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 Pleasanton, CA 94566
 (510) 462-4000
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September 13, 1995

BSK Job No. 04400028

Dougherty Regional Fire Authority
 9399 Fircrest Lane
 San Ramon, CA 94583

Attention: Mr. Karl D. Diekman
 Fire Chief

Subject: **Report**
 Groundwater Monitoring Wells Closure
 Dougherty Regional Fire Authority - Station No. 1
 7494 Donohue Drive
 Dublin, California

As requested and authorized, BSK & Associates has prepared this report describing the closure of three shallow groundwater monitoring wells, MW-1 through MW-3, at the Dougherty Regional Fire Authority (DRFA) Fire Station No. 1, at 7494 Donohue Drive in Dublin, California (Site). The wells were closed in general accordance with the BSK Proposal No. 04400028, dated July 6, 1995. The wells were closed to comply with the requirements stated in a letter issued by Alameda County Department of Environmental Health (ACDEH), dated August 30, 1995 (attached), to DRFA.

INTRODUCTION

General

This report has been prepared to document the closure of three shallow groundwater monitoring wells installed at the Site in October 1993. The Site Location is shown on Figure 1, Vicinity Map. A Site layout, together with locations of groundwater monitoring wells, is shown on Figure 2, Site Plan.

Background

Three underground storage tanks (UST) containing gasoline and diesel were in use at the Site in the 1960's. The tank group was located behind the former truck garage, in the northwestern portion of the Site. The largest tank was 4000 gallons in capacity and was used to store gasoline. The two smaller tanks were each 550 gallons in capacity; one tank stored Diesel and the other stored Gasoline.

At the time of tank removal in 1989, soil in close proximity to the tanks was observed to be contaminated with petroleum products. The contaminated soil was removed, aerated on-site under a permit from the Bay Area Air Quality Management District, and returned to the excavation with the approval of the Alameda County Department of Environmental Health (ACDEH).

ENVIRONMENTAL
 PROTECTION
 SEP 19 PM 1:45

As part of the Site preparation for the construction of the new D.R.F.A. Station No. 1, hydrocarbon contaminated soil was removed from the subsurface to the depth of first encountered groundwater. The contaminated soil resulted from leakage of the underground fuel storage tanks at the station.

Specification 5.4 of the Soil Remediation and Groundwater Monitoring Plan prepared by Remediation Services for the contaminated soil removal recommended, as a confirmation of the remedial effort, the installation of three shallow groundwater monitoring wells, and monitoring of those wells to assess the impact of the soil remediation activities at the Site. Three groundwater monitoring wells were installed by BSK in October 1993. ACDEH requested the monitoring wells be monitored quarterly for a period of one year. The three groundwater monitoring wells were monitored by BSK, from the period of October 1993 to October 1994. No concentrations of gasoline or diesel (TPH-d or TPH-g) were detected in groundwater samples collected for four consecutive quarters.

WELL CLOSURE PROCEDURE

The three groundwater monitoring wells (MW-1 through MW-3) were closed on September 5, 1995 by the pressure grouting method. Prior to our field activities a Well Destruction Permit Application was submitted to Alameda County Zone 7 Water Agency. The approved Well Destruction Permit is provided as an attachment to this report.

To abandon the wells, neat cement grout with approximately 6.5 gallons of water per sack of cement was pumped to the bottom of each well by the tremie method to displace the water. The tremie pipe was removed from the well and the pump hose equipped with a pressure gauge was connected to the top of the PVC well casing. Pressure was maintained at a level of 10 psi to 25 psi in the well system to force the grout through PVC (well) slots into the annular sand until the cement infiltration ceased. The wells were "shut-in" by closing a valve on the pump hose and checking the pressure gauge for pressure loss. Following grouting, the well box in the concrete pavement area (MW-3) was topped with ready mix concrete and then the well cover was emplaced in the concrete. Following grouting of the wells in the landscaped areas (MW-1 and MW-2) the well boxes including the well casing and the surface seal (top 18 inches) were removed and the resulting holes were backfilled with compacted soil. Well boxes and debris were removed from the site.

REPORT DISTRIBUTION


A copy of this report should be forwarded to the Alameda County Department of Environmental Health (ACDEH) for their review. An extra copy of the report has been provided for this purpose. The ACDEH may in turn forward a copy of the report to the Regional Water Quality Control Board.

Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502
Attention: Susan L. Hugo

* * *

BSK appreciates this opportunity to continue to be of service to the Dougherty Regional Fire Authority. If there are questions or comments regarding this report, please contact us.

Respectfully submitted,
BSK & Associates



Martin B. Cline, R.G. 6244
Geologist



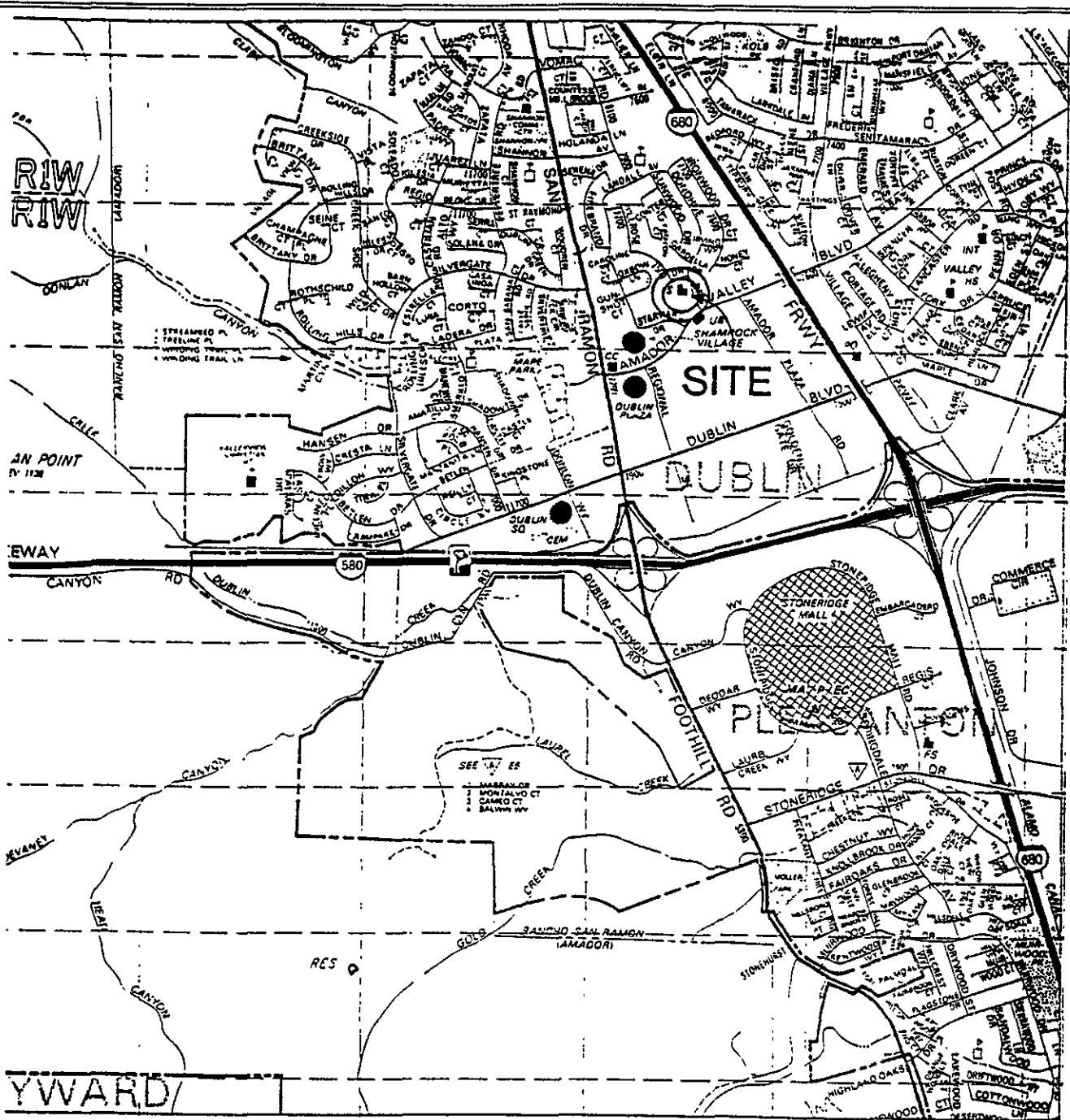
Alex Y. Eskandari, C.E. 38101
Project Manager

AYE\MBC
(Reports\env\10-440028.wel)

Distribution: DRFA (4 copies)

Attachments:

Figure 1, Vicinity Map
Figure 2, Site Plan
Letter dated August 30, 1995 from ACDEH to DRFA
Well Destruction Permit Application (2 pages)



Source: Thomas Guide, 1992, Alameda and Contra Costa Counties

Scale: 1" = 2200'



Groundwater Monitoring Wells Closure
 Dougherty Regional Fire Authority - Station No. 1
 7494 Donohue Drive
 Dublin, California

BSK Job No. 04400028
 VICINITY MAP
 FIGURE: 1

BSK
 & ASSOCIATES

Concrete-lined Channel
N69°06' 49" E. 150.00'

Apartment Complex
Parking

N053' 11" W. 100.00'

Parking Area

MW-3

MW-2

NEW FIRE STATION

DONOHUE DRIVE


N6°54' 44" E. 90.44'

Property Line

N69°06'49" E. 192.18'

MW-1

LEGEND:

 - Location and Designation of
Groundwater Monitoring Well

Scale: 1" = 40'



Groundwater Monitoring Wells Closure
Dougherty Regional Fire Authority - Station No. 1
7494 Donohue Drive
Dublin, California

BSK Job No. 04400028
SITE PLAN
FIGURE: 2

BSK
& ASSOCIATES

August 30, 1995
STID # 4442

Mr. Karl Diekman
Dougherty Regional Fire Authority
9399 Fircrest Lane
San Ramon, California 94583

RE: Case Closure - Dougherty Regional Fire Authority
7494 Donahue Drive, Dublin, California 94568

Dear Mr. Diekman:

The Alameda County Department of Environmental Health, Environmental Protection Division has recently received concurrence from the Regional Water Quality Control Board regarding this office determination that no further action is required concerning the removal of three underground storage tanks (1 -4,000 gallon gasoline, 1 - 500 gallon gasoline and 1 - 500 gallon diesel) at the referenced site.

Please be advised that the three groundwater monitoring wells (MW-1, MW-2 and MW-3) at the site must be properly decommissioned before our agency will issue the Remedial Action Completion Certification (closure letter) for the subject site. A report must be submitted documenting the abandonment of the monitoring wells.

Additionally, you will need to notify this office 72 hours in advance of the well abandonment field activities.

If you have any questions concerning this letter, please contact me at (510) 567- 6780.

Sincerely,

Susan L. Hugo

Susan L. Hugo
Senior Hazardous Materials Specialist

cc: Jun Makishima, Interim Director, Environmental Health
Leroy Todd, Acting Chief, Environmental Protection
Division / files
Kevin Graves, San Francisco Bay RWQCB



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT Fire station No. 1
7494 Donchoe Dr.
Dublin, CA

PERMIT NUMBER 95566
LOCATION NUMBER 3S/1W 2A13 to 2A15

(2) CLIENT
Name Dougherty Reg. Fire Authority
Address 9398 Finkert Ln. Phone 803-8600
City San Ramon Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

(3) APPLICANT
Name BSK & Associates
Address 1181 Quarry Ln. Phone 462-4000
City Pleasanton Zip 94583
FAX: 462-6283

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 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.

(4) IDENTIFICATION OF PROJECT
Water Well Construction Geotechnical
Cathodic Protection Well Destruction

B. WATER WELLS, INCLUDING PIEZOMETERS

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. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(5) PROPOSED WATER WELL USE
Domestic Industrial Irrigation
Municipal Monitoring Other

C. 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.

(6) PROPOSED CONSTRUCTION Destruction
Drilling Method:
Mud Rotary Air Rotary Auger
Other pressure grout with neat cement

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

WELL PROJECTS
Drill Hole Diameter in. Depth(s) ft.
Casing Diameter in. Number
Surface Seal Depth ft. of Wells 3
Driller's License No. CS 1 77077d

E. WELL DESTRUCTION. See attached.

GEOTECHNICAL PROJECTS
Number
Diameter in. Maximum Depth ft.

(7) ESTIMATED STARTING DATE 9/5/95
ESTIMATED COMPLETION DATE 9/5/95

Approved Wyman Hong Date 1 Sep 95
Wyman Hong

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 10-00.

APPLICANT'S
SIGNATURE Maury Chi Date 9/1/95

1 SEPT 95

ZONE 7
WATER RESOURCES ENGINEERING
GROUNDWATER PROTECTION ORDINANCE

DOUGHERTY REGIONAL FIRE AUTHORITY
7494 DONOHUE DRIVE
DUBLIN
WELLS 35/IW 2A13 TO 2A15
PERMIT 95566

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.

These destruction requirements as proposed by MARTY CLINE of
BSK & ASSOCIATES meet or exceed Zone 7 minimum
requirements.