

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 92-51

DIRECTING THE EXECUTIVE DIRECTOR TO NEGOTIATE A COOPERATIVE AGREEMENT WITH THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGION 9, TO APPLY FOR AND ACCEPT A GRANT OF APPROXIMATELY \$1,500,000 AND TO NEGOTIATE A WORKPLAN TO CONTINUE SOURCE INVESTIGATION ACTIVITIES IN THE SAN FERNANDO VALLEY

WHEREAS:

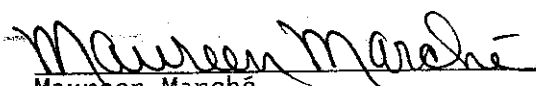
1. The San Fernando Valley ground water basin provides drinking water for over 600,000 people.
2. A portion of the San Fernando Valley and Verdugo ground water basins are polluted with volatile organic compounds and nitrates at concentrations exceeding State and federal drinking water standards.
3. Four areas within the San Fernando Valley were placed on the U.S. Environmental Protection Agency's (EPA) National Priority List (NPL) in 1986. The four areas are: North Hollywood/Burbank, Crystal Springs, and Pollock well fields in the San Fernando Valley Basin and the Crescenta Valley and Glorietta well fields in the Verdugo Basin.
4. The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Regional Water Board), has been investigating sources of ground water contamination in the San Fernando Valley under its Underground Tank and Well Investigation Programs since 1984 in an attempt to identify sources contributing to ground water pollution.
5. EPA is making a grant available to the State Water Resources Control Board (State Water Board) which will continue funding for additional staff positions to continue source identification activities in the San Fernando Valley.

THEREFORE, BE IT RESOLVED THAT:

The State Water Board directs the Executive Director or his designee to: (1) negotiate a Cooperative Agreement with EPA to continue source investigation activities in the San Fernando Valley, (2) apply for and accept a federal grant of approximately \$1,500,000, and (3) negotiate a workplan (attached) with EPA for source identification activities in the San Fernando Valley.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 16, 1992.


Maureen Marché
Administrative Assistant to the Board

PROPOSED WORKPLAN
FOR THE
SAN FERNANDO VALLEY GROUND WATER BASIN
SOURCE IDENTIFICATION COOPERATIVE AGREEMENT
JANUARY 1 1993 - DECEMBER 31, 1993

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

JUNE 1992

JUL 07 1992

TABLE OF CONTENTS

SAN FERNANDO VALLEY SOURCE IDENTIFICATION
COOPERATIVE AGREEMENT 3

TASK 1: POTENTIAL SOURCE IDENTIFICATION 4

TASK 2: WALK THROUGH SITE INSPECTIONS 6

TASK 3: DISCHARGE CONFIRMATION 8

TASK 4: PROGRAM MANAGEMENT 10

TASK 5: DATA ENTRY 12

TABLE 1: COST ESTIMATE 13

APPENDIX A. EXPENSES

APPENDIX B. CHEMICAL USE QUESTIONNAIRE

APPENDIX C. WORK PLAN REQUIREMENTS

JUL 07 1987

**SAN FERNANDO VALLEY SOURCE
IDENTIFICATION COOPERATIVE AGREEMENT**

The goals of the San Fernando Valley Source Identification Cooperative Agreement are:

1. To accelerate the identification, assessment and mitigation of sources of ground water pollution in the San Fernando Valley superfund sites.
2. To augment the Regional Water Quality Control Board's (RWQCB) existing source investigation program.
3. To coordinate and encourage local entities efforts to identify, assess, and mitigate sources of ground water contamination.

Environmental Protection Agency (EPA) has provided funding and will continue to provide funding to support the source identification portions of the RWQCB's existing source investigation program. This funding is meant to augment the existing program and free up state resources to conduct the site assessment portions of the program.

This program is an ongoing project. A reevaluation of the resource needs and expected outputs will be conducted each year to reflect the information gained during the previous year.

TASK 1. POTENTIAL SOURCE IDENTIFICATION

OBJECTIVE: The objective of this task is to develop a list of potential sources of groundwater contamination in each study area.

ACTIVITIES: The following is a description of the activities (subtasks) included in Task 1:

- A. A drive through survey will be conducted in each Investigation Area (IA) to generate a list of all facilities with the potential for onsite storage of chemicals.
- B. A master list of potential sources will be finalized by reviewing: 1) State and federal right-to-know chemical information and 2) facility lists maintained by other agencies.
- C. Where preliminary chemical use information is inadequate, facilities will be sent a request for chemical storage and use information (Appendix B).
- D. As completed questionnaires are received, information will be logged into the computerized data tracking system and a hard copy file will be created for each facility.
- E. Follow up for non-responding facilities will be conducted using one or all of the following; telephone call, second letter, site visit, administrative enforcement letter and/or formal enforcement action.

COSTS: Cost estimates are detailed in Table 1.

PRODUCTS: The number and location of IAs will be determined by EPA Project Officer and Regional Water Quality Control Board Program Manager. No new IAs are planned to be opened during the term of this contract.

REPORTING:

PROGRESS REPORTS: Will be submitted quarterly, thirty days after the last day of the previous quarter. Broken down by IA, the report for this Task will contain a numeric summary and a detailed list of the following items:

1. Facilities contacted.
2. Questionnaires received.
3. Administrative and formal enforcement actions taken.

FACILITY MAP: A map created using the Geographic Information System (GIS) depicting the locations of the above facilities.

TASK 2. WALK THROUGH SITE INSPECTIONS

OBJECTIVE: The objective of this task is to conduct site inspections at each of the potential sources identified in Task 1 and to evaluate the likelihood and potential of discharge from each to soil and/or groundwater.

ACTIVITIES: The following is a description of the activities included in Task 2:

- A. Walk through site inspections will be conducted at all facilities. The inspections will be used to confirm the information submitted in the questionnaires and to observe the facilities chemical storage, use and disposal practices.
- B. A walk-through site inspection check list will be completed and a narrative summary will be written describing the housekeeping practices observed at each facility.
- C. The potential for present and/or past discharge from each facility will be evaluated. The evaluation will be based on the type and amount of chemicals used at the site, the method and condition of chemical storage facilities, the methods used for chemical conveyance, and the onsite waste storage, treatment and disposal practices.
- D. Based on the evaluation described in subtask 2C, if a facility has a potential for discharge it will be included in discharge confirmation work (Task 3).
- E. Enforcement actions (CAO) if a serious problem is found during an inspection.

COSTS: Cost estimates are detailed in Table 1.

PRODUCTS: The projected number of facilities to be inspected during the period of this agreement is 643. This figure was derived using the Work Load Standards developed from the Regional Board's experience gained in the San Fernando Valley Cooperative Agreement. San Fernando is currently budgeted at 2.9 PYs for this task. We have estimated eight hours per potential source for each inspection.

REPORTING:

PROGRESS REPORTS: Will be submitted quarterly, thirty days after the last day of the previous quarter. Broken down by IA, the

JUL 07 1992

TASK 2. (Continued)

report for this Task will contain a numeric summary and a detailed list of the following items:

1. Facilities inspected.
2. Facilities recommended for inclusion in discharge confirmation (Task 3).
3. Facilities excluded from further work.
4. Facilities referred to other agencies.
5. Enforcement actions taken.

FACILITY MAP: A map created using the Geographic Information System (GIS) depicting the locations of the above facilities.

TASK 3. DISCHARGE CONFIRMATION

OBJECTIVE: The objective of this task is to confirm or deny discharge at the sites identified in Task 2.

ACTIVITIES: The following is a description of the activities included in Task 3:

- A. Facilities identified in subtask 2C will be requested to submit work plans for conducting initial soil and/or groundwater investigations.
- B. Staff will review the submitted work plans to ensure the work proposed will meet the minimum requirements needed to confirm or deny discharge (Appendix C).
- C. Staff will oversee field activities, as needed, to ensure that the work performed follows the procedures described in the approved work plan.
- D. Staff will collect soil and groundwater samples for analysis, as needed. All samples collected by staff will be sent to an EPA contracted laboratory or to the State contracted laboratory.
- E. Results from initial investigations will be reviewed to determine if discharge has occurred. Facilities with confirmed groundwater contamination will be required to conduct assessment.
- F. A written description of staffs interpretation of results will be prepared for each facility, i.e., required to do further work or close out memo.
- G. Appropriate enforcement action will be taken for un-cooperative facilities.
- H. Local entities will be notified of confirmed discharges.

COSTS: Cost estimates are detailed in Table 1.

PRODUCTS: Experience gained from the existing source investigation program shows that approximately 25% of all facilities inspected are required to conduct investigations. This information, combined with the number of inspections estimated in Task 2, indicates that 160 initial investigations will be initiated in this year of the agreement.

TASK 3. (Continued)

REPORTING:

PROGRESS REPORTS: Will be submitted quarterly, thirty days after the last day of the previous quarter. Broken down by IA, the report for this Task will contain a numeric summary and a detailed list of the following items:

1. Facilities conducting initial soil investigations.
2. Facilities with confirmed soil contaminants.
3. Facilities conducting initial groundwater investigations.
4. Facilities with confirmed groundwater pollution.
5. Facilities required to conduct further assessment work.
6. Enforcement actions taken.

FACILITY REPORTS: One (1) copy of all facility reports will be submitted to EPA and one (1) copy to the specified EPA contractor.

FACILITY MAP: A map created using the GeographicIS depicting the locations of the above facilities will be submitted, when the system is operational.

WORKPLANS: One (1) copy of all workplans will be submitted to EPA and one (1) copy to the specified EPA contractor.

CORRESPONDENCE: One (1) copy of all Well Investigation facility related correspondence will be sent to the EPA.

TASK 4. PROGRAM MANAGEMENT

OBJECTIVE: The objective of this task is two-fold: (1) to provide coordination between the EPA, SWRCB and RWQCB, and (2) to administer the program.

ACTIVITIES: The following is a description of the activities included in Task 4:

- A. Plan and oversee overall program schedule and budget.
- B. Program analysis and development.
- C. The Division of Water Quality will act as the lead to coordinate activities between Division of Administrative Services, Office of Chief Counsel, Division of Water Quality, State Board management, Regional Board and EPA. The Division of Water Quality will also maintain duplicate files on progress and expenditures of the CA.
- D. Recruit staff.
- E. Coordinate data and graphic information exchanges between EPA, SWRCB and RWQCB.
- F. Maintain computerized tracking system that will meet the reporting requirements of the EPA, SWRCB and the RWQCB: This system tracks the progress of the facilities through both source identification, funded under this agreement, and site assessment, funded under the existing state Well Investigation Program.
- G. Maintain investigations area GIS. Specific responsibilities for this activity will be described in GIS workplan to be jointly developed by the EPA and RWQCB.
- H. Maintain all records regarding timekeeping, traveling and expenditures.
- I. The Division of Administrative Services (DAS) will maintain all Superfund cost recovery documentation. Both original Files and Area Files will contain time sheets, invoices, quarterly summaries of indirect and direct cost, dates and amounts of drawdown. DAS will reconcile files with expenditures every six months and prepare Financial Status documents to facilitate the agreement.
- J. Office of Chief Counsel will provide legal assistance to the State and Regional Boards.
- K. Prioritization of IA's to be coordinated between EPA and RWQCB.
- L. Involvement in meetings as part of Interagency Coordinating Committee and Sub-Committee to discuss program implementation priorities and enforcement strategies.
- M. Analysis of information gathered during the program's current year will be submitted in a year end report.

COSTS: Cost estimates are detailed in Table 1.

TASK 4. (Continued)

PRODUCTS: The products of this task will be the successful initiation, management and reporting of all tasks identified in this agreement.

REPORTING:

COST REPORTS: Will be submitted quarterly, thirty days after the last day of the previous quarter. The report for this task will contain the following items:

1. Expenditures to date (directly from Division of Administrative Services).
2. Expenditures during the previous quarter (directly from Division of Administrative Services).
3. Staff resources expended by IA and Task.

PROGRESS REPORTS: Will be submitted quarterly, thirty days after the last day of the previous quarter.

1. Progress reported on State funded activities including site assessment and source elimination cleanup.

TASK 5. DATA ENTRY

OBJECTIVE: The objective of this task is to track all aspects of the program with an automated data management system and provide for the reporting needs of the RWQCB, SWRCB and EPA.

ACTIVITIES: The following is a description of the activities included in Task 5:

- A. Data entry for all of the above tasks.
- B. Dual entry for quality control.
- C. Printing of standard reports.

COSTS: Cost estimates are detailed in Table 1.

PRODUCTS: The products of Task 5 will be the successful tracking of all Tasks in this agreement, dual entry for quality control and the production of the reports listed for Tasks 1-3.

REPORTING:

Ground water data will be dual entry (entered twice) for quality control. No specific reports will detail the progress of this task, but all reports will be dependent on the accuracy and timeliness of this task.

TABLE I

COST ESTIMATE FOR SAN FERNANDO VALLEY SOURCE IDENTIFICATION COOPERATIVE AGREEMENT

JANUARY 1, 1993 - DECEMBER 31, 1993

TASK	STAFF LEVEL	STAFF
1. POTENTIAL SOURCE IDENTIFICATION	SENIOR WRCE	0.1
	ENV. SPEC. II	<u>0.1</u>
	POSITIONS	0.2
	PYs	0.2
2. WALK THROUGH SITE INSPECTIONS	SENIOR WRCE	0.3
	WRCE	0.6
	ENG. GEOLOGIST	1.2
	SAN.ENG. ASSOC.	0.3
	ENV. SPEC. III	0.3
	ENV. SPEC. II	<u>0.4</u>
	POSITIONS	3.1
PYs	2.9	
3. DISCHARGE CONFIRMATION	SENIOR WRCE	0.3
	WRCE	1.3
	ENG. GEOLOGIST	2.5
	SAN. ENG. ASSOC.	0.5
	ENV. SPEC. III	0.5
	ENV. SPEC. II	0.2
	OFFICE ASST. II	<u>1.0</u>
	POSITIONS	6.3
PYs	6.0	

TABLE I (Continued)

4.	PROGRAM MANAGEMENT	EXEC. OFFICER	0.1
		PRINCIPAL ENG.	0.1
		SUPV. WRCE	0.8
		ENV. SPEC. IV	0.5
		SENIOR WRCE	0.3
		INFO. SYSTEM TECH.	0.5
		ASSOC. G.P. ANALYST	1.1
		STAFF SVCS. ANALYST	0.3
		SENIOR ENG. GEOLOGIST	0.3
		ASSOC. ENG. GEOLOGIST	0.2
		STAFF COUNSEL	0.1
		MANAGEMENT SVCS. TECH.	0.3
		OFFICE SVCS. SUPV. I	0.5
		ACCOUNTANT I	0.4
		WORD PROCESS TECHNICIAN	0.2
		OFFICE TECHNICIAN	1.0
		POSITIONS	<u>6.7</u>
		PYs	6.5
5.	DATA ENTRY	OFFICE ASSISTANT	<u>1.5</u>
		POSITIONS	1.6
		PYs	1.5
		TOTAL POSITIONS	17.9
		TOTAL PYs	17.1

TABLE II

**SAN FERNANDO VALLEY GRANT PROPOSAL
PERSONAL SERVICES**

REGIONAL BOARD STAFF	POSITIONS	SALARIES
Executive Officer	0.1	\$ 8,500
Principal Engineer	0.1	\$ 7,300
Supervising WRC Engineer	0.8	\$ 96,000
Senior WRC Engineer	1.0	\$110,000
Environmental Specialist IV	0.5	\$ 42,000
WRC Engineer	1.9	\$195,000
Sanitary Eng. Associate	0.8	\$ 70,000
Eng. Geologist	3.8	\$227,000
Environmental Specialist III	0.8	\$ 80,000
Environmental Specialist II	0.7	\$ 55,000
Assoc. Gov't. Prog. Analyst	0.7	\$ 48,500
Staff Svcs. Analyst	0.3	\$ 9,000
Info. Systems Technician	0.5	\$ 26,000
Management Svcs. Technician	0.3	\$ 8,700
Office Services Supv. I	0.5	\$ 25,000
Office Technician	1.0	\$ 50,000
Office Assistant	2.5	\$114,000
	16.3	\$1,172,000
STATE BOARD STAFF	POSITIONS	SALARIES
Senior Eng. Geologist	0.3	\$ 34,000
Assoc. Eng. Geologist	0.2	\$ 18,000
Assoc. Gov't. Prog. Analyst	0.4	\$ 33,000
Staff Counsel II	0.1	\$ 10,000
Accountant I	0.4	\$ 25,000
Word Process Technician	0.2	\$ 10,000
	1.6	\$130,000
TOTAL PERSONAL SERVICES	17.9	\$1,302,000
EQUIPMENT AND CONTRACTS		\$45,000
TOTAL COST		\$1,347,000

JUL 07 1992

APPENDIX A

JUL 07 1992

APPENDIX A: EXPENSES

Following are the descriptions and estimated costs of the equipment and services required to meet the objectives of this Cooperative Agreement. All equipment described below will be used solely for superfund related activities.

GEOGRAPHICAL INFORMATION SYSTEM (GIS)

Software	\$20,000
Training	\$10,000
Maintenance	<u>\$15,000</u>
	\$45,000

JUL 07 1992

APPENDIX B

ENTER FILE NO. FROM LETTER _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION CHEMICAL STORAGE AND USE QUESTIONNAIRE

I. COMPANY NAME: _____

II. FACILITY ADDRESS: _____

III. FACILITY INFORMATION

A. STANDARD INDUSTRIAL CLASSIFICATION CODE(SIC): _____

B. GENERATOR NUMBER(EPA/STATE): _____

C. BRIEF DESCRIPTION OF OPERATIONS: _____

D. SEWER SYSTEM: INDUSTRIAL _____ MUNICIPAL _____
 SEPTIC TANK _____ CESS POOL _____

WAS A DIFFERENT SEWER SYSTEM USED IN THE PAST? YES _____ NO _____

IF YES SPECIFY TYPE _____ DATE CONVERTED _____

E. FACILITY OWNER _____

F. HISTORY: DATE OPERATIONS BEGAN: _____

PRIOR OWNERS: _____

IV. CHEMICAL STORAGE AND USE AT THE SITE. Complete sections A-G(page 2) for all chemicals in current use or that have been used in the past, use additional sheets if necessary.

A. CHEMICAL NAME: _____ B. COMMON/TRADE NAME: _____

C. METHOD OF STORAGE: UNDERGROUND TANK ___ ABOVE GROUND TANK ___
BARRELS ___ OTHER(specify) _____

D. QUANTITY STORED: _____

E. WASTE DISPOSAL METHOD: SEWERED ___ HAULED ___ ONSITE DISPOSAL ___

F. IS THE WASTE TREATED PRIOR TO DISPOSAL: YES ___ NO ___
If yes, method of treatment: _____

G. IS THE WASTE STORED PRIOR TO DISPOSAL: YES ___ NO ___

A. CHEMICAL NAME: _____ B. COMMON/TRADE NAME: _____

C. METHOD OF STORAGE: UNDERGROUND TANK ___ ABOVE GROUND TANK ___
BARRELS ___ OTHER(specify) _____

D. QUANTITY STORED: _____

E. WASTE DISPOSAL METHOD: SEWERED ___ HAULED ___ ONSITE DISPOSAL ___

F. IS THE WASTE TREATED PRIOR TO DISPOSAL: YES ___ NO ___
If yes, method of treatment: _____

G. IS THE WASTE STORED PRIOR TO DISPOSAL: YES ___ NO ___

A. CHEMICAL NAME: _____ B. COMMON/TRADE NAME: _____

C. METHOD OF STORAGE: UNDERGROUND TANK ___ ABOVE GROUND TANK ___
BARRELS ___ OTHER(specify) _____

D. QUANTITY STORED: _____

E. WASTE DISPOSAL METHOD: SEWERED ___ HAULED ___ ONSITE DISPOSAL ___

F. IS THE WASTE TREATED PRIOR TO DISPOSAL: YES ___ NO ___
If yes, method of treatment: _____

G. IS THE WASTE STORED PRIOR TO DISPOSAL: YES ___ NO ___

JUL 07 1992

V. THIS QUESTIONNAIRE SHALL BE SIGNED BELOW AS FOLLOWS:

- A. In the case of corporations, by a principal executive officer at the level of vice-president or his duly authorized representative if such representative is responsible for the overall operation of the facility, or
- B. In the case of a partnership, by a general partner, or
- C. In the case of a sole proprietorship, by the proprietor, or
- D. In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

This questionnaire has been completed under penalty of perjury and, to the best of my knowledge, is true and correct.

Signature: _____

Date: _____

Printed Name: _____

Title: _____

Phone: _____

Contact Name: _____

Title: _____

Phone: _____

JUL 07 1992

APPENDIX C

JUL 07 1993

STATE OF CALIFORNIA
California Regional Water Quality Control Board
Los Angeles Region

WORKPLAN REQUIREMENTS
for
INITIAL SUBSURFACE ENGINEERING/GEOLOGIC SOIL INVESTIGATION
(WELL INVESTIGATION PROGRAM)

The objective of this engineering/geological investigation is to evaluate potential waste discharges which may impact ground water. Your workplan should include, but not be limited to, the following:

SITE INFORMATION: Characterize past and present specific business activities. List any previous businesses at the site. Describe storage, handling, use, and disposal procedures for chemicals, primarily chlorinated organics or aromatic solvents. Give name, address, and phone number of any landlord/lessor.

FACILITY MAP: Identify on a scaled facility map all potential sources for contamination, past and present. Examples include: chemical and waste storage, transfer and use areas including tanks and piping, clarifiers, sumps, pits. Indicate dates of completion of buildings or pavings where possible.

SITE SOILS AND GEOLOGY: Determine if site discharges have entered the vadose zone, define sources, and provide background geological data for the area. Use EPA or State Department of Health Services guidelines.

1. Provide rationale for the number and location of borings. Plot on facility map.
2. Provide reasons for proposed depth of each boring if less than the generally required depth of 40 feet. Additional depths may be required if ground water is encountered or if there is obvious contamination in the boring.
3. Identify proposed construction methods for borings.
4. Log all borings to provide characteristics of unconsolidated material per Unified Soil Classification System as well as all other appropriate information.
5. Provide a sampling plan to include equipment and procedures for collection and handling of geologic materials. A sampling interval of 5 feet, each change in lithology or changes in observed contamination is required starting at just below surface or surface covering.
6. Comply with chain of custody procedures. Discrete, undisturbed samples will be taken, sealed, and transported to the laboratory for analyses. Samples submitted for laboratory analyses are not to be used for field screening.

JUL 07 1992

7. The proposed laboratory must be State Department of Health Services registered for each analytical procedure specified. EPA Methods 8260 or 8010/8020 are required. Supplement with Methods necessary for any site chemicals, past and present.
8. At a minimum, EPA sample holding times and conditions must be observed. Samples for volatile organic compounds should be analyzed within seven days whenever possible.
9. EPA practical quantitation limits (5 to 10 $\mu\text{g}/\text{kg}$ for selected VOC) are required. Analytical results must indicate detection limits and whether a chemical potentially exists (trace).
10. Minimum laboratory QA/QC requirements include: field and reagent blanks, calibration check standards, matrix spiked duplicates, total recoverables, laboratory quality control sample.

GROUNDWATER (HYDROGEOLOGY): Ground water must be sampled if any boring encounters a saturated zone. Site specific exceptions may be made in consultation with Board staff.

1. Provide a contingency plan for conversion of borings that encounter saturated zones to ground water sampling wells. This should include permitting and well design, construction, and development specifications.
2. Provide protocols for field analysis, water sampling, handling and transport.
3. EPA Methods 601/602 or appropriate 500 Series Methods must be used plus any appropriate EPA Methods for nitrates and any other chemicals used on site.

ADDITIONAL REQUIREMENTS:

1. Four copies of the work plan are to be submitted with all information requested.
2. Submit the results of any previous subsurface investigations conducted at the site.
3. Submit a time schedule. The proposed activities must be completed within 6 to 8 weeks of plan approval.
4. Work shall not proceed without prior approval. Staff is to be notified at least 10 days prior to initiating field work to permit observation of field activities and to take split or duplicate samples.
5. A CALIFORNIA REGISTERED GEOLOGIST OR ENGINEER OR CERTIFIED ENGINEERING GEOLOGIST WITH FIVE YEARS SOILS OR HYDROGEOLOGIC EXPERIENCE SHALL DIRECT OR CONDUCT THESE INVESTIGATIONS AND PROPERLY SIGN OFF THE FINAL REPORT FOR THE REPORT TO BE ACCEPTED AND APPROVED.

rs4 0191