



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Secretary for
Environmental Protection

320 West Fourth Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 ♦ FAX (213) 576-6640 ♦ Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

August 31, 2009

Mr. Andrew Gross
Thomas Safran and Associates
11812 San Vicente Boulevard, Suite 600
Los Angeles, CA 90049-6986

GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES — FORMER ECONO LUBE AND TUNE, 708 EAST CARSON STREET, CARSON (UST FILE NO. R-04918) (ORDER NO. R4-2007-0019; CI NO. 9537)

Dear Mr. Gross:

We have completed our review of your application for coverage under the General Waste Discharge Requirements to inject sodium persulfate oxidant at the site referenced above for soil and/or groundwater cleanup.

Multiple phases of assessment have been conducted at the site since 2005, which included the placement of soil vapor probes, soil borings, and groundwater monitoring wells on the property. Results of the site assessment activities indicated that the maximum concentrations of 9,800 mg/kg TPHg within a depth of 15-20 feet below ground surface (bgs), 31,000 mg/kg TPHg within a depth of 22-25 feet bgs, and 9,000 mg/kg TPHg within a depth of 22-30 and 35-50 feet bgs have been detected. The latest groundwater monitoring results dated February 5, 2009, indicated that the maximum concentrations of 59,000 µg/L TPHg, 17,000 µg/L benzene, 2,000 µg/L toluene, 3,100 µg/L ethylbenzene, 4,200 µg/L xylenes, 2.4 µg/L PCE, and 1.7 µg/L TCE have been detected in the groundwater samples.

In a remedial action plan (RAP) dated August 2009, your consultant, California Environmental (CE) proposed to apply an oxidizing agent, sodium persulfate (KlozurTM), to treat the residual fuel constituents in the sandy zones beneath the subject site. Three treatment zones are specified. Zone I is located in the eastern portion of the area of remedial excavation conducted in June 2009. A total of seven injection points are proposed within this treatment zone. The targeted zone contains sand stringers 10-20 feet bgs. Zone II extends west from zone I to the western property line. Ten injection points are proposed for this treatment zone. The targeted depth interval is a sandy horizon at a depth of 22-25 feet bgs. Zone III is located adjacent to the southwest of Zone II. Four injection points are proposed for this treatment zone. The targeted depth intervals within this zone are 22-30 and 35-50 feet bgs. In a directive dated August 28, 2009, Regional Board staff approved the RAP.

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101

Regional Board staff has determined that the proposed discharge meets the conditions specified in Order No. R4-2007-0019, "*Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites (General WDRs)*," adopted by the Los Angeles Regional Water quality Control Board on March 1, 2007.

Enclosed are your Waste Discharge Requirements, consisting of General WDRs Board Order No. 2007-0019 and Monitoring and Reporting Program No. CI-9537 and Standard Provisions. This Waste Discharge Requirements shall not be terminated without the regulatory oversight agency's prior approval.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9537, which will assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

To avoid paying future annual fees, please submit written request for termination of your enrollment under the general permit in a separate letter when your project has been completed and the permit is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1 and ending June 30, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year beginning July 1.

We are sending a copy of Order No. R4-2007-0019 only to the applicant. A copy of the Order will be furnished to anyone who requests it, or on line at:
http://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/r4-2007-0019/r4-2007-0019.pdf

If you have any questions, please contact Dr. Rebecca Chou at (213) 620-6156 for WDRs administration matters, or Dr. Yi Lu (213) 576-6695 for technical matters.

Sincerely,


Tracy J. Egoscue
Executive Officer

Enclosures:

1. Board Order No. R4-2007-0019
2. Standard Provisions for Reporting and Monitoring
3. Monitoring and Reporting Program No. CI-9537

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cc:

Yvonne Shanks, State Water Resources Control Board, UST Cleanup Fund
Nancy Matsumoto, Water Replenishment District of Southern California
Tim Smith, County of Los Angeles, Department of Public Works
Charles Buckley, California Environmental

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STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-9537

FOR
FORMER ECONO LUBE AND TUNE FACILITY
708 EAST CARSON STREET, CARSON

(SODIUM PERSULFATE INJECTION FOR SOIL AND GROUNDWATER CLEANUP)
(ORDER NO. R4-2007-0019, SERIES NO. 101)

I. REPORTING REQUIREMENTS

- A. Thomas Safran and Associates (hereinafter Discharger) shall implement this monitoring program on the effective date of Regional Board Order No. R4-2007-0019. The first monitoring report under this program, for July to December 2009, shall be received at the Regional Board by January 15, 2010. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – June	July 15
July – December	January 15

If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.

- B. By March 1st of each year, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall explain the compliance record and the corrective actions taken, or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements (WDRs).
- C. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.
- D. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can

demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.

- E. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- F. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services, and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- G. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.
- H. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- I. If the Discharger performs analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- J. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.
- K. The Discharger should not implement any changes to the Monitoring and Reporting Program prior to receiving Executive Officer's written approval.

II. ACTIVATED PERSULFATE INJECTION MONITORING REQUIREMENTS

The Semi-Annually reports shall contain the following information regarding the proposed injection activities:

1. Location map showing injection points dedicated for the sodium persulfate injection. The Discharger plans to inject approximately 5,000 pounds of 15 percent solution into the treatment zones. The treatment zones vary in thickness from 5 to 17 feet. The areal extent of the treatment zone is about 3,300 square feet.
2. Written and tabular summary defining the quantity of sodium persulfate injected per month to the groundwater and a summary describing the days on which the injection system was in operation.

III. GROUNDWATER MONITORING PROGRAM

In a remedial action plan (RAP) dated August 2009, prepared by Discharger's consultant, California Environmental (CE), CE proposed to re-install the five monitoring wells (RMW-1 through RMW-5) that were abandoned during the remedial excavation conducted at the Site in June 2009. These wells will be installed close to the proximity of their prior locations (Figure 3), and will be used in conjunction with the existing well (MW-6) to form the groundwater monitoring network. According to a groundwater flow map (Figure 7) constructed in November 2008, replacement well RMW-1 (replacing MW-1) is selected as the up-gradient well, RMW-2 as the source well, and wells RMW-3 and RMW-4 as the down-gradient wells.

In a directive dated August 28, 2009, Regional Board staff approved the RAP.

The Discharger shall conduct groundwater monitoring at the site. Groundwater samples shall be collected from up-gradient well RMW-1, source wells RMW-2 and MW-6, and down-gradient monitoring wells RMW-4 and RMW-3 on a semi-annually basis to monitor the effectiveness of the in-situ groundwater remediation.

To avoid groundwater monitoring network reduction, data bias, and well screen clogging or alteration, no groundwater monitoring wells shall be used as injection points for in-situ chemical oxidation.

Groundwater shall be monitored for the duration of the remediation in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd)	µg/L	Grab	• Semi-Annually ¹
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	• Semi-Annually ¹
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), ether (ETBE)	µg/L	Grab	• Semi-Annually ¹
Ethanol Formaldehyde Acetone	µg/L	Grab	• Semi-Annually ¹
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L	Grab	• Semi-Annually ¹
Oxidation-reduction potential	millivolts		• Semi-Annually ¹
Dissolved Oxygen	µg/L	Grab	• Semi-Annually ¹
Dissolved ferrous iron	µg/L	Grab	• Semi-Annually ¹
Total Chromium and chromium six ²	µg/L	Grab	• Semi-Annually ¹
PH	pH units	Grab	• Semi-Annually ¹
Temperature	⁰ F/ ⁰ C	Grab	• Semi-Annually ¹
Groundwater Elevation	Feet, mean sea level and below ground surface	In situ	• Semi-Annually ¹

¹ One week before injection and Semi-Annually thereafter

² The Discharger is required to monitor for total chromium and chromium six in the baseline, second and fourth Semi-Annually sampling. If detected at any of these sampling events, the total chromium and chromium six must be monitored Semi-Annually thereafter.

All groundwater monitoring reports must include, at a minimum, the following:

- a. Well identification, date and time of sampling;
- b. Sampler identification, and laboratory identification;
- c. Semi-Annually observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

IV. MONITORING FREQUENCIES

Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the _____ day of _____ at _____.

(Signature)

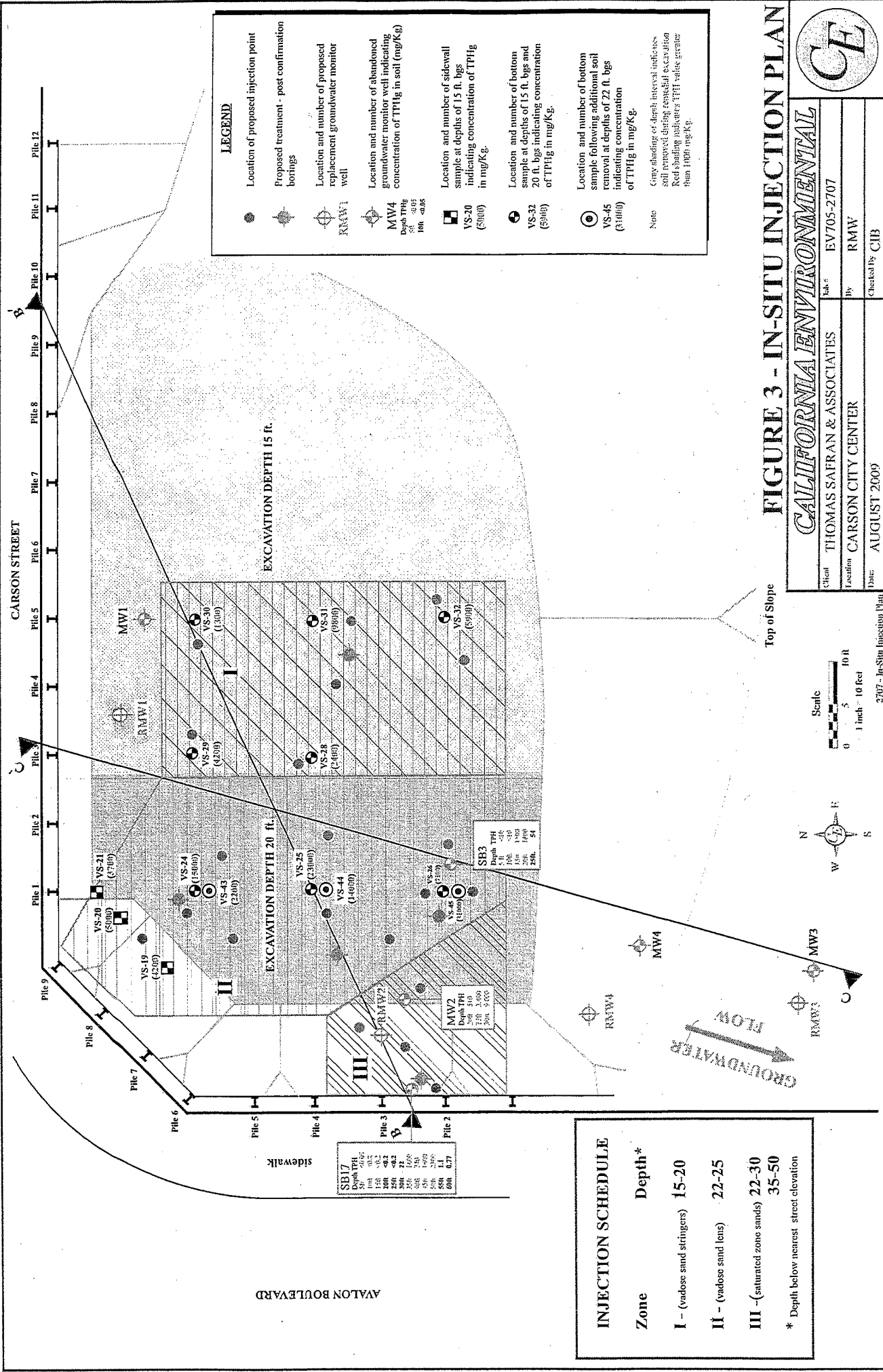
(Title)"

VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by: Samuel Unger
Tracy J. Egoscue
Executive Officer

Date: August 31, 2009



LEGEND

- Location of proposed injection point
- ⊕ Proposed treatment - post confirmation borings
- ⊕ RMWA
- ⊕ MWA
- ⊕ MWA
- ⊕ VS-20 (5900)
- ⊕ VS-32 (5900)
- ⊕ VS-45 (3100)

Note: Gray shading of depth interval indicates soil proposed being excavated. Red shading indicates TPH value greater than 100 mg/kg.

SB17	Depth TPH
15-20	0.2
20-25	0.2
22-30	0.2
30-35	0.2
35-50	0.2
50-60	0.2
60-70	0.2
70-80	0.2
80-90	0.2
90-100	0.2
100-110	0.2
110-120	0.2
120-130	0.2
130-140	0.2
140-150	0.2
150-160	0.2
160-170	0.2
170-180	0.2
180-190	0.2
190-200	0.2
200-210	0.2
210-220	0.2
220-230	0.2
230-240	0.2
240-250	0.2
250-260	0.2
260-270	0.2
270-280	0.2
280-290	0.2
290-300	0.2
300-310	0.2
310-320	0.2
320-330	0.2
330-340	0.2
340-350	0.2
350-360	0.2
360-370	0.2
370-380	0.2
380-390	0.2
390-400	0.2
400-410	0.2
410-420	0.2
420-430	0.2
430-440	0.2
440-450	0.2
450-460	0.2
460-470	0.2
470-480	0.2
480-490	0.2
490-500	0.2
500-510	0.2
510-520	0.2
520-530	0.2
530-540	0.2
540-550	0.2
550-560	0.2
560-570	0.2
570-580	0.2
580-590	0.2
590-600	0.2

INJECTION SCHEDULE	Depth*
I - (vadose sand stringers)	15-20
II - (vadose sand lens)	22-25
III - (saturated zone sands)	22-30
	35-50

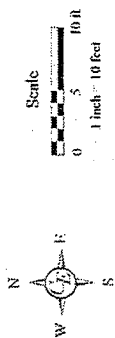
* Depth below nearest street elevation

FIGURE 3 - IN-SITU INJECTION PLAN

CALIFORNIA ENVIRONMENTAL

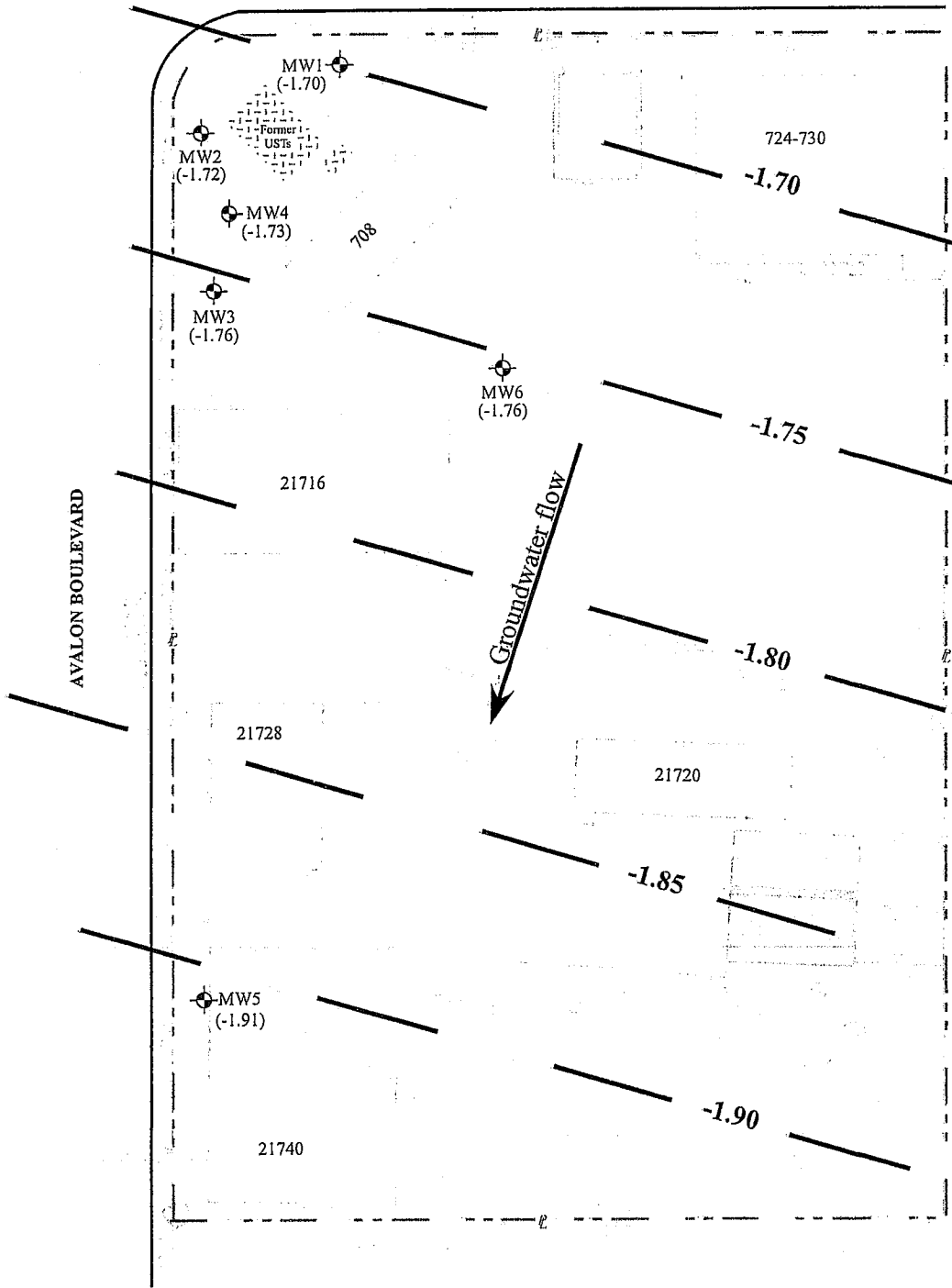
Client: THOMAS SAFRAN & ASSOCIATES
 Location: CARSON CITY CENTER
 Date: AUGUST 2009

Sub #: EV705-2707
 By: RMW
 Checked by: CIB





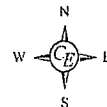
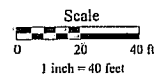
2307 - In-Situ Injection Plan

CARSON STREET



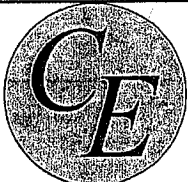
LEGEND

-  Location and number of Groundwater Monitor Well showing groundwater elevation in feet above mean sea level
-  Groundwater elevation contour



REFERENCE: Survey by JSA Engineers, August 2005

FIGURE 7
GROUNDWATER CONTOUR MAP
 708 East Carson Street
 Carson, California



Drawn By: RMW
 Checked By: CIB

Job # EV705-2707
 Date: NOVEMBER 2008

California Environmental

2707 Groundwater Contour Map