CAMBRIA

February 26, 1999

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

99 MAR 10 PM 2:13
ENVIRONMENTAL PROTECTION

Re: **Monitoring Well Abandonment Report**
Shell-branded Service Station
1601 Webster Street
Alameda, California
WIC# 204-0072-0403
Cambria Project# 240-0467

Dear Ms. Chu:

On behalf of Equilon Enterprises LLC (Equilon), Cambria Environmental Technology, Inc. (Cambria) is submitting this well abandonment report for the site referenced above. As requested in the November 3, 1998 letter from the Alameda County Health Care Services Agency (ACHCSA) to Mr. Alex Perez, four on site monitoring wells were abandoned to facilitate regulatory case closure. Presented below are site characteristics and a summary of well abandonment activities recently conducted at the site.

SITE CHARACTERISTICS

Site Location: The site is located at the northwest corner of Webster Street and Lincoln Avenue in Alameda, California in a mixed commercial and residential area (Figure 1). The site is located approximately ½ mile from the San Francisco Bay.

Hydrogeology: Boring logs from previous site investigations indicate that the site is underlain by high estimated permeability silty sands to 21.5 feet below ground surface (ft bgs).

Ground Water Depth: The depth to ground water ranged from approximately 7.2 ft bgs in well MW-2 to 9.3 ft bgs in well MW-3 when gauged just prior to abandoning the wells.

Ground Water Flow Direction: Ground water generally flows easterly to southeasterly.

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

WELL ABANDONMENT ACTIVITIES

Abandonment Date: January 15, 1999.

Permitting: Cambria obtained an Alameda Public Works Agency (ACPWA) permit to abandon the monitoring wells (Attachment A).

Personnel Present: Cambria engineer Michael Paves supervised the well abandonment.

Abandonment Technique: Per Cambria's request, Alvin Kan of the ACDPW allowed wells MW-1, MW-2, MW-3, and S-1 to be abandoned by drilling out the top two feet of the well casing and pressure grouting with neat Portland I/II cement. Each of the well vaults were subsequently removed and backfilled to grade with neat Portland I/II cement. Cambria's standard field procedures for well abandonments are included in Attachment B. Copies of the completed DWR forms documenting well abandonments are included in Appendix C.

Drilling Company: Gregg Drilling of Martinez, California. C-57 # 485165.

CLOSING

We appreciate the opportunity to work with you on this project. Please call Darryk Ataide at (510) 420-3339 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc

Michael Paves
Project Engineer

Diane M. Lundquist, P.E.
Principal Engineer

Attachments: A - Well Abandonment Permit
B - Standard Field Procedures
C – DWR Forms

cc: Karen Petryna, Equiva Services LLC, P.O. Box 6249, Carson, California 90749
Alvin Kan, ACPWA, 951 Turner Court, Hayward, California, 94545

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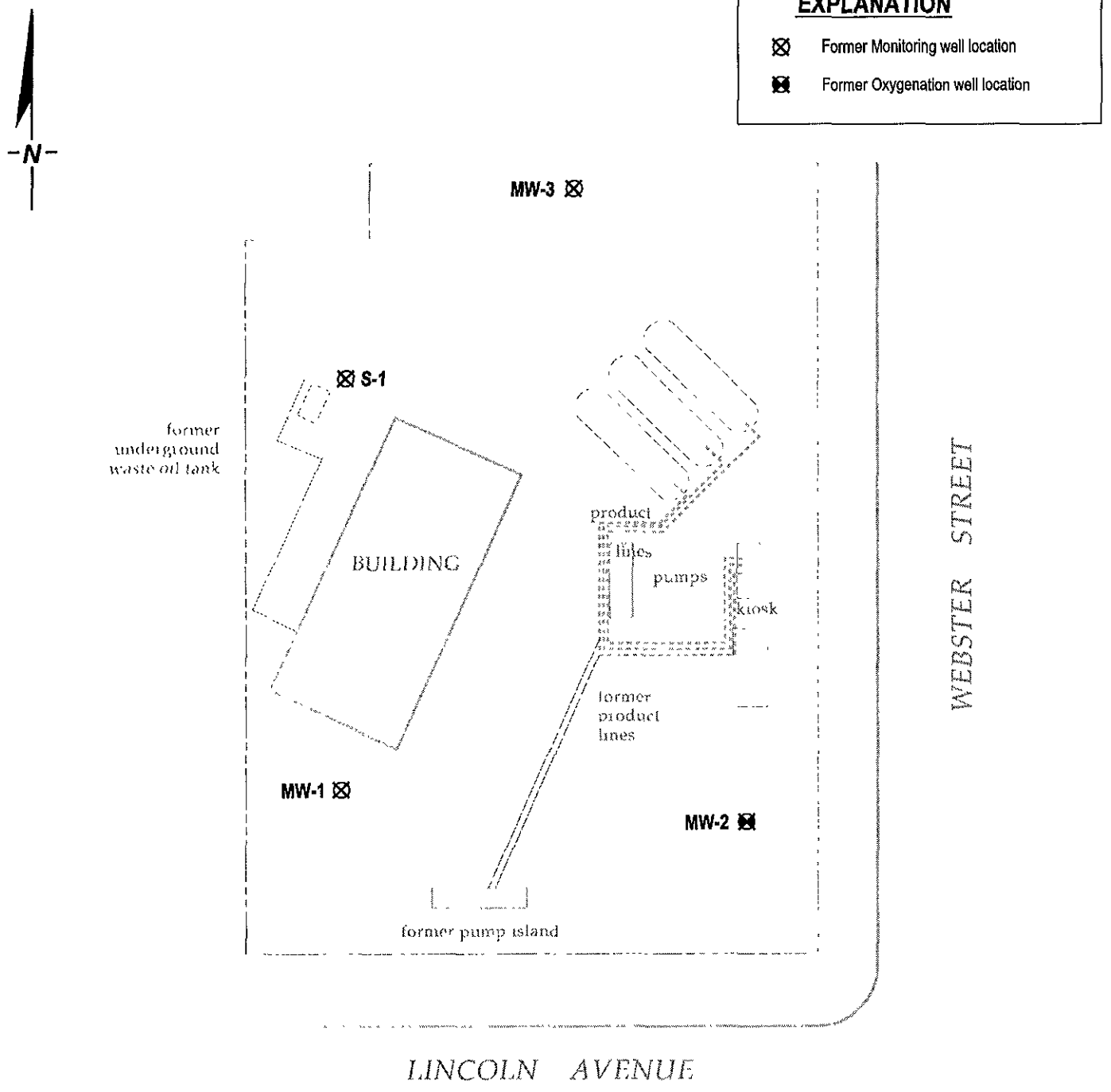

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FIGURE
1

Shell-branded Service Station
1601 Webster Street
Alameda, California
WIC #204-0072-0403

CAMBRIA

Monitoring Well Abandonment

January 15, 1999

ATTACHMENT A

Well Abandonment Permit

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1601 Webster Street
Alameda, CA

California Coordinates Source ______ ft. Accuracy ± ____ ft.
CCN ______ ft. CCE ______ ft.
APN 74-430-5-1

CLIENT
Name EQUIVA SERVICES LLC
Address P.O. Box 6249 Phone (559) 645-9306
City CARSON, CA Zip 90749-6249

APPLICANT
Name MICHAEL PAVES
~~AMBRIA~~ ENVIRONMENTAL TECH. Fax (510) 420-9170
Address 1144 65th St., Ste. B Phone (510) 420-3332
City Oakland, CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction	☒

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ______	☐

DRILLING METHOD:
Mud Rotary ☐ Air Rotary ☐ Auger ☐
Cable ☐ Other ☒ Pressure Grout

DRILLER'S LICENSE NO. C57 485165

WELL PROJECTS
Drill Hole Diameter ______ in. Maximum
Casing Diameter ______ in. Depth 20 ft.
Surface Seal Depth ______ ft. Number 4

GEOTECHNICAL PROJECTS
Number of Borings ______ Maximum
Hole Diameter ______ in. Depth ______ ft.

ESTIMATED STARTING DATE 12/30/98
ESTIMATED COMPLETION DATE 12/30/98

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 12/22/98

FOR OFFICE USE

PERMIT NUMBER 98WR540
WELL NUMBER ______
APN ______

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED [signature] DATE 12/22/98

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
For Pressure Grouting of Monitoring Well

1601 WEBSTER ST

ALAMEDA

PERMIT No. 98WR540

Destruction Requirements:

1. Clean out all bridged or poorly compacted materials to the bottom of the well.
2. Pressure grout the casing to 2 feet below finished grade or original ground, whichever is the lower elevation.
3. Remove casing, seal and gravel pack to 2 feet below finished grade or original ground, whichever is the lower elevation.
4. After the seal has set, backfill the remaining hole with compacted material.

ATTACHMENT B

Standard Field Procedures

STANDARD FIELD PROCEDURES FOR ABANDONING MONITORING WELLS

This document presents standard field methods for abandoning ground water monitoring wells. The objective of well abandonment is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 lb. sack of Portland I/II Cement. Once the well casing is full of grout, it remains pressurized by applying pressure with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

When well drill out is required, a hollow-stem auger drilling rig is used to drill out the well casing and pack materials. First, drill rods are dropped down the well and used to guide the augers as they drill out the well. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

ATTACHMENT C

DWR Forms

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

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