

C A M B R I A

ENVIRONMENTAL
PROTECTION August 4, 1999

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Ms. Eva Chu
Alameda County
Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

4/18/00
Verbal approval to
implement this
8/20/99

Re: **Hydrogen Peroxide Injection Workplan**
Former Chevron Service Station 9-7127
Grant Line Road at Interstate 580
Tracy, California



Dear Ms. Chu:

As requested by Chevron Products Company (Chevron), Cambria Environmental Technology, Inc. (Cambria) is pleased to submit this work plan for hydrogen peroxide injection into groundwater monitoring wells MW-1 and MW-3 for the above referenced site (Figure 1). The objective of the proposed work is to reduce the concentration of hydrocarbon in groundwater at the site. The site background and Cambria's proposed scope of work for the hydrogen peroxide injection is presented below.

SITE BACKGROUND

The site is an former Chevron service station located in a primarily commercial and industrial area at Grant Line Road and Interstate 580 in Tracy, California. To date, eight groundwater monitoring wells have been installed on and offsite.

Site Setting, Geology, and Hydrology: The site is essentially flat, approximately 300 feet above mean sea level, and is located about 50 miles east of San Francisco Bay. Site lithology primarily consists of low to moderate estimated permeability clayey sands and sandstone. Groundwater is encountered about 15 feet below grade and flows to the north/northeast at a gradient of 0.006.

PROPOSED SCOPE OF WORK

To reduce hydrocarbon concentrations in soil and groundwater where the highest concentrations have been found, Cambria will inject hydrogen peroxide into groundwater monitoring wells MW-1 and MW-3. Cambria proposes to perform the task describe below.

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

**Cambria
Environmental
Technology, Inc.**


1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

925/275-3200
San Ramon

925/973-3121 Scott McLeod

Site Safety Plan: Cambria will prepare a site safety plan to protect site workers. The plan will be kept on site at all times and signed by all site workers.

Permits: No permits will be needed for the hydrogen peroxide injection.



Hydrogen Peroxide Injection: Cambria will inject hydrogen peroxide into groundwater monitoring wells MW-1 and MW-3. The method of injection and the quantity and concentration of hydrogen peroxide injected will be determined in the field. Prior to any injections, each well will be checked for separate phase hydrocarbon. A five gallon injection of three percent hydrogen peroxide will initially be injected into each well. Visual effects of oxidation will be monitored, as will the temperature. If subjective evaluations and the temperature change are minor, then additional hydrogen peroxide at greater concentration will be injected. Conceptually, a five gallon injection of ten percent hydrogen peroxide will be used next. Again, the visual effects of oxidation and temperature change will be monitored. If warranted, 15 to 20 percent hydrogen peroxide will be injected into each well. Upon completion of the injection process, each well will be monitored for temperature changes for at least one hour. Up to 30 gallons of 30 percent hydrogen peroxide will be used during the injection process.

Water Disposal: No waste water will be generated during the hydrogen peroxide injection.

Reporting: After the field work has been completed, a letter of work performed will be sent to Chevron and the Alameda County Health Care Services. The reporting document will include at a minimum:

- A summary of the site background,
- Description of the hydrogen peroxide injection methods,
- A discussion of the quantity and concentrations of hydrogen peroxide injected, and
- A site map showing the injection/monitoring well locations.

SCHEDULE

Cambria will perform this work after receiving work plan approval. We anticipate that the injection process will occur during the week of August 23, 1999. We will submit letter report documenting the work performed after finishing the field work.

Ms. Eva Chu
August 4, 1999

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CLOSING

We look forward to working with you on this project. Please call us at (510) 420-0700 if you have any questions or comments.

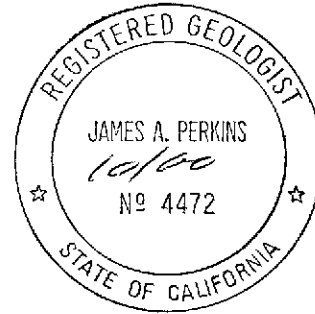
Sincerely,
Cambria Environmental Technology, Inc.



Walter Cuculic
Engineer

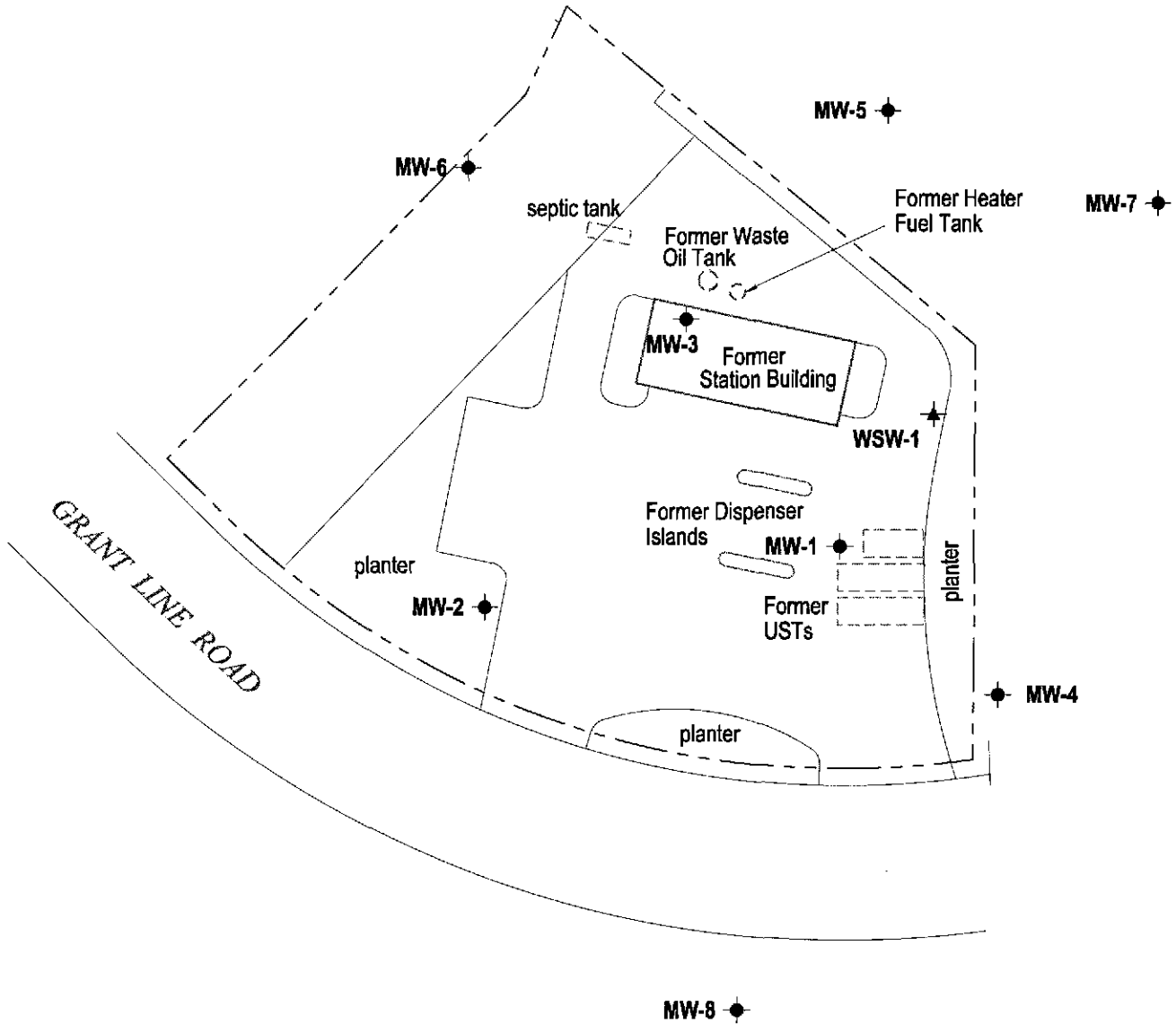


James A. Perkins, R.G. *X122*
Principal Remediation Manager



cc: Mr. Phil Briggs, Chevron Products Company

I:\9-7127 Tracy\wkpln.wpd



EXPLANATION

- MW-1 ● Monitoring well location
- WSW-1 ★ Water Supply Well (Livestock)

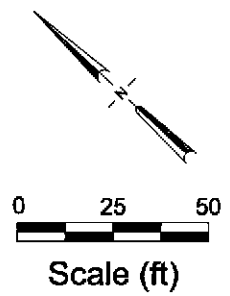


FIGURE
1

Former Chevron Service Station No. 9-7127
 Grant Line Road at Interstate 580
 Tracy, California



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Site Map

I:\9-7127\FIGURES\SITEPLAN.DWG