Applied GeoSystems

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TRANSMITTAL

TO: MR. GIL WISTAR
ALAMEDA COUNTY HEALTH CARE SERVICES
DEPARTMENT OF ENVIRONMENTAL HEALTH
80 SWAN WAY, ROOM 200
OAKLAND, CA 94612

DATE: 5/15/91
PROJECT NUMBER: 60000.06
SUBJECT: WORK PLAN AND ADDENDUM TO WORK PLAN

FROM: JOEL COFFMAN
TITLE: ASST. PROJECT GEOLOGIST

WE ARE SENDING YOU [XX] Attached [ ] Under separate cover via _____ the following items:

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COPIES	DATED	NO.	DESCRIPTION
1	5/15/91	60000.06	WORK PLAN FOR ARCO STATION 771
1	5/15/91	60000.06	ADDENDUM ONE TO WORK PLAN FOR ARCO STATION 771

THESE ARE TRANSMITTED as checked below:

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REMARKS:
PER ARCO'S AUTHORIZATION COPY OF REPORT HAS BEEN FORWARDED FOR YOUR REVIEW.

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Copies: 1 to AGS project file no. 60000.06

SAN JOSE READER'S FILE

*Revision Date: 10/15/90
*File Name: TRANSMT.PRJ

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ADDENDUM ONE TO WORK PLAN SUPPLEMENTAL SUBSURFACE INVESTIGATION

at

ARCO Station 771
899 Rincon Avenue
Livermore, California

AGS 60000.06

Prepared for
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

by

RESNA/Applied GeoSystems

May 15, 1991

Applied GeoSystems 3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

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May 15, 1991
AGS 60000.06

Mr. Chuck Carmel
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: Addendum One to Work Plan 60000.06 to Perform Supplemental Subsurface Investigation at ARCO Station 771, 899 Rincon Avenue, Livermore, California.

Mr. Carmel:

As you requested, this letter has been prepared to serve as an addendum to the Work Plan (RESNA/Applied GeoSystems [AGS] 60000.06, May 15, 1991) for the subject site. The location of the subject site is shown on the Site Vicinity Map, Plate 1. AGS' approach and project tasks recommended to perform a supplemental subsurface investigations at this site include the following: drilling and sampling five additional onsite soil borings (B-7 through B-11) and installing four additional onsite ground-water monitoring wells (MW-4 through MW-7), developing, sampling, and measuring water levels in the monitoring wells in conjunction with ongoing quarterly monitoring of wells MW-1 through MW-3, surveying the new monitoring wells for top-of-casing elevation, performing laboratory analysis of soil and ground-water samples, and preparing a report of our findings, interpretations, and conclusions. The purpose of this work is to further evaluate the horizontal and vertical extent of gasoline-hydrocarbon impacted soils and ground water and to confirm the vertical extent of waste-oil hydrocarbons at the area of the former waste-oil tank.

A summary of previous work performed at the site by AGS and others is included in the Work Plan referenced above.

PROPOSED WORK

Applied GeoSystems recommends the following work at the site based on the results of previous investigations :

Step 1 — Drill and obtain soil samples for soil classification and laboratory analysis from five soil borings B-7 through B-11 as shown on Plate 2, Proposed Borings/Monitoring Wells. Soil borings B-7 through B-11 are located to evaluate the extent of gasoline hydrocarbons in the soil at the site. In addition, boring B-10 is located between tanks T-1 and T-2 to evaluate the presence of gasoline hydrocarbons in soil in the immediate area of the underground gasoline-storage tanks. Boring B-11 will be used to confirm the vertical extent of waste-oil hydrocarbons in soil at the area of the former waste-oil tank. Drill borings B-7 through B-10 to depths of 5 feet into a possible perching or confining layer beneath the first-encountered ground water (total depths of approximately 50 feet below the ground surface). Boring B-11, at the location of the former waste-oil tank will be drilled to first ground water. Install four ground-water monitoring wells (MW-4 through MW-7) with 4-inch diameter well casing in borings B-7 through B-10, respectively, to evaluate the extent of gasoline hydrocarbons and floating gasoline product previously encountered in well MW-2, and to confirm the ground-water gradient and flow direction of the first-encountered ground water.

Step 2 — Submit selected soil samples from soil borings B-7 through B-11 to a State-certified laboratory for analysis of total petroleum hydrocarbons as gasoline (TPHg) and the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 5030/8015/8020, and selected soil samples from boring B-11 for analysis of total petroleum hydrocarbons as diesel (TPHd) by EPA Method 3510/8015 and total oil and grease (TOG) by Standard Method 5520-D&F. Chain of Custody protocol will be followed.

Step 3 — Contract a licensed surveyor to survey wellhead elevations to a U.S. Coast and Geodetic Survey Datum.

Step 4 — Develop monitoring wells MW-4 through MW-7.

Step 5 Measure depths-to-water, record visual evidence of floating product in initial ground-water samples, and purge and obtain ground-water samples for laboratory analysis from the ground-water monitoring wells at the site that do not contain floating product.

Step 6 Submit ground-water samples from the ground-water monitoring wells to a State-certified laboratory for analysis of TPHg and BTEX by EPA Method 5030/8015/602.

Step 7 Prepare a report to include results of the investigation and our conclusions.

In the event an adequate thickness of floating product is encountered in the well immediately adjacent to the existing underground gasoline-storage tanks (MW-7), a separate addendum to work plan will be prepared for submittal to ARCO, City of Livermore Fire Department, RWQCB, and [redacted] remediation of ground water at the site. This system will be described in detail in the addendum should findings of this investigation warrant installation.

Field work proposed in this Addendum to Work Plan will be performed according to the Field Methods included in Appendix A of the above referenced Work Plan for Subsurface Investigations and Remediation for the subject site. A preliminary time schedule to perform Steps 1 through 7 is shown on Plate 3. Subsequent addenda to the Work Plan will be prepared and submitted to ARCO and proper regulatory agencies as necessary to describe future work proposed at the site.

Copies of this Addendum One should be forwarded to:

Mr. Tom Callaghan
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Mr. Gil Wistar
Alameda County Health Care Services Agency
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Mr. Randy Griffith
Livermore Fire Department
4550 East Avenue
Livermore, California 94550

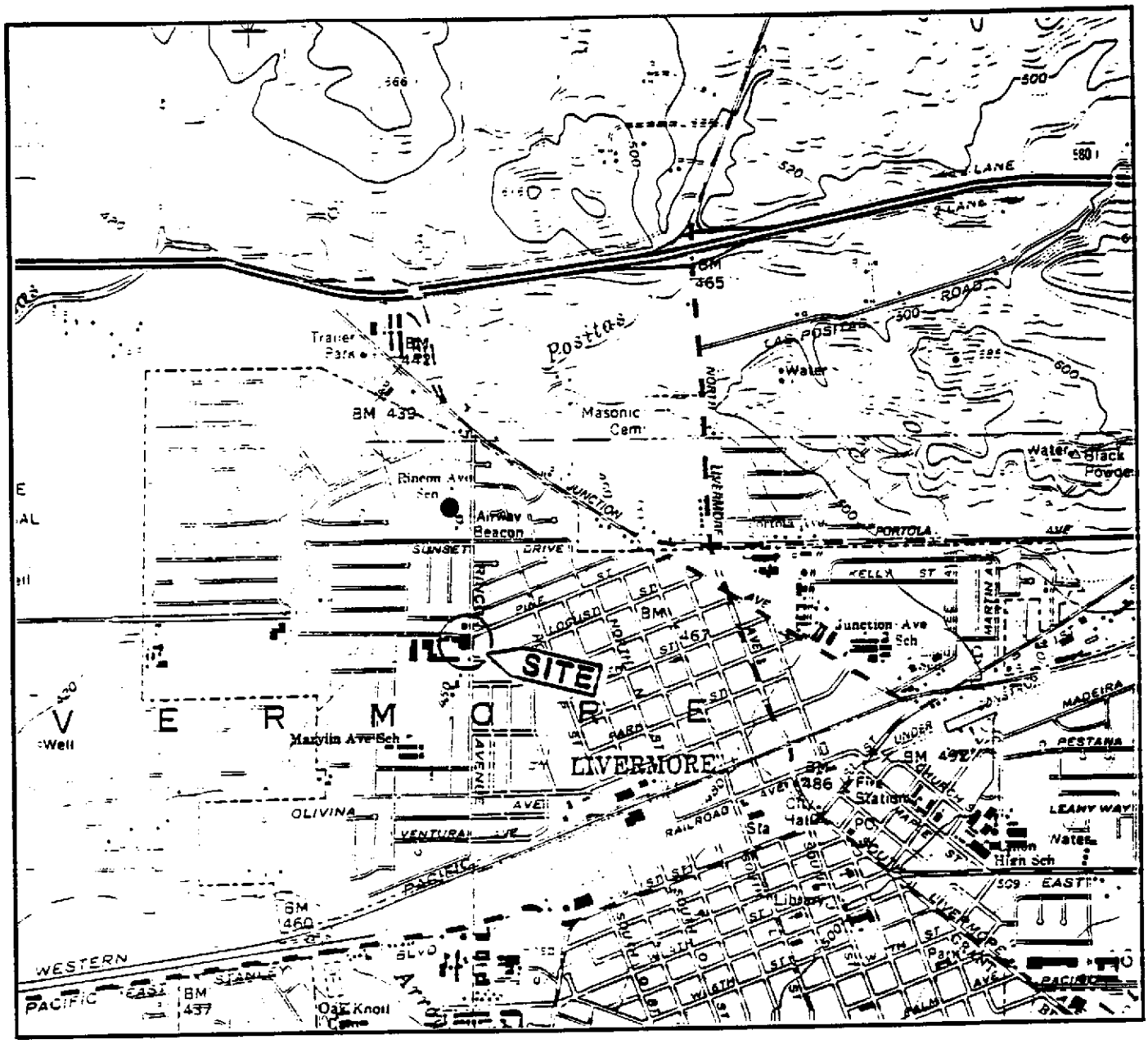
If you have any questions or comments about this Addendum to Work Plan, please call us at (408) 264-7723.

Sincerely,
RESNA\Applied GeoSystems

Joel Coffman
Assistant Project Geologist

Enclosures: Plate 1, Site Vicinity Map
Plate 2, Proposed Boring/Monitoring Well Locations
Plate 3, Preliminary Time Schedule

cc: H.C. Winsor, ARCO Products Company



Source: U.S. Geological Survey
7.5–Minute Quadrangle
Livermore,
California.
Photorevised 1980

N

Approximate Scale

2000 1000 0 2000 4000

feet

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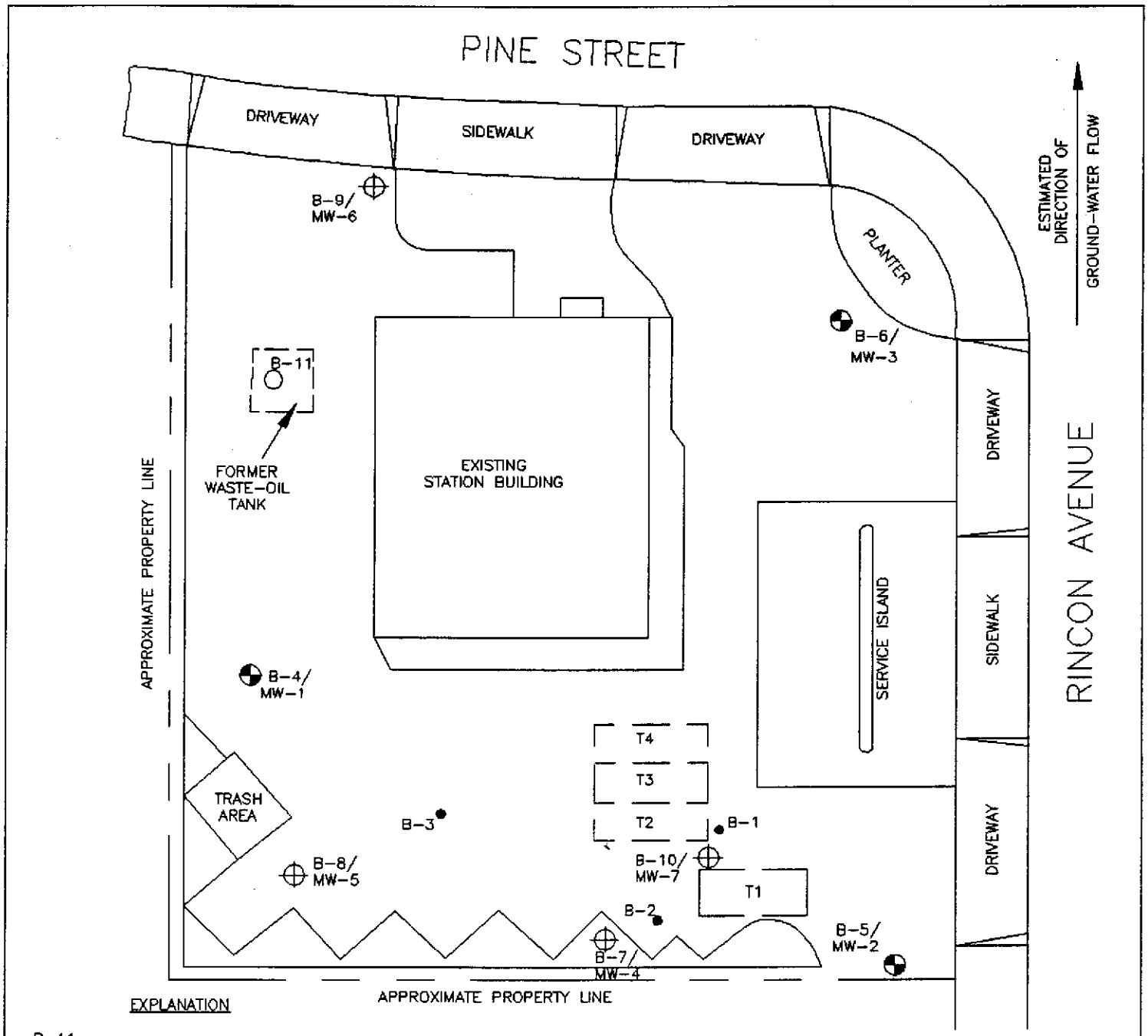
PROJECT 60000-6

SITE VICINITY MAP
ARCO Station 771
899 Rincon Avenue
Livermore, California

PLATE
1



EXPLANATION

B-11 ○ = Proposed soil boring

B-10 MW-7 ⊕ = Proposed monitoring well

B-6/ MW-3 ◔ = Monitoring well (Applied GeoSystems, December 1990)

B-3 ● = Soil boring (Applied GeoSystems, February 1990)

T4 = Underground gasoline-storage tank

N

Approximate Scale

20 10 0 20 40

feet

Source: Surveyed by Ron Archer Civil Engineer, Inc.

Applied GeoSystems

PROJECT 60000-6

PROPOSED BORING/ MONITORING WELL LOCATIONS
ARCO Station 771
899 Rincon Avenue
Livermore, California

PLATE 2

STEP 1:
Drill Borings,
Install Monitoring Wells

STEP 2:
Submit Soil Samples
for Laboratory Analysis

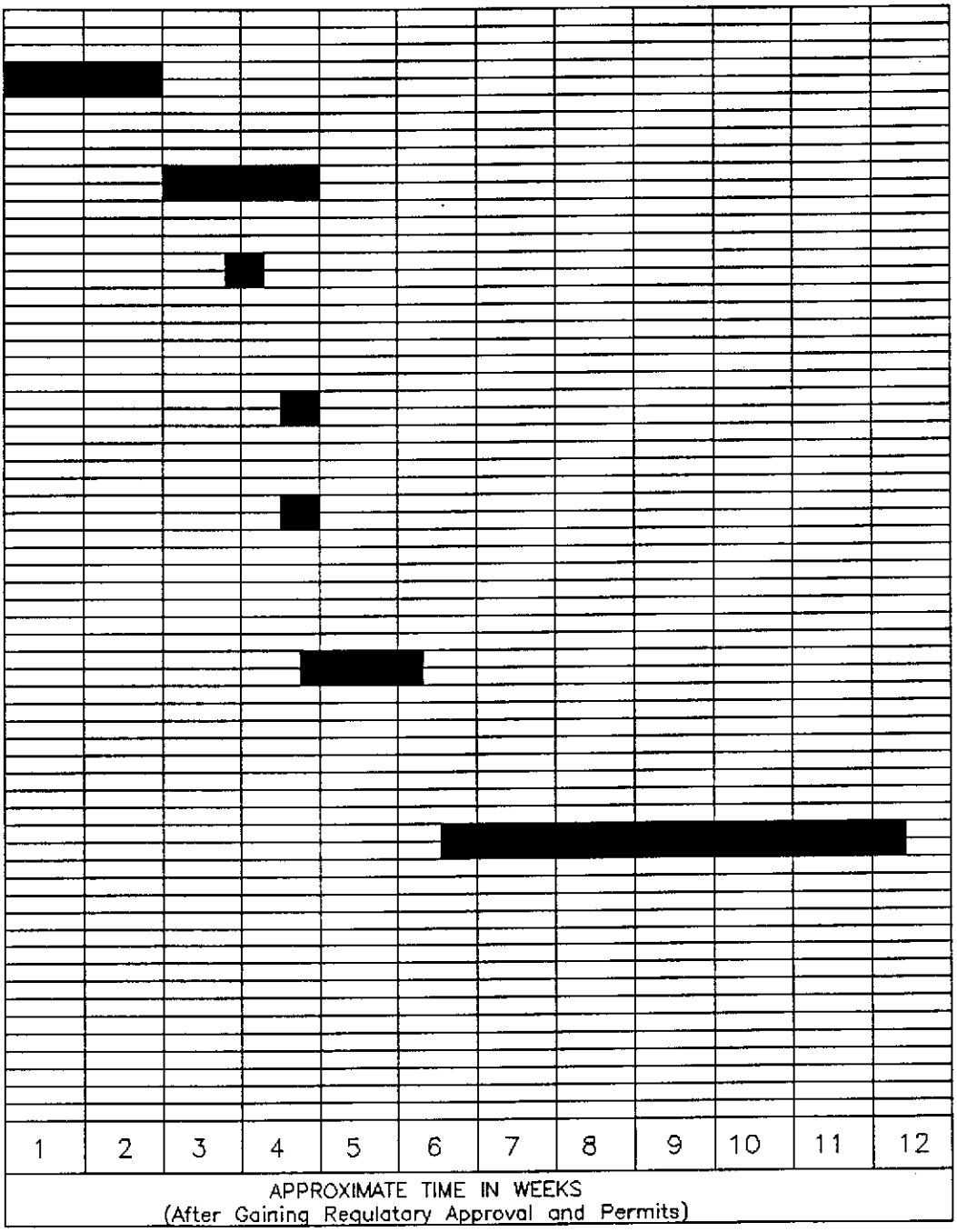
STEP 3:
Survey Monitoring Wells

STEP 4
Develop Monitoring Wells

STEP 5:
Measure Depth-to-Water
and Sample Wells

STEP 6:
Submit Ground-Water
Samples for
Laboratory Analysis

STEP 7:
Report Preparation



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PROJECT **60000-6**

PRELIMINARY TIME SCHEDULE
ARCO Station 771
899 Rincon Avenue
Livermore, California

PLATE
3