrated that much of the work undertaken by the district's consultant was unnecessary. Client: Richards, Watson & Greaten.

- Site investigation, Costa Mesa, California Assisted the owner of a property used to manufacture munitions in dealing with the tenant responsible for ground water contamination with industrial solvents. Designed and conducted ground water investigations sufficient to demonstrate that the current tenant was likely responsible for the ground water contamination. Thereafter, on behalf of the landowner, provided oversight of the site investigation and remediation work conducted by the tenant's consultant. Also provided briefings for financial institutions considering involvement at the site. Client: Confidential.
- Site investigation, regulatory support, Houston, Texas Assisted the owner/operator of a plastics fabrication facility to respond to a regulatory citation for the release of petroleum hydrocarbons to a surface drainageway. Conducted a soil sampling and analytical program that demonstrated that the observed impact was related to heavy, relatively immobile hydrocarbons only and that the impact was restricted to surficial soils, thereby eliminating the need for regulatory mandated remediation. Client: NAMPAC
- Site investigation, Superfund, litigation support, Burbank and Glendale, California Assisted the owner of a long-term industrial site in the San Fernando Valley with the investigation of soil and ground water conditions at and near the site, and with the planning and design of interim and final remedial measures. Assisted with regulatory negotiations, Superfund (PRP) allocation issues, and insurance coverage claims. Client: Confidential.
- Site investigation, Universal City, California Assisted MCA Development, the land owner for a facility used by Technicolor (tenant) to process movie film, by providing oversight and regulatory guidance related to Technicolor's removal of underground tanks and the investigation/remediation of contaminated soil and ground water at the property. Client: Seagrams.
- Waste minimization, San Pedro, California Assisted the operator of a petrochemical storage facility in the Port of Los Angeles to evaluate and report its waste management practices in order to comply with government imposed waste minimization requirements. Client: GATX.
- Regulatory guidance, Carson, California Provided advice and written testimony to attorneys representing the owner of properties near the Cal Compact landfill, for which an integrated remediation/redevelopment scheme was being considered by the California DTSC. Concerns related to the sufficiency of the site investigation/characterization on which the remedial plans were based, and plans to create vertically stratified Operable Units. Client: Kelley, Drye & Warren.
- Environmental due diligence, site investigations, and site remediation at various locations in the western United States Worked with attorneys to Home Depot to provide technical assessments and regulatory guidance related to the acquisition of new properties to be redeveloped into Home Depot stores. Client: Latham & Watkins.