Original Comments 101-110

Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations 1985

#101

ADVOCATION, INC.
DONALD K. BROWN

October 23, 1984

Carole Onorato, Chairwoman
State Water Resources Control Board
901 "P" Street
Sacramento, CA 95814

re: October 23 public hearing on underground storage tanks.

Dear Carole:

On behalf of our client, the Pacific Merchant Shipping Association, we would like to submit to you their comments on the issue of underground storage tanks which will have a public hearing today for proposed rule changes. PMSA's comments on the proposal concern only the stored substances such as motor fuels, i.e. diesel, gasoline, and propane.

The concern of storing underground hazardous substances, by all means, is shared by PMSA, and we understand the need for primary and secondary containment. The proposal makes an allowance in the case of secondary containment for motor fuels by suggesting a need for leak interception and removal system.

It is our opinion that in case of the "Monitoring Criteria," an allowance should also be made that would only call for one type of detection device of leakage from the primary container into the secondary one. The removal of unauthorized substance should be made as soon as it is practicable and a repair of the leaking container to follow immediately.

The point we wish to make is that the differentiation between "motor vehicle fuels" and "other substances" appreciably more hazardous should be carried through from the new tank construction to the monitoring criteria.

Sincerely,

Donald K. BrOwn
President

DKB:sab

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Subchapter 16
#102

COMMENTS AND PROPOSALS OF THE

CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION

ON THE PROPOSED STATE WATER RESOURCES CONTROL BOARD

REGULATIONS FOR THE STORAGE OF HAZARDOUS SUBSTANCES

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COMMENTS AND PROPOSALS OF THE

CALIFORNIA INDEPENDENT-OIL MARKETERS ASSOCIATION

ON THE PROPOSED STATE WATER RESOURCES CONTROL BOARD

REGULATIONS FOR THE STORAGE OF HAZARDOUS SUBSTANCES

1. General Comments

The California Independent Oil Marketers Association (CIOMA) respectfully submits to the State Water Resources Control Board (Board) for consideration the following comments and proposals concerning the regulation, design, construction, and operation of underground storage tanks storing hazardous material in California.

CIOMA is aware of and sensitive to the California Legislature's general intent in the adoption of Chapter 6.7 of the California Health and Safety Code entitled "Underground Storage of Hazardous Substances".

The people of the State of California have taken, probably more than any state in the union, taken a genuine and serious interest in the preservation and protection of their ground water resources. The very nature of California's geographical location, its climatic conditions, its population concentrations, and its industries and businesses mandate that its water resources receive State and local protection in order to preserve California's standard of living for future generations. The membership of CIOMA has supported and applauded such efforts.

As mandated by Health and Safety Code Chapter 6.7 there are presently before the Board proposed regulations, the general intent of which is the preservation of California's water resources. CIOMA recognizes the sensitivity and complexity of addressing the problem of regulating storage of underground hazardous substances and applaud the hard work of the staff of the Board in developing the proposed regulations as well as recognizing the impact and effect such regulations will have on California businesses.

CIOMA does have, however, a number of significant and serious concerns with the draft regulations which generally affect the continued productivity and viability of the businesses of its members.

The membership of CIOMA is comprised of approximately 380 independent petroleum marketing businesses, who supply the petroleum requirements of the vast majority of the agricultural, rural, commercial, industrial and governmental, needs of people and businesses within the State of California. The balance of its membership can be found in the urban centers of California and give the urban consumer a viable alternative to the major oil companies in California. CIOMA's members cannot come close to matching the economic and financial resources of the major petroleum producers and retailers.

If the proposed regulations of subchapter 16 were adopted in their present form, a very large percentage of CIOMA's membership would not have available the financial resources to comply.

This would be especially true with regard to the Board's proposed regulations concerning the monitoring of existing underground storage tanks. Further and more important, CIOMA members' customers could not comply and would instead remove their tanks, thereby eroding the members' customer basis.

In recent discussions and meetings with its membership, CIOMA has determined that if several major areas of the regulations were adopted by the Board, the economic impact of compliance would, more than likely, either force its members to cease operations and close their businesses or consider other alternatives such as relief under the Federal Bankruptcy Act.

Moreover, many of the requirements of the proposed regulations are overly prescriptive and may be unnecessary in accomplishing the intent of the Board and in preserving California's water resources.

In addition, many of the proposed regulations go far beyond the original intent of Chapter 6.7 and the Board may have stepped beyond its authority as mandated in Section 25299.3 of the Health and Safety Code. Also, CIOMA's analysis has found that many of the sections within the regulations are duplicative, inconsistent, and unclear based on industry wide standards and practices.

Finally, CIOMA compliments and supports the Board's recognition of the impact subchapter 16 will have on small businesses found in their Small Business Impact Statement within the published Statement of Reasons. The membership of CIOMA

urges the Board to further study the impact the regulations will have on small businesses in California including the development and implementation of alternatives and the enlargement of various modifications to the regulations.

The following is a detailed discussion of CIOMA's specific concerns and proposals.

2. Article 1

Section 2610(b)

Comments

Section 2610(b) states "if the operator of a tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to: monitor the tank; maintain appropriate records; implement reporting procedures as required by the permit; and properly close the tank as required by the permit." There is no basis in Chapter 6.7 of the Code nor in any statute or case law that CIOMA is aware of that would mandate a contractual relationship be entered into between an owner and an operator. It is well settled that the people of the State of California have the freedom, but not the obligation to contract. Moreover, in the majority of the leases existing between an owner and an operator, there is probably no provision which requires an operator to contractually obligate himself to the owner to meet prospective legislative mandates.

Proposal

CIOMA proposes that the requirement of a written contract be eliminated.

Section 2611

Comments

Section 2611(a)(1) provides that owners of underground storage tanks located within cities or counties that have adopted an ordinance which the meets the requirements of Article 3 and 4 of the regulations are exempt. Such a requirement appears to be inconsistent with Section 25299.1 of the Health and Safety Code which provides for exemptions for those owners within jurisdictions that have adopted ordinances which meet the requirements of Section 25291 and 25292. Since the Code only provides for exemptions consistent with 25291 and 25292 the Board may have exceeded their authority by allowing exemptions for ordinances which meet Article 3 and 4 of the regulations.

Proposal

CIOMA therefore suggests that subsection (a)(1) be amended to provide that those underground storage tanks within city and county jurisdictions which have met the requirements of Health and Safety Code Section 25299.1 be exempted. CIOMA sees no requirement for the addition of subsections (A), (B), (C), and (D), if subsection (a)(1) were amended as suggested.

Furthermore, CIOMA feels it was the intent of the legislature in adopting Chapter 6.7, that only those underground storage tanks located in jurisdictions which did not adopt an ordinance meeting the minimum requirements of Secton 25288 of the code would be subject to the proposed regulations.

3. Article 2

Section 2620

Comments

The definition of "hazardous substance" within Section 2620 is merely a mirror of the definition of hazardous substance in Section 25281 of the Health and Safety Code and, therefore, does not appear to be necessary. Furthermore, Section 2620 makes reference to a comprehensive master list prepared by the Department of Health Services containing those substances which are classified as hazardous. CIOMA is not aware whether any such master list exists and is available for review and inspection. The existence of such a master list should be clarified in the regulations.

Moreover, the regulations do not address procedure by which the Board will make determinations as to whether a given substance is classified as hazardous and adversely affects the quality of waters of the state pursuant to Section 25281(c) of the Code. In short, Section 2620 concerning "hazardous substances" appears to be inconsistent and confusing when comparing such language with that found in Section 25281 of the Health and Safety Code.

Proposal

CIOMA proposes the following definitional changes:

> "Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved or drawn.

"Pipe" means any pipeline or system of pipelines which under normal operating conditions contains liquid and which is used in connection with hazardous substances and which are not intented to transport hazardous substances in inter-state or intra-state commerce or to transfer hazardous materials in bulk to or from a marine vessel.

"Tank" means any single container which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground. For purposes of this definition substantially shall mean at least 50%.

"Underground storage tank" means any one of a combination of tanks, including pipes which under normal operating conditions contain liquid, and which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground. For purposes of this

definition, subtantially shall mean at least 50%.

CIOMA also feels that there should be added a definition of the word "daily" since the word is used consistently and regularly throughout the regulations. CIOMA feels that the term, where used, should be specified to refer to only "those days in which the facility that stores the underground substance is operating".

Also, within the definition of "pipe" there should be a specific exemption which excludes "those pipelines utilized for venting, vapor recovery or other activities where the carrying of a hazardous substance under normal conditions, is not involved."

The definition of "unauthorized release" is entirely too restrictive in that it means "any release or emission of a hazardous substance". The definition should exclude "those levels of release which do not pose a hazard to water quality" and provide some level of exclusionary release consistent with reasonable business operating conditions.

The definitions of "operator" and "owner" should be further expanded and defined since in their present form are too general and do not provide any working guidelines.

CIOMA has also found that several definitions contained within Section 2620 are merely a duplicative effort and do not appear to be necessary since they are defined in Section 25281 of the code.

4. Article 3

Section 2631

Comments

Section 2031(c) provides that all secondary containers shall be constructed of materials sufficient to contain the hazardous substance for a period of at least twice the maximum anticipated time sufficient to allow detection and recovery of leakage from the primary container. This particular section appears to go beyond and is inconsistent with Section 25291(a)(2) of the Code which provides that secondary containment shall be constructed "for the maximum anticipated period of time necessary for the recovery of any released hazardous substance".

Proposal

Providing that the construction materials withstand twice the maximum anticipated time sufficient to allow a detection appears to be beyond the statutory authority of the Board, but also unnecessary to protect the ground water.

Subparagraph (e) of Section 2631 provides that "the secondary container must be able to accommodate the volume of the 24 hour-100 year storm". In and of itself, that particular quotation contained within subsection (e) requires further interpretive intent. Moreover, there are several trailer bills to Chapter 6.7 of the Code which refer to a "25 year storm period." This particular point should be further clarified in the regulations in light of such trailer bills.

Section 2631(f) appears to contain a major inconsistency when compared with Section 25292(a)(3) of the Code. The Code section merely provides that the secondary containment around a primary container shall be large enough to contain at least 100% of the volume of the primary container. Subsection (f) of Section 2631 provides that such secondary containment shall have the ability to contain 110% of the volume of the primary container. This is inconsistent and beyond the statutory authority of the Board.

Section 2632

Comments

Subsections (a)-(e) of Section 2632 call for continuous monitoring including monitoring sensors and above ground alarm systems. Section 25291(b) of the code merely provides that such storage tanks "be designed and constructed with a monitoring system capable of detecting the entry of the hazardous material stored in the primary containment into the secondary containment".

Proposal

Such detailed, continuous monitoring equipment does not appear to be mandated nor required by the Code. Given the protection afforded by the secondary containment device, periodic monitoring and inventory control would be sufficient to detect a leak, and would be considerably more cost effective.

Subsection (d) provides for specific stress requirements of the casing surrounding the underground storage tanks. CIOMA

would suggest that such standards be revised to require those standards consistent with generally accepted engineering practices.

CIOMA further suggests that an above ground alarm system would be unnecessary and duplicative given the consistency and reliability of periodic monitoring. Again, a cost-benefit analysis does not justify this additional requirement.

Section 2633

Comments

With regard to subsection (f) of this section CIOMA suggests that a suction piping system also be included as a system being exempt from the secondary container requirements of this section.

Proposal

A suction piping system would not operate properly if there was a leak in the system. Such systems have been found throughout the industry to be just as reliable in discovering a leak as a pressurized piping system with an on-line detector, producing similar results, and more cost effective in small petroleum dispensing installations.

Section 2634

Comments

Subsection (c) sets forth detailed monitoring devices for the access casing on the tanks, detecting capabilities, and requirements for calibration and maintenance of the monitoring devices. CIOMA feels that such continuous monitoring is not necessary and, further, such monitoring requirements should be

more flexible and consistent with the design capabilities of the entire system. This is particularly true when the operators of the tanks will be routinely performing daily inventory control and can perform periodic monitoring.

Proposal

CIOMA proposes that subsection (c) be amended as follows:

> "(c) Monitoring of each casing described in 2634(b) shall be of a type and frequency to permit the detection and clean up of materials leaking from the primary container before they reach ground water. The determination of monitoring frequency shall be based on an evaluation which considers the following:
>
> 1. Volume of a secondary container in relation to the volume of the primary container.
>
> 2. The amount of time the secondary container must provide containment in relation to the period of time between detection of an unauthorized release and clean up of the leaked materials."

The major problem CIOMA has with subsection (d) of this section is that the Board seems to be emphasizing the daily loss of product. It has been the experience throughout the

industry to find a daily inventory flucuation for reasons other than leakage.

Therefore, CIOMA proposes that subparagraph (1) within subparagraph (e) be either eliminated or revised consistent with industrywide experience and practice. The key to determining whether a leak is present in a system is a development of a trend of inventory loss over a period of more than one day. Using a trend analysis approach, a leak depending on its size, would normally take more than one day to validly detect.

E. K. Williams, a nationally recognized petroleum marketing accounting firm, agrees with CIOMA's analysis and suggestions concerning this subsection.

In the interest of being consistent with CIOMA's suggestions concerning subparagraph (d)(1) CIOMA suggests that the word "delivered" contained in subsection (d)(2) be changed to the word "throughput".

CIOMA finds that the requirements of subsection (e) to be overly burdensome, unnecessary, and inconsistent with standard industry practices. Subparagraph (e)(1) should be amended to provide that "the operator shall attempt to notify the owner ..." and if unsuccessful in notifying the owner shall notify him by certified mail within the next two business days of a loss. CIOMA further questions whether such notification requirements are necessary if an inventory gain is realized.

CIOMA further proposes that subparagraph (e)(2) be amended to provide a four hour inventory record review requirement rather than a two hour requirement. This would be more feasible and more consistent with industrywide practices. Moreover, CIOMA proposes that the Board include language within this subsection providing that if the operator has proceeded in good faith to ascertain the cause of the loss then such operator would not be in violation of this subsection.

Section 2635(f)

Comments

Section 25291(c) of the Code does not mandate the installation of an overflow protection system, but rather, states that such a device is mandated when required by the local agency.

Proposal

For purposes of consistency, CIOMA proposes that the word "shall" be deleted and in its place inserted the word "may".

Section 2635(g)

Comments

For consistency and clarity, CIOMA proposes that subparagraph (g) be amended as follows:

> "The overflow protection system which may be required in subsection (f) of this section shall be satisfied for underground storage tanks containing motor vehicle fuels in which:

1. Both the fluid level is visually monitored and the filling operating is controlled by the facility or delivery vehicle operator during filling of the underground storage tank, or"

The addition of language "or delivery vehicle" as suggested is consistent with industry practices since many deliveries of product are made during hours of the day when the business may be closed and the operator of the delivery vehicle should also be allowed to visually monitor the filling process when the facility operator is absent.

Section 2635(g)(2)

Comments

CIOMA questions the requirement that the available capacity of the receiving tank be 110% of the volume of the entire tank compartment to be delivered.

Proposal

CIOMA proposes that the 110% figure be amended to provide that the receiving tank capacity must be large enough to contain the amount of product to be delivered. This proposal would be both reasonable and consistent with industrywide practices.

5. Article 4

General Overview

In consideration of all the standards and requirements proposed by the Board, the regulations contained in Article 4

pose the most serious threat to the continuing economic viability of the CIOMA membership.

In its implementation of Article 4, the Board has taken the general intent of the Legislature in adopting Section 25292 of the Code, which such intent is clearly prospective in nature, and has attempted to adopt a monitoring program which is clearly remedial in nature and one which would pose such a serious financial burden on small businesses that in many circumstances would force them to either close the tank permanently or, in many circumstances, cease operations altogether.

The Board has also attempted, through the requirements of this Article, to provide levels of water protection consistent with those levels imposed on new tank construction and installation. CIOMA has found no language within Section 25292 of the code which identifies or imposes such stringent levels on existing tanks. Such unnecessary standards are completely inconsistent with the general intent of Section 25292 of the code.

CIOMA further questions whether the soil and water characterization programs imposed by the regulations are consistent with the intent of Section 25292 at least with regard to the monitoring of underground storage tanks containing motor vehicle fuels. Within that Code section there is a clear distinction between the monitoring devices required for those tanks concerning motor vehicle fuels and the requirements imposed by

that section for those underground tanks containing other hazardous substances.

While the regulations contained in Article 4 are most certainly well intended, CIOMA is of the opinion that the quality of California's water surrounding existing tanks could be protected just as effectively with less stringent and more reasonable and cost effective measures.

Section 2640(a)

Comments

This section provides that "the monitoring system must be capable of detecting active and historic unauthorized releases." CIOMA finds no specific language or implied intent in Section 25292 of the Code that makes any reference to nor imposes any requirements for past or historic leaks nor does the language of Section 25292 appear to impose duties on a person or entity for past or historic leaks. Section 25292(a) merely provides that on or before July 1, 1985, the owner shall outfit the facility with a monitoring system capable of detecting unauthorized releases of any hazardous substances stored in the facility. Any reasonable interpretation of such language would find that such a monitoring system must be capable of detecting releases only after implementation of the regulations. The legislative intent is clearly prospective in nature and there is no existing language within the Code that requires a remedial cleanup program.

CIOMA further questions whether the Board has authority to require ground water monitoring since this type of monitoring is listed as a potential alternative method and one which may be required by a county of city agency if consistent with the Board regulations.

Proposal

Consistent with the legislative intent of Section 25292 CIOMA proposes that the language in subsection (a) referring to historic unauthorized releases be deleted and any further language contained in Article 4 making reference to releases occurring in the past also be deleted.

CIOMA also proposes that, consistent with the intent of Section 25292, the language requiring ground water quality measurements be eliminated.

2640(b)

Comments

Section 2640(b) requires the owner to implement multiple monitoring systems pursuant to sections 2641-2647. Section 25292(a) requires the owner to outfit the facility with a monitoring system. Subsection (b) of that code section gives the Board authority to implement alternative methods of monitoring the tank. The language of the Code is clear in that it provides for a singular monitoring system capable of detecting unauthorized releases. The Board, on the other hand, is requiring the implementation of multiple monitoring systems described in sections 2641-2647. The implementation of multiple

monitoring systems as proposed by the Board exceeds the legislative mandate of Code section 25292.

Proposal

CIOMA proposes that the language in subsection (b) of the proposed regulations referring to the implementation of multiple monitoring systems be amended to provide for the implementation of a single monitoring system pursuant to and as described in section 2641-2647 and pursuant to the local agency.

2640(c)

Comments

CIOMA again questions whether the legislative intent of Article 25292 mandates a determination whether prior use of the storage tank has resulted in unauthorized release. Further, this particular subsection is unclear as to whether such a determination is to be made by a previous operator and/or owner or the present operator and/or owner. If the determination is to be made by a previous owner and/or operator, it may be clearly unenforceable. In any event, the language of subsection (c) should afford the present owner and/or operator more consistent and clear guidance.

Proposal

CIOMA proposes that the language in this subsection requiring that the initial monitoring be capable of determining if prior use of the underground storage tank has resulted in an unauthorized release be deleted.

CIOMA further proposes that language of subsection (c) provide a clear set of guidelines to the present owner and/or operator in determining who is responsible for determining prior unauthorized releases consistent with general California law.

2540(e)

Comments

Again, CIOMA feels that the Board has stepped beyond its authoritative boundaries by requiring that each facility implement each and every alternate monitoring method provided in sections 2642-2646 of this article.

Proposal

CIOMA proposes that this subsection be amended to provide that the operator shall implement an appropriate monitoring method as specified in this article. CIOMA feels that such an amendment would be consistent with the intent of 25292.

Section 2640(f)

Comments

This subsection provides that additional monitoring methods of the same equivalency as required in Section 2640 may be approved by local agencies and that such requests are subject to the variance procedures of Article 8.

Any additional monitoring method approved by a local agency would be presumed to be consistent with the alternate monitoring methods proposed by the Board as well as being consistent with the intent of the enabling legislation. Requiring that such an alternate monitoring method be subject to the cost and

procedures of a variance imposes an unnecessary economic burden onthe owner/operator implementing the alternative method. Moreover, such a requirement is inconsistent with the general intent of the enabling legislation which sought to develop efficient cost effective monitoring programs.

Proposal

CIOMA proposes that if such additional monitoring methods were to be utilized by a facility consistent with the requirements imposed by this section, then the owner/operator of that facility not be burdened with additional costs and fees to the local agencies considering such alternate methods.

Section 2640(g)

Comments

This subsection requires that all owners of underground storage tanks shall, if feasible, install and an assurance monitoring system which monitors ground water beneath the underground storage tank. In reviewing the provisions of Code section 25292, CIOMA finds no requirement that an assurance monitoring system be implemented. Such a requirement appears to be inconsistent with the intent of the enabling legislation.

Proposal

CIOMA would propose that subsection (g) be deleted.

Section 2640(i)

Comments

This subsection requires that all exploratory borings that are not converted to a monitoring well be backfilled with

bentonite grout or slurry. CIOMA is concerned that a bentonite slurry is too undefined and there is a great potential for an improper seal to be installed.

Proposal

CIOMA proposes that all exploratory borings or soil sample collection borings be abandonded in accordance with the California Department of Water Resources Bulletin #74, Well Standards.

Section 2642(a)

Comments

Subsection (a) requires that all owners of existing storage tanks implement a testing program pursuant to subsections (c)-(g) of this section. Upon reviewing Health and Safety Code section 25292 CIOMA finds no legislative mandate requiring the implementation of a testing or multiple testing programs. The statute merely refers to the implementation of a monitoring program capable of detecting unauthorized releases. Moreover, Code section 25292 provides for the implementation of a monitoring program or alternative monitoring program and does not require the implementation of a list of testing programs to be implemented by the owner.

Proposal

CIOMA would propose that subsection (a) be amended to require the owner to implement a singular monitoring system consistent with the legislative mandate of Code section 25292.

Section 2642(b)

Comments

This subsection provides exemptions from implementing a testing program if the tests can be "performed without significant excavation." Since a vast majority of underground storage tanks are beneath asphalt or concrete of significant thickness any type of excavation would be "significant". Moreover, in most cases, existing tanks were not originally constructed to allow for a tank tightness test without significant excavation. Also, most tanks were not constructed to allow isolation of the tank for testing purposes. Bearing this in mind, CIOMA estimates that the real cost of implementing a tank tightness test program, including concrete or asphalt removal, soil removal, soil replacement, and concrete or asphalt replacement will be at a minimum of approximately $1,500-$2,000 per tank, not the $350-$500 estimate per tank as provided in the fiscal impact statement prepared by the Board.

Proposal

CIOMA proposes the language "significant excavation" be further defined to provide that any excavation costing more than $500.00 as estimated by a licensed California contractor would be significant. CIOMA also proposes that the language "significant excavation" be defined to include initial concrete or asphalt removal, soil removal, back filling, and concrete or asphalt replacement. CIOMA further proposes that a subparagraph beneath subsection (b) numbered (3) be added to

provide that if a monitoring system is implemented consistent with these regulations, then precision testing of the tank would not be required.

Section 2642(d)

Comments

This subsection sets forth various inspection requirements based on the construction of the underground storage tank. Corrosion resistant tanks include fiberglass reinforced plastic, (FRP) cathodically protected steel, and FRP-clad steel tanks. Typically, FRP tanks have a 30-year warranty. For this reason, the annual inspection beginning 15 years after tank installation as provided in Category B is an unnecessarily short period of time. CIOMA would also recommend that the annual testing beginning 10 years after tank installation for unclad steel tanks also be lengthened. CIOMA also questions the rationale of this section since if a another monitoring alternative is adopted by the facility, then a tank tightness test should not be required.

Proposal

CIOMA proposes that for Category A the 10-year period be increased to 15 years and for Category B the 15-year period be increased to 25 years. CIOMA further proposes adding language to the section to provide that if a another monitoring alternative is adopted by the facility then the tank tightness test as required by this subsection be eliminated. CIOMA further proposes that for Categories A and B, the tanks be tested within

5 years of permit issuance and every fifth year after the 15th and 25th years depending on tank type.

Section 2642(e)

Comments

Section 25293 of the Code mandates that "records shall be kept in sufficient detail to enable the local agency to determine that the operator has undertaken all monitoring activities required by the permit to operate." This subsection requires the tank owner to provide the agency with a report of the procedures used and the test results. Such required reports appear to be inconsistent with the statute and are unnecessary under the statutory mandate.

Proposal

CIOMA proposes that subsection (e) be amended to eliminate the requirement that a report be completed and submitted to the local agency and that this subsection be amended consistent with Health and Safety Code Section 25293. CIOMA further proposes that the underground tank owner provide the local agency with a report only if the tank tightness test indicates a leak or loss of product. The facility would, however, record both positive and negative results.

Section 2642(g)

Comments

This subsection requires the results of testing to be reported by the tank owner to the local agency within 30 days of completion.

Proposal

CIOMA proposes that the results of any such tests only be reported to the local agency if positive results are reached. The facility would, however, record both positive and negative results.

Section 2642(h)

Comments

This subsection requires that all pressurized portions of an underground storage tank be monitored utilizing an on-line pressure loss detector and flow reduction device. And, the detector shall be connected to a visual or audible alarm system. CIOMA believes that the provisions of this subsection to be inconsistent with those contained in subsection (f) of section 2633. Section 2633(f) does not require a detector to be connected to a visual or audible alarm system if the flow restriction device provides at least a 50% reduction from normal flow rates.

Proposal

CIOMA proposes that subsection (h) be deleted and the requirements of subsection (f) of 2642 be utilized.

Section 2643

General Comments

In reviewing the inventory control procedures and requirements mandated by this section, CIOMA questions the legal propriety and practicality of requiring owners of underground storage tanks to implement such procedures.

Section 2643(a)-(b)

Comments

Subsections (a) and (b) of this section requires owners to implement an inventory control program and further provides exemptions for such owners from inventory control. The use of the word "owners" is inconsistent with Health and Safety Code Section 25292(b)(3) which requires inventory implementation by the "operator". Under most circumstances, the operator of the facility and not the owner would be the person responsible for daily activities and responsibilities associated with inventory control.

Proposal

CIOMA proposes that the reference in these two subsections to "owner" be deleted and the word "operator" be substituted in its place.

Section 2643(c)

Comments

This section requires that all tanks shall be "individually monitored". In many facilities, the individual monitoring of each tank is not feasible if the underground tanks are manifolded or connected. This section further requires that inventory control and reconciliation be done "daily". In many cases "daily" inventory control would be unnecessary to implement when a facility is not open for operations every day. This section further requires that meters used for daily inventory control be approved for use by the State Department of Weights and

Measures. As a practical matter, individuals licensed by the State customarily adjust such meters.

Proposal

CIOMA proposes that in a situation where tanks are manifolded or connected, the system would be inventoried and then such inventory would be reduced to the smallest connected capacities. CIOMA further proposes that the word "daily" be amended to provide for "operating days" except for commercial fueling facilities for which the word "daily" shall mean Monday-Friday except for holidays. CIOMA further proposes amending the last sentence of subsection (c) to be amended to include the language "or shall be approved by a person licensed by the State.

Section 2643(d)

Comments

Subsection (1) of this subsection provides that the quantity measurements must be capable of measuring to one-eighth (1/8) of an inch. CIOMA has found that tank sticks are not graduated to such small degrees and, further, such small degrees of measurement are both unnecessary and impractical given the large volume of substance being measured. Subsection (2) provides that quantity measurements shall be performed during periods of no tank additions or withdrawals. Industry wide practice would find this requirement both impractical and virtually impossible to undertake. Subsection (3) provides that such quantity measurements must be performed by the tank owner, opera-

tor, or other managerial personnel. It is common in the industry to have tank gauge stickings done by personnel other than the owner/operator, or management. Such a requirement would pose an unnecessary burden on the operator of the facility. Subsection (4) provides that quantity measurements shall be based on an average of two readings if gauge measurements are used. CIOMA finds this requirement to be unnecessary when a single gauge measurement is customarily done with reproducible results.

Proposal

CIOMA proposes that subsection (1) be amended to eliminate one-eight (1/8) of an inch measurements and substitute in one-quarter (1/4) measurements. Subsection (2) should be eliminated in its entirety. The word "managerial" contained in subsection (3) should be eliminated. Subsection (4) should be amended to provide that single gauge measurements are sufficient if done with reproducible results.

Section 2643(e)

Comments

This subsection requires that wholesale meter delivery records be verified using a four-step procedure which utilizes the criteria described in section 2643(d). CIOMA, based on industry wide experience, finds such requirements both impractical and unnecessary. An effective use of an inventory control program at the facility would not require tank stickings and delivery reconciliation when a delivery is metered off the truck or at the truck terminal. Moreover, using tank stickings

as a verification of proper delivery is often times difficult since most deliveries are not temperature corrected and there is a certain degree of sloshing which occurs during a tank truck delivery. Furthermore, reconciling deliveries through tank stickings would require, in most cases, the closing of those facilities selling motor vehicle fuel since such reconciliations would be inaccurate if product sales took place during the delivery process. CIOMA estimates that each delivery takes approximately 30-45 minutes which would virtually require the facility to close down for at least that length of time.

Proposal

CIOMA proposes that this subsection be deleted in its entirety.

Section 2643(f)

Comments

The general import of this subsection refers to and continually emphasizes the "daily" loss of product. CIOMA has found it to be the experience throughout the industry to find a daily inventory fluctuations for reasons other than tank leakage. The key to determining whether a leak is present in a system is the development of a trend of inventory loss over a period of more than one day. Using a trend analysis approach, a leak depending on its size would normally take more than one day to validly detect. CIOMA membership has discussed the daily inventory loss requirements as provided in this subsection with personnel of E. K. Williams, industry

inventory and accounting experts, and they are in agreement with the general import of CIOMA's comments concerning this subsection.

Proposal

CIOMA proposes that the requirements of this subsection be amended to be consistent with a trend analysis approach to inventory fluctuations. CIOMA further proposes that consistent with these comments, subsection (l) of subsection (f) be deleted.

Section 2644(c)

Comments

This section requires that all owners of existing underground storage tanks drill slant borings for the testing of the soil surrounding the tank. This requirement is inconsistent with the language prescribed in Health and Safety Code section 25292 which only requires an "analysis of soil borings at the time of initial installation of the well". In many instances, discharges from an underground storage tank migrate laterally and not vertically. Situations where a hazardous substance would migrate vertically through the unsaturated zone with little or no lateral migration would be extremely rare. Almost all unconsolidated and semi-consolidated materials are deposited in nearly horizontal layers and preferential permeability pathways are established in the direction of least resistence. Evidence gathered from past subsurface spill investigations supports this theory that fluids in the unsaturated zone migrate both vertically and laterally. Therefore, the requirement for slant borings is unnecessary given the likelihood of lateral

migration and, further, since such borings are not mandated by the Code.

Proposal

CIOMA would propose that this subsection be deleted in its entirety.

Section 2644(d)

Comments

This subsection requires that for those sites where slant drilling is precluded, at least one vertical boring shall be drilled on each long dimensional side of a tank. There does not seem to be any technical justification for drilling two vertical holes adjacent to each tank, one on each side. The likelihood of encountering a lower permeability zone within a 50 foot interval below the invert of the tank is extremely high. When this low permeability zone is encountered the leaking fluid will tend to move laterally instead of vertically increasing the probability of detecting leaking fluid in a soil monitoring program.

Proposal

CIOMA proposes that this subsection be amended to delete one boring and allow for one soil boring to be drilled on the assumed downgradient side of the tank.

Section 2644(e)(2)

Comments

This subsection provides that soil samples shall be collected, transported, stored, and analyzed according to approved EPA methods. While accepted EPA procedures are, in

most cases, reasonable, not all methods are approved by the EPA. In some cases the EPA detection limits are well above those that are acceptable to the regulatory agencies. Consequently, other methods have been developed which may be as suitable as the use of EPA methods.

Proposal

The analysis required under this subsection should be either approved EPA methods or methods with lower detection limits that have been demonstrated to be suitable for this type of analysis.

Section 2644(e)(3)(C)

Comments

This subsection requires that samples shall be analyzed for one or more of the most conservative constituents that have been stored in the underground tank. CIOMA finds that the wording "conservative constituents" is vague and unclear.

Proposal

The determination should be based upon the analysis of the constituents that have been stored in the tank and those constituents with respect to toxicity, persistence, and mobility. After these criteria have been evaluated, a determination of which criteria should be made.

Section 2644(e)(4)

Comments

This subsection requires that all soil borings be logged in detail and described by a registered civil engineer or registered geologist consistent with the Unified Soils

Classification System. Practical experience indicates soil sample identification is rarely performed by registered engineers, geologists, or certified engineering geologists. This soil sample identification can be just as effectively performed by non-registered engineers, geologists, soil scientists, and other professionals. Moreover, such other professionals are commonly more actively involved and may be better qualified to implement such a program.

Proposal

CIOMA proposes that this subsection be amended to provide that such soil sample identification procedures be performed by competent personnel under the direction of a registered individual competent in soils engineering or a certified engineering geologist.

Section 2645(b)

Comments

This subsection provides certain exemptions to owners of existing underground storage tanks from implementing a vadose zone monitoring system. CIOMA has found that for ground water depths of less than 50 feet, ground water monitoring is a proven and successful method of detecting tank leaks. There are several types of vadose zone monitoring systems, many of which are complex to implement and unreliable in results.

Proposal

CIOMA proposes that a subsection (5) be added to subsection (b) to provide that for those tanks which contain fluids that are immiscible in water and which have a density less than

water, and which the depth of the ground water is within 50 feet of the ground surface be exempted from vadose zone monitoring implementation. CIOMA also proposes that the Board grant flexibility to the local agencies based on the environment surrounding the tank to minimize the use of vadose zone monitoring and maximize the use of actual physical ground water testing. CIOMA further proposes that an additional subsection (6) be added to subsection (b) to provide that if the soil around the tank has been contaminated by other leakage, whether that be surface spillage or prior tank leakage, and the use of vadose monitoring would be inconclusive to adequately monitor and detect unauthorized leaks then the owner would be exempted from implementing a vadose zone monitoring system.

Section 2645(f)(1)

Comments

This section provides that before a vapor monitoring method is implemented it shall be adequately demonstrated at each individual site that vapor would actually be detected by the installed system. This section would require that the demonstration technique be implemented at every site location. This would appear to be an unnecessary process since, in many locations, identical size tanks contain chemically similar products and are employing identical monitoring systems.

Proposal

CIOMA proposes that this subsection be amended to provide for a single demonstration of a vapor monitoring system for multiple-tank installations where a chemically common or similar

product is stored and a similar geologic backfill material is used.

Section 2645(h)

Comments

This subsection provides that vadose zone monitoring shall be continuous and if such continuous monitoring is not feasible then weekly monitoring shall be performed. CIOMA has found that a continuously operating vadose zone monitoring system has no proven reliability. Moreover, providing for weekly monitoring may be equally as unreliable. Section 2643 of these proposed regulations requires the operators of motor vehicle fuel tanks to implement daily inventory procedures. Such inventory procedures would establish a major product loss well before a vadose zone monitoring system would reveal such loss. If the product loss was minor, monthly vadose zone monitoring would be as effective and more cost efficient.

Proposal

CIOMA proposes that this subsection be deleted in its entirety.

Section 2646(c) & (d)

Comments

Subsection (c) requires a combination of ground water monitoring and vadose zone monitoring. Subsection (d) requires a combination of vapor monitoring as well as ground water monitoring. Such dual monitoring techniques are beyond the legislative mandate of Health and Safety Code section 25292 which requires the owner only to outfit the facility with a

monitoring system capable of detecting unauthorized releases of hazardous substances. Other than inventory control, the most reliable and most cost effective method for monitoring for underground tank leakage is through the use of a ground water monitoring well. The owner or operator of an existing underground tank should be given the option of placing a ground water monitoring well in lieu of a vadose zone monitoring system.

Proposal

CIOMA proposes that the requirement of multiple monitoring systems provided in the two subsections be eliminated and language be added to the section to provide the owner with the option of implementing the most reliable and cost effective method as well as giving the owner the option of implementing ground water monitoring wells.

Section 2646(e)(1)

Comments

This subsection sets forth requirements for minimum spacings, distances, and locations of ground water monitoring wells. The requirements found in this subsection incorrectly assume that for each underground storage tank the product contained within the tank is the same, the rate of ground water movement and its depth is the same, and the permeability of the geologic sediments surrounding the tank are the same. Daily inventory control as well as other alternative monitoring methods would detect a rapid rate of product loss long before the leakage could be discovered by ground water wells. In situations where a slow rate of loss of product develops, well spacings of at

least 40-45 feet would be more than adequate. This subsection further states that "if it can be demonstrated that the radii of influence of fewer monitoring wells overlap and that the entire area of the underground storage tank or facility is under the influence of at least one well under all anticipated and hydraulic conditions, fewer wells may suffice". If fewer wells could suffice, then the owner should have the ability to implement such a program without having to comply with the variance requirements of Article 8 of these proposed regulations.

Proposal

CIOMA proposes that this subsection be amended to change the 30 feet designation for well spacings to 45 feet. CIOMA would further propose that this subsection be modified to require that a sufficient number of monitoring wells be constructed in the vicinity of the tank or tank cluster to adequately monitor the potential unauthorized leak. The number and spacing of the required wells should be determined by a registered engineer, geologist, or certified engineering geologist retained to implement the program.

Section 2646(e)(2)

Comments

This section requires that three wells be constructed with one well being located such that it represents the best estimate of the downgradient direction. CIOMA finds that the need for three wells per tank is unnecessary in most conditions and should be reduced to one or two wells depending on knowledge of ground water flow conditions.

Proposal

CIOMA proposes that this section be modified to require that a minimum of one well be located in the downgradient direction and that other wells be constructed after the need has been demonstrated by the local agency.

Section 2646(e)(3)

Comments

This subsection requires the ground water monitoring wells be constructed with a minimum four inch inside diameter casing. In the majority of circumstances, it is unnecessary for wells to be this large in diameter. Moreover, such large diameter wells are often more difficult to install and pose operational problems. Smaller diameter wells are just as satisfactory for the extraction of adequate water samples to detect unauthorized releases. This is especially true when balers are being used to monitor for presence of light hydrocarbons floating on the water's surface.

Proposal

CIOMA proposes that two inch minimum inside diameter casing be required for ground water monitoring wells.

Section 2646(e)(4)

Comments

This section requires that all wells shall be provided with the minimum surface seal necessary to prevent infiltration of surface water. CIOMA has found that where the depth to ground water is less than five feet below grade, the surface seal is less critical since other avenues for surface infiltration are

readily available. In such situations, a surface seal of at least the thickness of the surrounding pavement, or if no pavement exists, six inches would provide adequate protection from surface infiltration. With a properly designed monitor well system, the ground water surface can then be visually monitored for the presence of such substances as free hydrocarbons.

Proposal

CIOMA proposes to amend this subsection to provide that in wells where the depth to ground water is greater than five feet, the seal shall extend to a depth of at least five feet. Where the depth to ground water is less than five feet, the surface seal shall be at least the thickness of the surrounding pavement or six inches, whichever is greater.

Section 2646(e)(5)

Comments

This section requires that monitoring wells be equipped with a pump capable of drawing the ground water level down to an elevation ten feet below the base of the surface seal. The monitoring well should be designed and constructed in a manner that with a minimum amount of pumping and purging a representative formation sample can be obtained which will indicate whether or not apparent leakage is occurring. Monitoring for motor vehicle fuel leaks has historically involved the use of a clear bailer in an unpurged monitoring well to look for floating product.

CIOMA proposes that monitoring wells for motor vehicle fuels be excluded from the purging requirement and monitoring shall

consist of collecting a surface water sample using a clear bailer to detect floating product.

Proposal

CIOMA proposes modifying this subsection to provide that an adequate purging should be completed prior to sampling in an effort to obtain a representative formation sample to indicate whether or not an unauthorized leak has occurred.

Section 2646(e)(6)

Comments

This section requires monitoring wells extend at least ten feet below the tank invert and be perforated from the base of the surface seal to the bottom of the well. Drilling a monitoring well to a level of at least ten feet below the tank invert, and then perforating the well along its entire length, could provide a means for leaked material to migrate through the well and into the ground water. In cases where a competent aquitard and a perched water zone underlie the site of the proposed monitoring well, the well should end at the perched water and should not puncture the aquitard.

Proposal

CIOMA proposes that this subsection be amended and read as follows:

"In the absence of any competent aquitard or perched ground water zone underneath the tank, the ground water monitoring well shall extend to an elevation that is at least ten feet below the tank invert or to the ground water-air interface, whichever is the lesser. In the event a competent aquitard or perched

ground water underlies the tank, the ground water monitoring well shall extend only to that aquitard or perched water zone. In no event should the ground water monitoring well puncture a competent aquitard underlying the regional water table. The well shall be perforated at the air-water interface of perched water or the ground water and at points above and below if necessary to account for any seasonal or other fluctuation of ground water levels."

Section 2646(f)

Comments

This subsection provides that ground water shall be monitored at least once per week from each well with more frequent monitoring as may be required by the local agency. CIOMA finds no real advantage in requiring weekly well testing. Ground water flow rates through unconsolidated fine to medium grained materials are customarily less than ten feet per month or 100 feet per year. As a result, water movement during a one week period may be less than a few feet. Therefore, the one week frequency is unnecessary in most circumstances. In those cases where the substance in the tank, the character of the underlying strata, and the actual ground water flow rate justify more frequent sampling, then a weekly monitoring program could be implemented by the local agency.

Proposal

CIOMA proposes this subsection be modified to provide that ground water shall be monitored monthly and more frequently as required by the local agency taking into consideration the

substance stored in the tank, the character of the underlying strata and the apparent rate of the ground water flow beneath the tank.

Section 2647

General Comments

Section 2647 requires that all owners of existing underground storage tanks implement an assurance ground water monitoring system. CIOMA finds no specific language contained in Health and Safety Code 25292 which requires the implementation of an assurance ground water monitoring system. Moreover, the enabling legislation does not require the establishment of ground water quality but rather the protection of ground water quality by detecting whether or not leaks are occurring.

Section 2647(b)(2)

Comments

This subsection exempts owners of existing underground storage tanks from implementing an assurance ground water monitoring system if they can demonstrate that the highest ground water level expected during the life of the underground storage tank is greater than 200 feet in depth. In most cases, a 200 foot ground water well would be ineffective in rapidly detecting a leak. Requiring a well of greater depth than 50 feet would be an extremely ineffective method for early leak detections since the first appearances of the product at the ground water monitoring point may be months or even years depending on the character of the underlying sediment, the type of product stored, and the rate of leakage. Moreover, standard drilling practices

such as auguring are commonly effective only to depths of 100-150 feet.

Proposal

CIOMA proposes that this subsection be amended to provide that owners be exempt from the construction of ground water wells if the highest ground water level is expected to be more than 50 feet from the ground's surface.

Section 2647(b)(3)

Comments

This subsection exempts owners from assurance ground water monitoring if physical obstacles prevent the positioning and operation of drilling equipment within 500 feet of the tank or tank cluster. In reviewing this subsection, CIOMA can envision a situation whereby the drilling operation for assurance ground water monitoring could only be accomplished on the property of another. Such a situation would involve both legal and practical complications.

Proposal

CIOMA proposes that this subsection be amended to provide a further exemption from assurance ground water monitoring if the positioning and operation of drilling equipment interferes with the property rights of another.

Section 2647(c)(1) & (2)

Comments

Both of these subsections require assurance ground water monitoring wells be installed at the underground tank facilities, the depth of such wells depending on ground water elevation.

Requiring such assurance ground water monitoring wells is not mandated by Health and Safety Code section 25292 which provides ground water monitoring as a monitoring alternative. Moreover, as CIOMA has stated in comments to earlier sections, the installation of ground water wells at depths greater than 50 feet is not the most effective method for early detection of product leakage. Furthermore, there are attendant difficulties in installation and operation of wells which depth exceeds 50 feet.

Proposal

CIOMA proposes that these two subsections be deleted in their entirety.

Section 2647(d)

Comments

This subsection requires the owner to document ground water elevation either through existing wells or exploratory borings. CIOMA has found that without such additional expense for documentation, often, ground water elevation can be determined by a hydrogeologist or other professional personnel based on the location and density of water wells, the proximity of surface water, and a general overview of the regional geology and topography. CIOMA would also like to reference here earlier comments made concerning well installation where ground water depths exceed 50 feet.

Proposal

CIOMA proposes that this subsection be amended to allow for written, certified estimates of ground water depth from a

hydrogeologist or other professional personnel, where practical, in lieu of existing well analysis and exploratory borings.

Section 2647(d)(1)

Comments

This subsection requires more than one exploratory boring where a facility occupies a "large area". CIOMA find the language in the subsection referring to "large area" to be vague.

Proposal

CIOMA would propose amending this subsection to provide for more than one exploratory boring when the facility occupies an area larger than one acre.

Section 2647(d)(5)

Comments

This subsection requires exploratory boring to be drilled to a minimum depth of 200 feet if ground water is not encountered at a depth of less than 200 feet. CIOMA would reference here comments made in earlier sections referring to the technical inaccuracies of ground water wells where ground water depth exceeds 50 feet.

Proposal

CIOMA proposes deleting the 200 foot requirement and substituting in 50 feet.

Section 2647(d)(6)(A)

Comments

As CIOMA has discussed in its earlier sections ground water monitoring should not be required where the depth to ground water is greater than 50 feet. Further, as stated in earlier sections,

two inch ID casing is sufficient for monitoring wells taking into consideration both efficiency and ease of installation.

Proposal

CIOMA proposes that the 200 foot figure in subsection (6) be deleted and in its place be substituted 50 feet. CIOMA would propose that subsection (A) be amended to allow for two inch ID casing.

Section 2647(d)(6)(B)

Comments

This subsection established both the depth and degree of perforation of exploratory wells. As CIOMA has stated in comments to earlier sections, the installation of a well through a competent acquitard and perforating the well through essentially its entire length could result in the vertical communication of fluid between distinct water-bearing zones.

Proposal

CIOMA proposes that this subsection be amended to provide for perforation of the exploratory well only from some point above the air-water interface to a point either below the historical low ground water level or to the top of a competent aquitard.

Section 2647(d)(6)(C)

Comments

This subsection requires the well to extend to the botton of the aquifer and to be perforated from the top of the aquifer to the bottom of the well. This requirement to totally penetrate a confined aquifer is extremely restrictive and not necessary.

As the presence of a confined aquifer suggests upward, vertical hydraulic gradient, the likelihood of contaminants moving downward from a leak is minimized by both the hydraulic gradient and the presence of a confining zone beneath the tank and above the aquifer.

Proposal

This section should be modified to allow for only a 20 or 30 foot perforation zone immediately below the aquiclude at the top of the aquifer. In addition, there should be a requirement that there is an adequate seal separating the confining zone from the unconfined material above it.

Section 2647(d)(7)

Comments

This subsection requires the exploratory boring to be back filled and sealed with bentonite, gravel or slurry. As mentioned in comments to earlier sections, CIOMA is concerned that a bentonite slurry is too undefined and there is an increased potential for an improper seal.

Proposal

CIOMA would propose amending this section to provide that all exploratory borings or soil sample collection borings should be abandoned in accordance with California Department of Water Resources Bulletin No. 74, Well Standards.

Section 2647(e)

Comments

This subsection sets forth requirements for the analysis procedures of well samples.

Proposal

In order to ensure a representative ground water sample, CIOMA would propose that sampling protocol follow the procedures set forth in the EPA's manual for ground water monitoring at solid waste disposal facilities, Document SW-611, pages 20-21, 1977, or approved State methods.

Section 2648(b)

Comments

This subsection requires that all materials used to gravel pack or back fill wells and form seals be tested to determine their acceptability with regards to subsection 2648(a). While in theory this would be an ideal procedure. In reality, it would not be practical given the materials normally acquired near the job site. It would be almost impossible to sample and analyze all materials going into a well prior to installation.

Proposal

CIOMA proposes that this subsection be amended to require that well materials be retained after construction for testing should anomalous results be found which necessitate the analysis.

Section 2648(d)

Comments

This subsection requires all well casings, casing fittings, screens, gravel packs, and all other components to be placed into the well to be thoroughly cleaned before installation. CIOMA again recognizes while in theory this would be an ideal practice, in all practicality it would be impossible to implement.

Proposal

CIOMA proposes that this subsection be amended to provide that materials going into the well should be cleaned when appropriate to minimize the potential for cross-contamination between borings at project site.

Section 2648(g)

Comments

This subsection requires samples of additives, cement, bentonite, and grouts be analyzed for contaminating or interfering constituents. CIOMA believes that this is an unnecessary requirement and an unnecessary cost to be borne by the operator or each facility since the chances of introducing external contaminants into the well is minimal. Samples could be retained for further analysis, if necessary.

Proposal

CIOMA would propose that this subsection be amended to require the contractor to retain samples of additives, cement, bentonite, and grout for future analysis should a contamination problem develop in the well.

Section 2648(m)

Comments

This subsection requires the owner to permanently attach to the well casing various information concerning the well. CIOMA finds this requirement to be both impractical and unnecessary.

Proposal

CIOMA proposes that this subsection be amended to require the operator to retain a copy of the exploration report for review and inspection by the local agency, when requested.

6. Article 5

Section 2650(d)

Comments

Subsection (d) states that unauthorized releases requiring immediate reporting are defined in Section 2652 of this Article. Without a more precise definition of the word "immediate" CIOMA finds this subsection both vague and unenforceable.

Proposal

CIOMA proposes that the word "immediate" in subsection (d) be deleted.

Section 2651(a)

Comments

This subsection makes continuous reference to a "hazardous" substance. The word "hazardous" is found continuously throughout the Board's draft regulations. While the Board has defined "hazardous substance" the Board has failed to define nor have they adequately clarified exactly what the word "hazardous" means in its relationship to a release.

Subsection (3) provides that the hazardous substance released can be cleaned up within eight (8) hours. CIOMA finds this particular subsection vague in that it is unclear whether

the eight hour period is during normal operating hours or whether the eight hour period is during any given day or days. Based on industry wide experience, CIOMA further finds that such a period of time is unreasonably short.

Proposal

With regard to subsection (a) and other sections within the draft regulations which make reference to the word "hazardous" in its relationship to a "release", CIOMA would propose that it be more precisely defined and clarified. With regard to subsection (3) CIOMA proposes that the eight hour period be increased to 24 hours and, further clarification as to when the 24 hour period begins.

Secton 2651(b)

Comments

This subsection provides in pertinent part that all recordable unauthorized releases "shall be contained ...".

Subsection (a) of this section provides that a recordable unauthorized release is one which is contained by the secondary containment system. Therefore, the words "shall be contained" are unnecessary and should be deleted.

Subsection (2) requires the permittee to report the method of clean up and cost. CIOMA feels that reporting the cost of clean up was not mandated by the enabling legislation and is therefore unnecessary. CIOMA feels that subsection (3) requiring the permittee to report the method and location of disposal of the released hazardous substance to be duplicative, unnecessary,

and beyond the Board's authority. This information is routinely sent to the Department of Health Services, as is a copy of the hazardous waste manifest.

Proposal

CIOMA proposes that the word "hazardous" as it refers to a release be defined and further clarified. The language "shall be contained" in subsection (b) be deleted. Subsection (3) should be deleted in its entirety.

Section 2652

Comments

With reference to the comments made in the previous section, the word "immediate" is both vague and unenforceable. Subsection (a)(1)(B) provides that the unauthorized release shall be reported if the released hazardous substance increases the hazard of fire or explosion. This requirement is not mandated by the enabling legislation and is therefore beyond the Board's statutory authority. Subsection (b) requires reporting of unauthorized releases meeting the criteria of subsection (a) that "should have been detected". Since an undetected unauthorized release could never be reported, CIOMA is unclear about the intent of the Board in inserting such language. Subsection (b) further provides that the operator or permittee shall notify the local agency, Office of Emergency Service, and the Regional Water Control Board. Given the already voluminous amount of paperwork required by these regualations, CIOMA would suggest that such reporting only be required to be made to the

local agency. Subsection (c)(3) requires the reporting of the cost of clean up. Providing for the cost of clean up appears to be beyond the Board's authority and such a requirement should be deleted. Subsection (e) provides for review of the permit by the local agency when it is determined that the undergound storage tank is "unsafe". As used in this subsection the word "unsafe" is both vague and unenforceable. Subsection (g) requires the permittee to investigate the extent of soil and water contamination as may be required by "other laws and regulations". If such "other laws and regulations" are in existence, CIOMA finds this subsection to be unnecessary.

Proposal

The word "immediate" in the section heading should be deleted. Subsection (a)(1)(B) should be deleted in its entirety. Subsection (b) should be amended to provide for reporting to the local agency only. The language "should have been detected" in subsection (b) should be deleted. The word "unsafe" should be further defined and clarified. Subsection (g) should be eliminated in its entirety.

Section 2661

Comments

Subsection (c) provides that if the interior lining of the tank is to be repaired then a demonstration that tank failure was not the result of any one or more of several conditions shall be made. For purposes of uniformity, CIOMA would propose that the repair work be in conformance with nationally accepted

engineering practices. This would conform to the approach taken in section 2662(d). Consistent with these comments, CIOMA would suggest that subsection (d) also be amended to provide for interior lining repair consistent with accepted engineering practices.

Proposal

Subsections (c)(1) - (3) should be deleted in their entirety and subsection (c) should be amended as follows:

> "If interior lining is the proposed repair method, the suitable criteria described in API Recommended Practice 1641 must be met."

CIOMA would propose that the second full sentence within subsection (d) be amended as follows:

> "If a serious corrosion problem exists, an interior lining repair shall be allowed pursuant to the suitable criteria described in API Recommended Practice 1641. If it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structual integrity or containment ability of the tank."

Section 2663

Comment

After any repair, this section requires the primary container to meet the standard installation test provided for in the Flammable and Combustible Liquids Code adopted by the National Fire Protection Association.

Proposal

CIOMA proposes that subsections (a) and (b) be amended to provide that such testing shall be consistent with the latest adopted edition of the Flammable and Combustible Liquids Code.

7. Article 7

Section 2670

Comments

Subsection (e) provides in pertinent part that "during the period of time between cessation of waste storage ...". For purposes of clarity and conformity, the word "waste" should be deleted and other more relevant language substituted in its place.

Subsection (f) provides that the temporary or permanent closure proposal shall be submitted to the local agency "at least 45 days prior to cessation". Based on industry wide practices, providing such proposal at least 45 days prior to cessation is impractical and may not be possible. If a service station's operations were subject to a lease, under California law, the lessor or lessee may terminate the lease pursuant to a 30-day notice. Under such circumstances, it would be impossible to provide the required notice.

Proposal

CIOMA proposes that the word "waste" in subsection (e) be deleted and the words "hazardous materials" be substituted in its place. CIOMA further proposes that the 45-day requirement in subsection (f) be deleted and the subsection be amended to

require submission of the closure proposal prior to closure, if possible.

Section 2671

Comments

Subsection (b)(4) requires the owner or operator to seal all fill and access locations and piping utilizing locked caps and concrete plugs. If the required venting were also sealed in this manner, it could create a potential safety hazard.

Proposal

CIOMA proposes that subsection (b)(4) be amended as follows:

> "Except for required venting, all fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs."

Section 2672

Comments

Subsection (b) sets forth requirements for the removal of underground storage tanks. These requirements appear to be beyond the Board's statutory authority and are adequately provided for in pertinent sections in the Health and Safety Code and the regulations of the Department of Health Services. Subsection (c) sets forth requirements for the closure of underground storage tanks in place. CIOMA also feels that such procedures are adequately set forth in regulations adopted by the Department of Health Services for tank closure. Also with regard to subsection (c) CIOMA feels that subsection (2) (requiring that all piping associated with the tank be removed, handled,

and disposed of as a hazardous substance) is inconsistent with Section 2672(b)(3), which allows the underground storage tank system or any part of the tank system to be handled, transported, or disposed as a non-hazardous waste. Subsection (d) requires the owner to demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This particular requirement appears to be beyond the Board's statutory authority and, given the monitoring requirements already proposed by the Board, is unnecessary. Also within subsection (d) the regulations require the owner to implement ongoing leak detection activities. This does not appear to be necessary if the tank has been properly cleaned.

Proposal

CIOMA proposes deleting subsections (1), (3), (4), and (5) of subsection (b) and amending subsection (b) to provide that the removal of underground storage tanks comply with Chapter 6.5 of the Health and Safety Code entitled Hazardous Waste Control and the California Administrative Code sections addressing hazardous waste regulations.

Subsection (c) should be amended as follows:

> "The closure of underground storage tanks in place shall comply with the California Administrative Code sections addressing underground storage tank closure."

Subsections (1) and (2) of subsection (c) should be deleted. If the Board finds CIOMA's proposal for subsection

(c) unacceptable, then alternatively, subsection (2) of that subsection should be amended as follows:

> "All piping associated with the tank shall be removed, handled, and disposed as a non-hazardous waste after it has been properly cleaned."

CIOMA proposes amending subsection (d) to eliminate the requirement that the owner demonstrate that no unauthorized release has occurred. CIOMA further proposes that the word "ongoing" be deleted from that subsection.

8. Article 8

Section 2681(b)

Comments

Subsections (2), (3), and (4) of this subsection are merely a duplication of Health and Safety Code section 25299.4(a) and are therefore unnecessary. Subsection (5) requires the variance applicant to list all the local agencies and persons who may be affected by or may be interested in the variance request. Health and Safety Code section 25299.4(a) mandates the Board to give notice to all affected cities and counties. By the very nature of the language in Section 25299.4(a), the legislature has changed the Board with responsibility for providing notice to affected persons and entities. Even without the mandate of section 25299.4(a) it seems quite clear that the Board is in a much better position to determine which persons and entities may be affected by the variance request. Moreover, by requiring the applicant to provide this information would require him to

make determinations and judgments from factual data he may not have or which may not be readily obtainable. Given the import of the argument stated herein concerning subsection (5) and the procedures mandated by Section 25299.4(a) of the Code, subsection (5) is unnecessary.

Subsection (f) which sets forth requirements for notice and public hearings appears to merely duplicate those notice and hearing requirements provided in Section 25299.4 of the Code, and therefore appears unnecessary.

Proposal

CIOMA proposes that subsections (b)(2), (b)(3), (b)(4), (b)(5), and subsection (f) be eliminated.

Sections 2681 and 2682

Comments

Sections 2681(b)(6) and 2682(e)(6) set forth application fees for categorical and site-specific variance requests. Code section 25299.4(d) provides that applicants seeking a variance shall pay a reasonable fee in covering costs in considering the application. CIOMA feels that $26,000 for a categorical variance and $7,750 for site-specific variance is absolutely unreasonable and not sufficiently substantiated. These fee established by the Board appear to be based on various assumptions made by the Board which may not be applicable to every variance application or situation.

Proposal

CIOMA proposes that the fee for categorical and site-specific variances be determined on a case by case basis taking into consideration the complexity of the variance, the geographical location of the site-specific or categorical variance, the level of detail required to be provided by the applicant and other similar pertinent information. CIOMA also proposes that the cost to the Board of the public hearings not be included in the variance fee, as many of these variances could be heard at the regularly scheduled hearings or meetings of the Board.

9. Article 10
Section 2711
Comments

This subsection sets forth the information required to be supplied by the permittee in the permit application. In reviewing the hazardous substance storage statement required to be submitted to the Board pursuant to section 13173 of the California Water Code, CIOMA feels that subsections (b)(1), (2), (3), (4), (5), (6), (9), (10), and (11), are merely a duplication of that information provided in the section 13173 statement.

Proposal

CIOMA proposes that those persons who have submitted a hazardous substance storage statement pursuant to Water Code Section 13173, they only be required to submit and complete that information provided for in the draft regulations that is inconsistent and different from the information required in Section 13173.

CIOMA also proposes that subsection (c) of this section be amended to require the local agency and the Board to provide the permittee with a detailed cost justification for the required fee. CIOMA further proposes that the fee be assessed on a case by case basis similar to the proposal provided herein for the categorical and site-specific variances in Article 8.

Section 2712

Comments

Subsection (f) sets forth various requirements and procedures for the granting of a provisional permit including local agency inspection deadlines and the sunset period for a provisional permit. Based on industry wide experience, CIOMA finds that the three month provisional permit period is an unrealistically short period of time for the tank owner to bring nonconforming tanks to required standards. It may also be unrealistic to assume that the various local agencies will have the resources to inspect each nonconforming tank within 15 days of the expiration of the provisional permit.

Proposal

CIOMA proposes that subsection (f) be amended to allow a provisional permit to be issued for a period of six months and to allow the local agency the discretion to extend the provisional permit for two additional six month periods with such discretion to be reasonably and uniformly applied, based on the good faith efforts of the tank owner in bringing a non-conforming tank up to required standards.

10. Owner/Operator Dispute

Comments

The Code and regulations are unclear about who the owner and operator are of underground storage tanks. And, California law is unclear who owns these tanks. Many underground storage tanks are located on property under a lease; and, most leases do not contain any provisions regarding underground storage tanks, because the Code and regulations were not in existence at the time these leases were executed.

Thus, there can be two owners - the operator/lessee, and perhaps the owner/lessor, during the term of the lease and the owner/lessor upon expiration of the lease.

Most owners/lessors, under existing leases, the Code and the proposed regulations, do not have the legal authority or right to enter the premises, begin excavation, install monitoring equipment, or otherwise interfere with the operator's/lessee's possession and business.

Consequently, the owner/lessor, under existing law, the Code, and the proposed regulations, have no legal nor practical authority or right to discharge the liabilities and obligations under the proposed regulations. This imposes an untenable liability and obligation on the owner/lessor. And, it will result in unnecessary and unproductive litigation.

Proposal

There should be further study for an equitable and fair allocation and clarification of the liabilities, obligations,

authority, and rights of the owner/lessor and operator/lessee.

11. Fiscal Impact Statement

Comment

The Board's Fiscal Impact Statement estimates total initial cost of $1,844,328,000.00 and annual costs of $545,812,000.00. The Board also estimated the total number of existing underground storage tanks is 200,000, of which 190,400 is owned by private industry. This results in an estimated cost per underground storage tank for an initial costs of $9,220.00 and annual costs of $2,720.00.

The Board's estimates do not include waste disposal, permit fees, legal costs, mobilization, demolition, administrative expenses, and other costs.

J. H. Kleinfelder and Associates, a nationally recognized geotechnical, materials testing, and land and water resource consultant, have concluded that the Board's estimates are understated by a range of 6%-100%; and, the costs not included by the Board will be an additional 12%-20%.

Thus, the realistic estimated total costs are more likely to be $2,500,000,000.00 for initial costs and $660,000,000.00 for annual costs. This results in an estimated cost per underground storage tank of $12,500.00 for initial costs and $3,300.00 for annual costs.

Most commercial customers have two underground storage tanks. CIOMA knows that the overwhelming number of these customers cannot afford and will not expend this amount of

customers cannot afford and will not expend this amount of money; it is simply not economically feasible. Rather, these customers will seal their underground storage tanks; and, with this sealing, these customers will then buy direct from the major oil companies service stations. With this current fiscal impact, the major oil companies simply enhance their dominant position.

Moreover, along with this loss of customer base, CIOMA members, in turn, cannot afford such a massive outlay of funds. Most all of CIOMA members are small, independent, locally owned petroleum distributors. This fiscal impact will simply financially overwhelm them and force them out of business.

Proposal

The Board should adopt regulations whose realistic costs per underground storage tank are reasonable. This can be achieved by adoption of CIOMA's proposals and granting appropriate small business regulations, all of which are consistent with the intent of the Code and protection of California water resources.

12. Small Business Regulations

Comments

The preceding Fiscal Impact Statement clearly sets forth additional costs not contemplated by the Board as well as commenting on the estimated costs developed by the Board which CIOMA has found to be significantly understated.

As a result of the devastating impact these regulations will have on the membership of CIOMA, as well as other small

businesses in California, who store and resell products from underground storage tanks which contain motor vehicle fuel, CIOMA proposes that for those underground storage tanks containing motor vehicle fuel the following monitoring standards for detection of unauthorized releases of hazardous substances apply:

a. The operator shall undertake daily gauging and inventory reconciliation;

b. Inventory records shall be kept on file for one year and reviewed quarterly;

c. Each underground storage tank containing motor vehicle fuel shall be initially tested using the precision test as defined by the National Fire Protection Association pamphlet 329 entitled "Recommended Practice For Handling Underground Leakage of Flammable and Combustible Solids," as amended.

d. The tank shall thereafter be tested at five year intervals using the precision test specified in the preceding paragraph.

e. If a pressurized pump system is connected to the tank's system, then the system shall have a leak detection device to monitor for leaks in the piping.

If the Board would find this proposal to be too encompassing, the CIOMA, at the very least, would propose that the preceding proposal apply to the user with a small throughput.

13. Inverse Condemnation

Comments

As CIOMA has earlier stated in preceding comments, these

regulations, if implemented, could force a majority of small businesses storing and selling motor vehicle fuels in California to either close many of their existing storage tanks or cease operations all together. Such a result would severely impact a long existing and well organized net work of petroleum distribution in California.

CIOMA has undertaken considerable research with regard to a major legal issue which the Board and other state agencies may be confronted with if these regulations are approved as written. This concerns the issue of inverse condemnation.

The California Supreme Court has defined "inverse condemnation" as an invasion or an appropriation of some valuable property right which the land owner possesses by a public entity without compensation.

CIOMA has found that the proposed regulations will, in most cases, involve a high degree of interference with the investment back expectations of its membership. As a result of the added costs of compliance, the members of CIOMA will, in essence, be forced to bear the entire burden of a regulation intended to benefit the community as a whole. In Pruneyard Shopping Center v. Robins (1979) 447 U.S. 74,83,100 S.Ct. 2035, 64L.Ed.2d 741 the United States Supreme Court found that government action which places a burden on one individual that in fairness the entire community should share is a taking and requires compensation. In Loretto v. Teleprompter Manhattan CATV Corporation (1982) 458 U.S. 419, 102 S.Ct. 3164, 3171, 73 L.Ed.2d 868, the

the entire community should bear the cost of the government action is the basis for finding a taking, and is made following an ad hoc factual evaluation.

The leading commentator on California inverse condemnation law has stressed just this point, noting the "basic unfairness" of the situation where "the advantage obtained from a mandatory expenditure is enjoyed primarily, if not exclusively, by persons other than the one required to make it." Van Alstyne, "Inverse Condemnation," (1971) 44South.Cal.L.Rev.1,50-51. This puts the property owner in the position of "conferring public benefits" rather than merely (paying) the cost of reducing or eliminating community harms caused by his activities." Id.

In view of the clear public benefit conferred for public waters on privately owned land at the exclusive expense of the land owner, there probably is inverse condemnation, for which just compensation must be paid.

14. Summary

Of all the comments and proposals, those that are most critically important to CIOMA and its members are -

1. The adoption of CIOMA's proposals for Article 4;
2. The adoption of CIOMA's proposals about the fiscal impact; and
3. The adoption of CIOMA's proposals for small business regulation.

Literally, the survival of small, independent, locally owned petroleum distributors depend upon the adoption of economically feasible regulations.

petroleum distributors depend upon the adoption of economically feasible regulations.

CIOMA invites the Board and its staff to call or meet for additional information, comments, and proposals.

Respectfully submitted at Sacramento, California on October 23, 1984.

CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION

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RICHARD J. ZIPP,
Senior Engineering Geologist,
J. H. Kleinfelder & Associates

102-E

Testimony
before the
State Water Resources
Control Board

on the
Regulations for the Storage
of
Hazardous Substances

by
Thomas L. Robinson
Vice President
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Robinson Oil Co., Inc.
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California Independant Oil Marketers Assocaition

November 27, 1984

INTRODUCTION

Thank you for the opportunity to present testimony on the proposed regulations governing the underground storage of hazardous materials. CIOMA appreciates not only the hard work done by the staff and the Board but also the concern you have shown in trying to protect the groundwater while at the same time not placing overly burdensome costs on tank owners.

CIOMA is concerned with the speed in which the implementation of these regulations is proceeding. Our committee has only had one opportunity to meet to discuss this latest draft. We have barely had the chance to proof our own written comments. We have no desire to see these hearings drag on, but more importantly considering the potentially tremendous financial implications these regulations will have on independent petroleum marketers we hope the Board will not be hasty in the implementation of these regulations.

We do not want to take too much of your time today but realizing this may be our last chance to provide input into the adoption process of this very significant piece of legislation, we want to fully express our concerns and answer any questions you might have.

Our major concern is Article 4, but before we discuss Article 4 we would like to note a few minor concerns.

Section 2634 (a) (3). Should be clarified so that it is clear that double walled tanks do not have to be tested.

Section 2644 (b). Should be clarified so that it is clear that delivery vehicles are not required to have meters as long as there is a meter at the loading terminal.

Besides these two sections we have addressed other concerns in our written comments.

ARTICLE 4

To discuss Article 4 we feel it is important to first review the intent of the law. The intent of the law is to protect the groundwater from contamination. To do this, the Board is responsible for making regulations governing construction and monitoring standards for new tanks and monitoring standards for existing tanks. Which brings us to Article 4, monitoring standards for existing tanks. Below are what we believe are the requirements for a good monitoring alternative.

1. First and foremost the alternative must be capable of detecting unauthorized releases of any hazardous substances stored in the facility.

2. Detection should be prior to contamination.

3. Must be enforceable.

4. Should be cost effective.
   - Initial cost
   - On going cost
   - Paperwork, reporting costs

5. Should attempt to minimize economic disruptions (i.e. change the distribution system of a product by placing undue burdens or benefits on a certain sector of an industry).

6. Should consider the relative hazardous qualities of various substances.

7. Should consider the inherent monitoring advantages or disadvantages a substance has for example:
   - Can it be inventoried
   - Will it dissolve in water or float on water
   - Does it have an odor or is it odorless.
   - etc.

calibrations were checked and if necessary the tanks and piping were tested. More recently piping leak detectors on pressurized piping have been installed as an added monitoring method for the piping. The staff is concerned that inventory reconciliation may not detect a small leak due to the factors of thoughput tank size, vapor recovery, gauging errors, bookkeeping errors, temperature correction gain or loss, etc. The staff is also concerned that a tank owner or operator may, when they suspect a leak, figure it is cheaper to lose a few gallons rather than remove the tank and clean-up the spill. Lastly the staff is concerned with the difficulty of enforcing inventory reconciliation. To relieve these concerns Staff has proposed a very stringent allowable variation in Alternative 5 and a less stringent allowable variation in Alternative 6 plus additional monitoring in both. As part of the inventory reconciliation process, Staff has proposed a method of verifying deliveries. To ensure compliance Staff has proposed a quarterly report which the signer under penalty of perjury acknowledges that he has reviewed the data and it is within the allowable variations or lists the dates and the variations that exceed the allowable.

CIOMA understands staff's concerns but does not feel staff gives proper credit to the value of inventory reconciliation. With regard to Alternative 5, CIOMA believes a very stringent allowable inventory variance will trigger the implemetation of unneccessary and costly emergency measures. The lack of very stringent variance will not preclude an owner/operator acting in his own self interest from taking further investigative measures. <u>Most importantly CIOMA believes Alternative 5 even without any allowable variation trigger mechanism answers all of the staff concerns with inventory reconciliation.</u>

With these requirements in mind we would like to review the proposed alternatives. To aid in this we have provided a spreadsheet showing the various alternatives. We feel it makes it easier to compare the relative requirements of each alternative.

ALTERNATIVES 1-4

Alternative #1, tank testing, is simple enough, but not presently practical unless a cost effective tank testing method can be developed and approved. Section 2643 (d) allows only certified tank tests. CIOMA is concerned that there is no provision as to how a test gets certified. Alternatives 2-4 are straight forward enough and do not require additional comments at this time.

ALTERNATIVE 5 and 6

A discussion of these two alternatives is a discussion of inventory reconciliation. An understanding is required not only of the mechanics of inventory reconciliation but its strong and weak points. The mechanics of inventory reconciliation are just the comparison of a book inventory which is calculated taking a known beginning inventory plus deliveries less sales, and a known ending, actual, physical, inventory determined by sticking the tank. The difference is product overage or shortage. Everyone agrees on the mechanics. Agreement on the strengths and weaknesses is not quite so easy. Historically the petroleum industry has used inventory reconciliation as the sole monitoring method for both the tank and the piping. If inventory reconciliation indicated a shortage, then bookkeeping records were checked, an inspection was done for evidence of leaks, meter

These concerns are again listed below.

1. May miss small leaks.

2. Owner/Operator may ignore small leaks figuring it is cheaper to leak that to replace and clean-up.

3. Difficult to enforce.

CIOMA's answers to those concerns are as follows:

1. Assuming the small leak is missed by inventory reconciliation than
   - if the leak is in the tank, it will be caught with the annual tank test.
   - If the leak is in the piping, the leak detector will catch it.

2. Should the owner/operator ignore the leak he is a fool because he will be caught when he tests the tank. The longer he waits the more expensive is his clean-up costs.

3. It should not be difficult to enforce. The staff proposes a quarterly report. We do not believe it is necessary. We believe occasional spot checks of a few days or weeks would show if an owner/operator was complying and if not a penalty would be approriate.

With regards to Alternative 6 we would propose as a practical alternative the basic monitoring required by Santa Clara County which consists of:

1. Inventory reconciliation

2. Leak detectors

3. Vadose and/or Groundwater Wells

CIOMA believes this alternative answers Staff's concerns much the same way our proposal to Alternative 5 does by providing back-up monitoring to inventory reconciliation.

ALTERNATIVE 7

CIOMA has no comments on this alternative.

ALTERNATIVE 8

CIOMA is again concerned about the need for the allowable variations. Also, considering the cost to install new tanks and the fact that CIOMA members tanks are typically all within the state, we feel it is appropriate to allow 7 years to comply. Especially considering Alternative 8 allows government agencies 3 years to comply just to the monitoring standards.

SUMMARY

As the alternatives are presently written, almost no tank owners could consistently comply with the allowable variation in Alternative 5 and most tank owners could not consistently comply with the allowable variation in Alternative 6. Not staying within allowable variations will require unnecessary emergency measures. Most importantly leak detectors with tank testing or monitoring wells will provide the necessary back-up to inventory. As they are presently written it may be cheaper and easier to meet Alternatives 2,3 and 4. This situation seems wrong when the legislature in passing the law realized gasoline is expensive, thus costly to lose unlike a hazardous waste, and realizing it was a substance in which inventory reconciliation was a common and very useful method in monitoring loses, which gave it some inherent monitoring advantages over many other hazardous substances. It is important to keep our perspective. When these regulations are implemented, California will have the most stringent underground tank regulations in the nation. These regulations do not allow the local agency authority in reducing the stringency of these monitoring alternatives. But they can make them more stringent.

The monitoring requirement in Santa Clara County are less stringent than these regulations. This law is the result of the toxic chemical leaks in Santa Clara County. These were not gasoline leaks. We have come a long way in just a few years. Although the petroleum industry was not the cause of this legislation, it had a few things in its act which needed cleaning up. For that reason CIOMA supports the intent of the law and of these regulations. But again keeping our perspective, if it is important to remember, even with CIOMA's proposed comments this state will still have the most stringent underground regulations in the nation. Even using our proposals, the financial burden on independent marketers will be very heavy. CIOMA believes its proposals are fair and consistent with the law while at the same time providing safety to the groundwater.

MONITORING ALTERNATIVES

	ALT #1	ALT #2	ALT #3	ALT #4	ALT #5	ALT #6	ALT #7	ALT #8	SANTA CLARA ALTERNATIVES
COMMENTS		• VADOSE + GROUNDWATER • GROUNDWATER NORMALLY < 100 FT.	• GROUNDWATER > 100 FT. • GROUNDWATER HAS NO ACTUAL OR POTENTIAL USE	• GROUNDWATER NORMALLY < 30 FT • GROUNDWATER HAS NO ACTUAL OR POTENTIAL USE	• VERY STRINGENT ALLOWABLE INVENTORY VARIATION	LESS STRINGENT ALLOWABLE VARIATION			
TANK TESTING	MONTHLY		ANNUALLY		ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	
VAPOR OR VADOSE		DAILY	DAILY			VARIABLE*			VARIABLE**
GROUNDWATER		SEMI-ANNUAL		WEEKLY		VARIABLE*			VARIABLE**
SOILS		ONE TIME	ONE TIME	ONE TIME		ONE TIME			ONE TIME
INVENTORY RECONCILATION					DAILY	DAILY		DAILY*	DAILY
PIPELINE LEAK DETECTORS OR SUCTION PIPING					CONTINOUS	CONTINOUS			CONTINOUS
TANK GAUGING							WEEKLY	DAY/WEEKLY*	
ASSURANCE GROUNDWATER IF -TANK IN RECHARGE AREA -WATER HAS ACTUAL OR POTENTIAL USE -GROUNDWATER < 100 FT	VARIABLE FREQUENCY NOT SPECIFIED	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE

* EITHER
** ONE OR BOTH DEPENDING UPON SITUATION

Zipps handout. 102-I

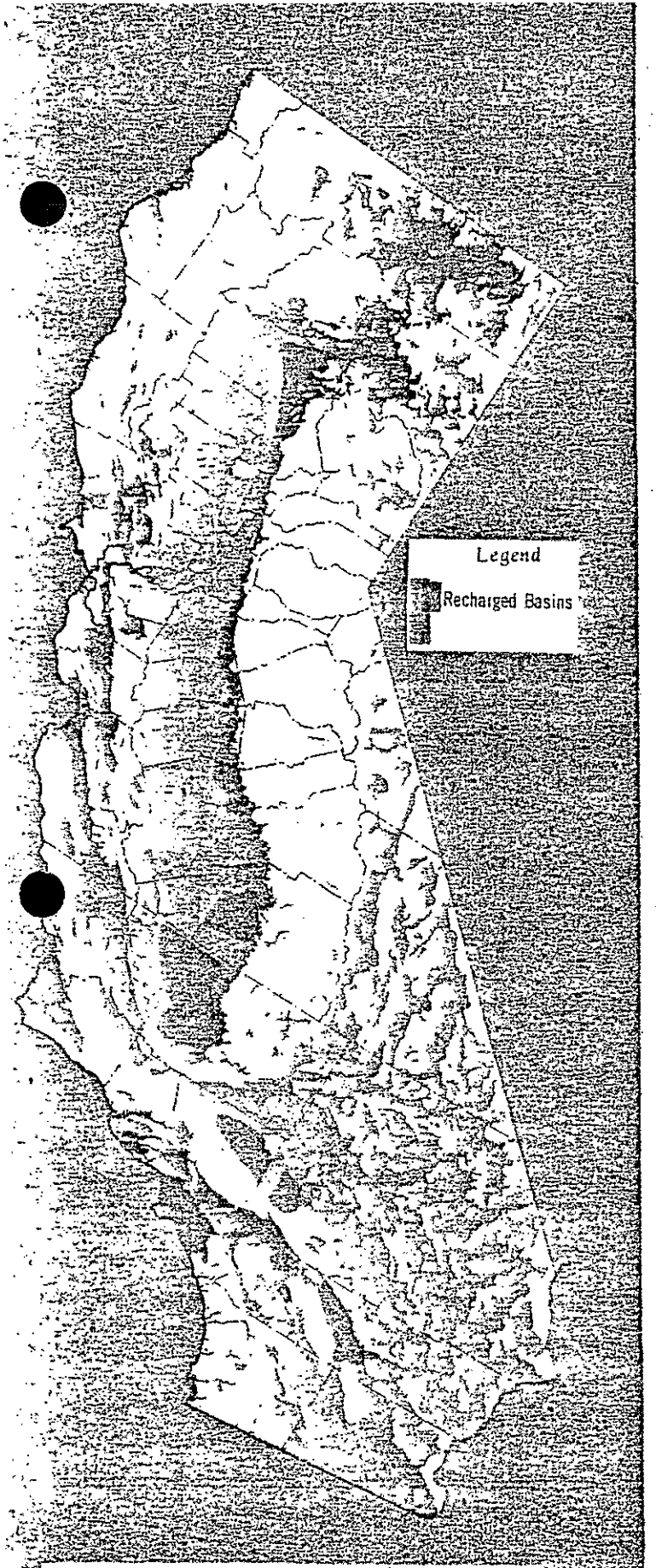


Figure 21. Basins with Artificial Recharge Projects

ited period and selective uses of ground water basins for salt sinks and other purposes, have not received consideration.

Recharge

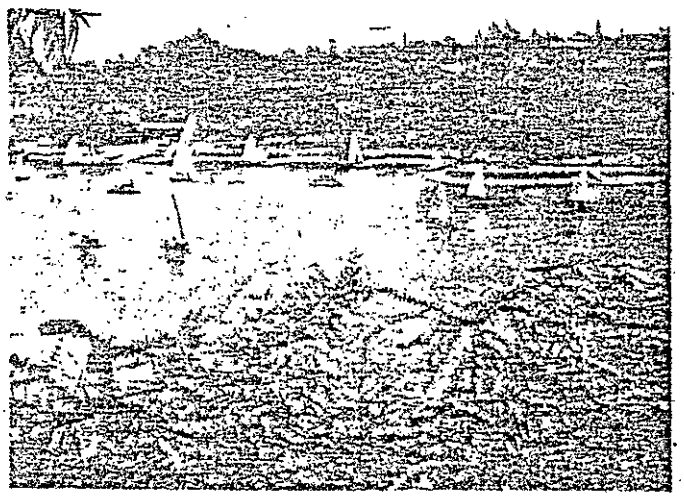
Water users recognized long ago that if a constant supply of surface water could be provided to the more permeable recharge areas of basins, the yield of the basins could be increased. In some cases, surface supplies have been obtained by construction of dams and reservoirs to regulate streams solely for the purpose of releasing the water for ground water recharge. In other areas, most of the winter runoff stored in the reservoirs has been used for direct surface application during the summer months and the remaining portion has been used for ground water recharge.

In many cases, water has been imported in excess of the needs of a basin to replace water that was mined from the basin before the imported supply became available. In a few areas, where highly permeable recharge areas are either limited or unavailable, lands overlying the basin are irrigated during the nongrowing season in years of large runoff to recharge the ground water basin. Waste water has also been used in several recharge projects.

Control of Pumping

When all available recharge opportunities have been fully developed, pumping by all ground water users has been controlled in some basins, so that water is not taken from the basin to the point of depletion. This step has almost always been accompanied by importation of water for surface distribution.

Situations may arise in the future where it will be necessary to curtail the actual use of water rather than replace the cutback in ground water with an imported supply. However, if water is imported to offset an overdraft situation, any irrigation of new land, at the expense of not offsetting the overdraft, should be evaluated and specifically approved as part of the project.



Recharge Area and Recreation

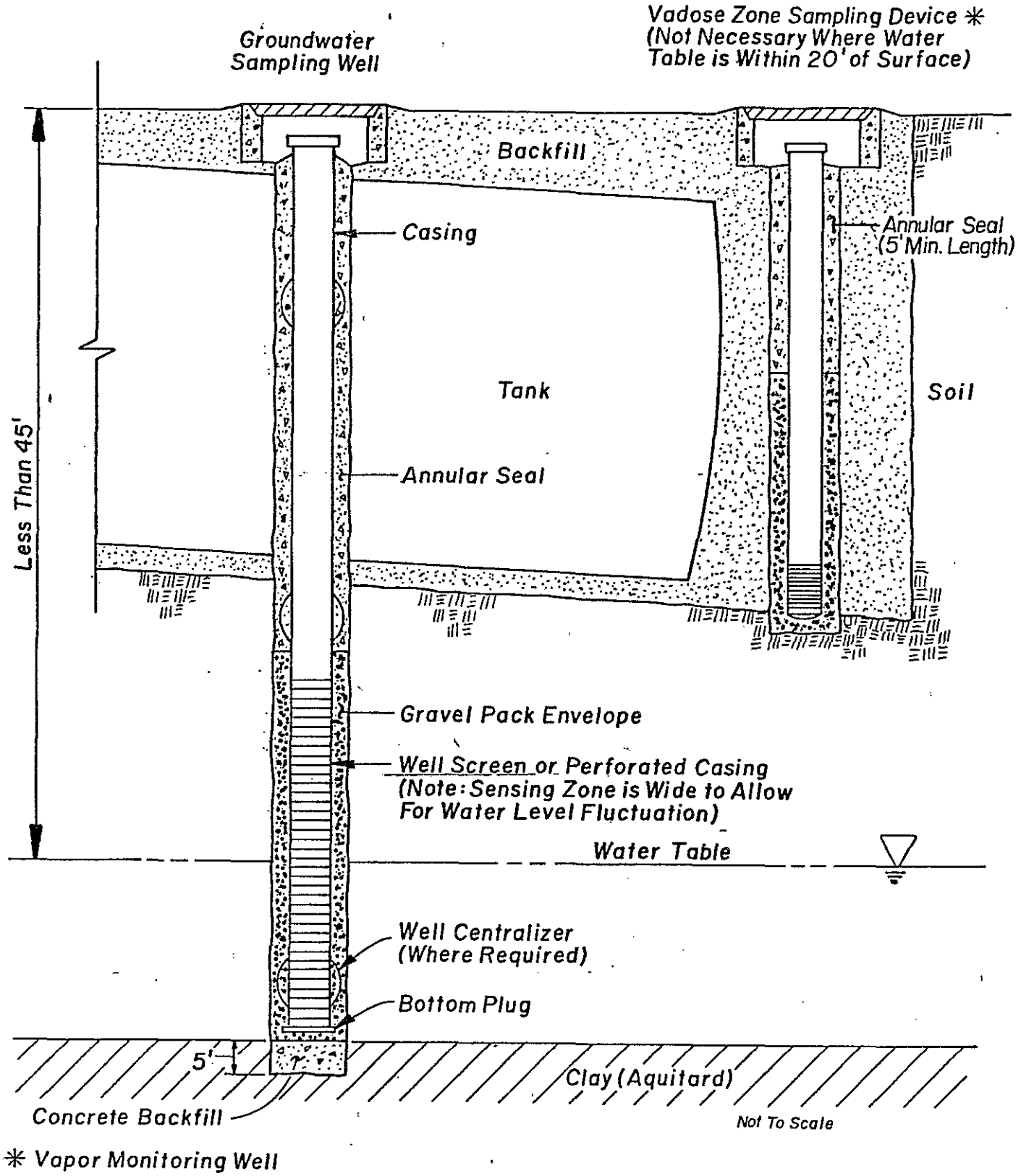


Figure 4. Typical Monitoring Facility, Commercial Motor Fuel Storage Facility, Shallow Groundwater

EXHIBIT A

102-J

COMMENTS AND PROPOSALS OF THE CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION ON THE SECOND DRAFT OF THE PROPOSED STATE WATER RESOURCES CONTROL BOARD REGULATION FOR THE STORAGE OF HAZARDOUS SUBSTANCES

The California Independent Oil Marketers Association (CIOMA) respectfully submits to the State Water Resources Control Board (Board) for consideration the following comments and proposals concerning the regulation, design, construction, and operation of underground storage tanks containing hazardous substances developed in the second draft of proposed regulations dated November 9, 1984.

The following is a detailed discussion of CIOMA's specific concerns, comments, and proposals.

1. Article 1 - General

Section 2610 - Applicability
Comments

This Article generally sets forth the intent of the proposed regulations and sets forth, in general terms, the reporting and operational requirements for owners and operators of new and existing underground storage tanks.

As a result of the varied geographic terrain in California, CIOMA recognizes that it would be virtually impossible to tailor regulations and monitoring criteria for every geographic location where an underground storage tank containing hazardous substances is located. By the same token, regulations proposed at the State

level cannot possibly take into consideration unusual circumstances that may arise in the owner/operator's effort to comply. For example, if a confined aquifer is breached by drilling, water may flow to the surface, making it impossible to complete the wells in accordance with the construction requirements set forth in these regulations.

For this reason, it is important that each owner/operator and each local agency be given maximum flexibility to implement a monitoring program consistent with the geographic location of the underground tank while at the same time maintaining consistency with the adopted regulations.

Proposal

CIOMA proposes that a new subsection entitled "Responsibility of Performance" be added to this section designated as subsection (e) and to read as follows:

> (e) Responsibility of Performance: These guidelines suggest typical monitoring well construction, taking into account various hydrogeologic conditions and contaminant properties in meeting the objectives of the monitoring program. The examples presented are expected to be appropriate to suit most of the varying local conditions. However, it is recognized that the specified requirements may not be appropriate to all conditions and, hence, individual well designs are not limited to the examples presented.

Any unique or unusual circumstances should be handled on a case by case basis. Nor do these guidelines preclude the use of other methods or equipment. However, any alternatives or deviations from the suggested guidelines must meet the objectives of the program and must provide equivalent or superior protection of the acquifers by their construction. When an alternative concept is considered by the enforcing agency, the agency shall review and approve or disapprove its use.

Furthermore, the monitoring alternatives presented are limited solely to the detection of facility leakage and are not intended to have any other investigative purpose.

As provided by law, it is intended that the owner/operator of any underground storage tank shall install and perform a monitoring program. As the installation and performance of a monitoring program requires professional judgments and important field decisions, the owner/operator is responsible for the enlistment of a qualified professional to assume the technical responsibility for performance. For the purposes of these guidelines, the overall technical responsibility

is to be assumed by a State registered geologist, certified engineering geologist or registered civil engineer.

2. Article 3 - New Tank Construction and Monitoring Standards

Section 2634(a)(3)
Comments

This subsection requires the owner/operator to conduct hydrostatic testing of the tank every two years according to the criteria specified in Section 2643. If the owner/operator were to install a double walled tank then hydrostatic tank testing should not be required as long as the space between the primary and secondary containers is being monitored.

Proposal

CIOMA proposes that this subsection be rewritten to read as follows:

> "Except for double walled tanks, hydrostatic testing of the tank every two years according to the criteria specified in Section 2643 of Article 4, and"

Section 2634(e)
Comments

This subsection provides that an underground tank used for the storage of motor vehicle fuels that experiences either a gain or loss as determined by daily gauging and inventory greater than an amount specified shall implement testing procedures. Section 25284.1(b)(3) of the enabling legislation provides for tank testing "whenever there is a shortage greater than the amount which the Board shall specify by regulation".

Therefore, the statute does not provide for nor require tank testing if the owner/operator experienced a "gain".

Proposal

CIOMA proposes that the words "or gain" contained in this subsection be deleted.

CIOMA further proposes that this subsection be deleted as a requirement for those underground tanks with double walled construction. Since double walled tanks are required to have leak detectors installed and the space between the primary and secondary tanks is being monitored it seems unnecessary to burden the owner/operator with inventory restrictions.

Section 2635(b)(9)(A)
Comments

This subsection requires the filling operation to be controlled by the facility operator during filling of the underground storage tank. Based on industrywide practice, it is unnecessary to require the facility operator to visually monitor the filling operation when such an operation is routinely monitored and controlled by the delivery vehicle operator.

Proposal

CIOMA proposes that this subsection read as follows:

> "Both the fluid level is visually monitored and the filling operation is controlled by the facility operator <u>or the delivery vehicle operator</u> during filling of the underground storage tank, or"

Section 2635(b)(9)(C) & (D)
Comments

Subsection (D) requires the owner/operator to install a spill catchment basin around the fill pipe to prevent subsurface spillage. The requirements provided in subparagraph (A), (B), and (C), provide more than adequate protection from subsurface spillage.

Proposal

CIOMA would propose that the word "or" be added at the end of subsection (C).

3. Article 4 - Underground Storage Tank Monitoring Criteria

Section 2640 - Applicability
Section 2640(a)
Comments

This section, among other things, requires the owner/operator "in certain situations, determining if hazardous substances are present in the area around the underground storage tank."

As a result of numerous written comments by the petroleum industry, including CIOMA, as well as oral comments made at the November 2, 1984 workshop, it was the concensus of the Board that requiring the owner/operator to detect "past" or "historic" releases was inappropriate and should be deleted from the regulations. The language in this subsection requiring the owner/operator to determine if hazardous substances are present in the area is merely another way of requiring the owner/operator to detect past or historic releases. This additional language in this subsection is inconsistent with the dictates of the Board and the enabling legislation.

Moreover, as CIOMA has stated in past written comments, there is no basis in the enabling legislation which requires an owner/operator to detect past or historic releases.

Furthermore, the addition of this language to this subsection may create other requirements imposed on the owner/operator which would be inconsistent with the monitoring alternatives in this second draft. This additional language may require the owner/operator to implement more than one alternative, or at the very least, expand the monitoring alternatives selected. This would be inconsistent with the intent of the second draft
which requires the owner/operator to implement a monitoring alternative.

Proposal

CIOMA proposes that the language "in certain situations, determining if hazardous substances are present in the area around the underground storage tank" be deleted.

Section 2641(c)(2)(B)
Comments

This subsection requires vadose zone monitoring to be performed either continuously or daily. Vadose zone monitoring covers both lysimeters and vapor wells. In the case of lysimeters, a period of time is required between applying the vacuum and the actual collection of samples. This period of time prohibits continuous monitoring.

Proposal

CIOMA proposes that the continuous and daily monitoring requirements in this subsection be deleted and substituted with

monthly monitoring or less frequently than monthly in appropriate circumstances.

Section 2641(c)(2)(D) & (c)(3)(D) & (c)(4)(C)
Comments

These two subsections seem to imply that all soil samples should be analyzed. CIOMA's technical consultants have determined that it is unnecessary to require the owner/operator to analyze each soil sample.

Proposal

CIOMA proposes that the owner/operator only be required to analyze pertinent soil samples as determined by the owner/oparator's technical consultant.

Section 2641(c)(4)(B)
Comments

This subsection requires that ground water monitoring wells be monitored monthly at a minimum. In Table 4.1 which summarizes monitoring alternative 4, the minimum monitoring frequency states "weekly" monitoring. The weekly monitoring requirement in Table 4.1 appears to be inconsistent with this subsection.

Proposal

CIOMA proposes that alternative 4 in Table 4.1 be amended to provide for monthly monitoring.

Section 2641(c)(5)(B)(iii)
Comments

This subsection requires the period of continuous calculations to be no greater than 30 days. CIOMA has found it to be the practice throughout the industry for owner/operators to implement monthly inventory control. Given the requirement in this section that continuous calculation shall be no greater

than 30 days, the standard inventory practices of the industry would have to be altered in those months containing 31 days.

Proposal

CIOMA proposes that the number 30 in this subsection be changed to 31.

Section 2641(c)(5)(B)(iv) & (v)
Comments

These two subsections set forth allowable variations in inventory reconciliation. CIOMA has several comments with regard to these two subsections.

First, as a result of numerous written comments as well as oral testimony at both the October 23, 1984 public hearing and the November 2, 1984 workshop, it was the general consensus of the Board that the petroleum industry had presented an effective and convincing argument for tank testing and inventory control. As a result of that consensus of opinion, CIOMA expected workable and reasonable variation figures for those owners and operators implementing this monitoring alternative. To the contrary, the staff has proposed inventory variations that are far beyond therealm of practicality. While allowing inventory reconciliation as an alternative, the staff has proposed allowable variations so strict that, in most cases, would affectively vitiate the use of the alternative altogether and would force the owner/operator to implement other more costly yet no more efffective alternatives.

CIOMA seriously questions the rational of the staff in proposing such strict inventory varia- tions which appear to be completely inconsistent with the consensus of the Board in

allowing and supporting inventory reconciliation for motor vehicle fuel tanks.

Second, there appears to be no reasonable basis for requiring such strict inventory variations when the owner operator is required to install leak detectors as well as to complete a tank tightness test. This appears to be a clear case of substantial and unnecessary overkill.

Third, if a owner/operator were to implement this alternative, it would virtually require him to invest in expensive electronic tank gauging equipment. While there was previous testimony before the Board at both the October 23rd public hearing and the November 2nd workshop to the effect that there is currently available state-of-the-art electronic tank gauging equipment available, CIOMA's research has found that even with this equipment such strict variations could not consistantly be met.

Fourth, in previous written and oral comments, CIOMA has emphasised the use of a trend analysis approach to inventory control as well as reasonable variation figures in order to eliminate the implementation of unnecessary emergency measures by the owner/operator. If the inventory variations specified in this second draft were implemented by the Board, CIOMA would estimate that the majority of owner/operators would be implementing the evaluation procedures specified in subsection (f) of Section 2634 of Article 3 monthly. This would in essence vitiate the alternative altogether and would make a shambles of the general intent of the Board to balance the need to protect

California's ground water against the reasonable business concerns of the petroleum marketing industry.

Proposal

CIOMA proposes that the throughput error of .15% in subsection (iv) be changed to .5%. CIOMA has also determined that the allowable measurement of 20 in the 4,000-8,000 tank size found in Table 4.2 in subsection (v) should be 50 to be consistent with Table 4.1 entitled "Monitoring Alternatives".

Section 2641(c)(6)(B)
Comments

This subsection sets forth allowable inventory variations for those owner/operators implementing this alternative 6. As well as inventory reconciliation, under this alternative, the owner/operator is required to implement a tank testing program, install pipeline leak detectors, implement vadose zone or ground water monitoring, and implement soil testing. Given the extensive nature of these other monitoring requirements under this monitoring alternative, CIOMA finds that such inventory reconciliation variation figures be unnecessary. These other backup systems would provide adequate ground water protection.

Proposal

CIOMA proposes eliminating subsections (i), (ii), and (iii) from this subsection.

Section 2641(c)(6)(C)
Comments

This subsection requires the owner/operator to implement yearly tank testing at a minimum. Again, requiring yearly tank testing appears to be unnecessary given the inventory recon-

cilitation requirements, installation of pipeline leak detectors, vadose zone or ground water monitoring, and soils testing.

Proposal

CIOMA proposes that the yearly tank testing requirement be deleted.

Section 2641(c)(8)
Comments

This subsection entitled "Interim Alternative Monitoring" allows the owner/operator, after meeting various requirements, to implement a tank replacement program within a period of no longer than three years. CIOMA has found that for most owner/operators raising sufficient capital for tank replacement within a three year period would be prohibitive.

Proposal

CIOMA proposes that the three year requirement in this monitoring alternative be changed to seven years.

Additional Monitoring Alternatives
Comments

In conjunction with the eight monitoring alternatives provided in the second draft of these regulations, CIOMA's technical staff has also analyzed the underground tank monitoring requirements of Santa Clara County. It is well recognized that Santa Clara County has been in the forefront in establishing monitoring requirements for new and existing underground storage tanks containing hazardous substances.

Proposal

CIOMA proposes that an additional monitoring alternative numbered 9 be added to Section 2641 as follows:

(9) Inventory Reconciliation, Pipeline Leak Detectors, Vadose and/or Ground Water Monitoring and Soil Testing

(A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation, pipeline leak detectors, vadose and/or ground water monitoring and soil testing.

(B) All pressurized pipelines and suction pipelines shall be monitored.

(D) Vadose and/or ground water monitoring shall be performed in accordance with procedures specified in the Santa Clara County Ground Water Monitoring Guidelines December, 1983 (a copy of these guidelines is attached as Exhibit A). In accordance with these guidelines, in order to provide adequate coverage, monitoring requirements may vary from one storage facility to another based upon the depth of ground water beneath the facility, the size of the facility, and upon the character and properties of the materials stored.

Section 2641(d)
Comments

This subsection requires local agencies to evaluate a monitoring alternative consistent with the dictates of Section 2640 and, further, subsection (2) of this subsection requires the implementation of ground water monitoring.

In analyzing this section, CIOMA has determined that taken as a whole, subsection (d), in essence, takes away from the local agencies, the ability to implement and require a monitoring alternative consistent with tank substance and tank location. Furthermore, this section, taken as a whole, seems to require the owner/operator to implement more than one monitoring alternative if in a recharge area.

CIOMA's technical consultants estimate that as much as 55% to 65% of California's underground storage tanks are in recharge areas and would be subject to this section.

There is, in essence, a "catch-all" section designed to force many owner/operators in ground water monitoring. This would be inconsistent with many of the monitoring alternatives available to the owner/operator especially with regard to those underground tanks containing motor vehicle fuel.

Proposal

CIOMA proposes that this subsection be deleted in its entirety.

Section 2644 - Inventory Reconciliation
Section 2644(b)
Comments

This subsection requires that all tanks shall be individually monitored. As CIOMA has stated in earlier written comments, in many facilities, the individual monitoring of each tank is not feasible if the underground tanks are manifolded or connected.

This subsection further requires that tank input meters be calibrated within the accuracy required for meters used for

wholesale transactions in California. This language seems to imply that meters be installed on delivery trucks. In recent informal discussions CIOMA memebers have had with the staff, it is our understanding that requiring meters on delivery trucks was not the intent of this subsection.

Proposal

CIOMA proposes that in a situation where tanks are manifolded or connected, the system would be inventoried and then such inventory would be reduced to the smallest connected capacities.

CIOMA further proposes that a sentence be added to this subsection to read as follows:

> "For purposes of clarification, it is understood that approved meters at the loading terminal satisfy the requirement for approved tank imput meters."

Section 2644(c)
Comments

This section defines "daily" as those days during which inputs or withdrawals are made from the tank which shall be a minimum of 5 days per week reduced by public holidays. As CIOMA has stated in earlier written comments the definition of daily should be relegated to "operating days".

Proposal

CIOMA proposes that this subsection be rewritten to read as follows:

> "For the purpose of this section, "daily" shall be defined as operating days except

for commercial fueling facilities for which the word "daily" shall mean Monday-Friday except for public holidays."

Section 2644(e)
Comments

This subsection requires that wholesale meter deliveries be verified according to the procedures specified in preceeding subsection (d) of Section 2644.

CIOMA, based on industrywide experience, finds such requirements both impractical and unnecessary. An effective use of an inventory-control program at the facility would not require tank stickings and delivery reconciliation when a delivery is metered off the truck or at the truck terminal. Moreover, using tank stickings as a verification of proper delivery is often times difficult since deliveries may not be temperature corrected and there is a certain degree of sloshing which occurs during a tank truck delivery. Furthermore, reconciling deliveries to tank stickings would require, in most cases, the closing of those facilities selling motor vehicle fuel since such reconciliations would be inaccurate if product sales took place during the delivery process. CIOMA estimates that each delivery takes approximately 30-45 minutes which would virtually require the facility to close down for at least that length of time.

Proposal

CIOMA proposes that this subsection be deleted in its entirety.

Section 2644(f)
Comments

This subsection requires the owner or operator to submit a statement under penalty of perjury to the local agency verifying the inventory reconciliation data developed by the facility. CIOMA finds this requirement to be an additional unnecessary paperwork burden on the owner/operator. Further, the submission of the quarterly inventory data by the operator is unnecessary when those records are available at the station or facility for inspection by the local agency.

Proposal

CIOMA would propose eliminating this subsection in its entirety.

Section 2645 - Soil Testing
Section 2645(c)
Comments

This subsection requires that soil samples be taken at intervals of five feet or less beginning at the "ground surface". Since the intent of the regulations is to find spills from the underground tank, the language "ground surface" is confusing and ambiguous.

Proposal

CIOMA would propose deleting the words "ground surface" and substituting in the words "tank bottom".

Section 2645(j) & (k)
Comments

These two subsections seem to require that all samples be analyzed.

Proposal

CIOMA proposes that subsection (j) be amended to provide that only selected samples be analyzed by field or laboratory methods and that subsection (k) be amended to provided that only appropriate samples be analyzed for only those constituents that have been stored in the tank.

Section 2645(m)
Comments

This subsection provides that if soil analysis determines that an unauthorized release has occurred, the permittee shall report the release and repair or abandon the tank.

This subsection should only apply to those underground tanks actually found to be leaking.

Proposal

CIOMA proposes that this subsection be amended to read as follows:

> If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or abandon the underground storage tank, if it is found to be leaking pursuant to Article 6 or 7 of this subchapter.

Section 2646 - Vadose Zone Monitoring
Section 2646(c)
Comments

This subsection provides that wells for vapor monitoring shall be fully perforated.

Proposal

CIOMA proposes adding a sentence to this subsection to read as follows:

> Unless this design can create a conduit for the vertical movement of contaminants, perforations should not span a low permiability zone.

Section 2646(d)
Comments

This subsection requires that vadose zone monitoring points be selected as to give the earliest possible warning of any unauthorized release.

Proposal

CIOMA would propose deleting from this subsection the words "give the earliest posssible warning" and substitute in their place the following:

> "Provide adequate detection".

Section 2647 - Ground Water Monitoring
Section 2647(c)
Comments

This subsection provides that wells shall not extend through clay layers that are below the water table, extensive and at least five feet thick. CIOMA's technical advisors have found that there is not any way of determining the extent of clay layers by drilling one boring.

Proposal

CIOMA would propose rewording the second sentence of this subsection to read as follows:

"However, wells shall not extend through clay layers that are at least five feet thick and below the water table."

Section 2647(d)
Comments

This subsection requires that well casing be factory perforated from a point five feet above the bottom cap to a point ten feet above the highest anticipated ground water level.

Proposal

CIOMA proposes rewording this subsection to read as follows:

"Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point five feet above the bottom cap to a point ten feet above the highest anticipated unconfined ground water level. Monitoring wells penetrating into a locally confined aquifer should be perforated in the confined zone and the confining layer should be sealed with an appropriate material.

As worded, the requirements of this section could provide a mechanism for the movement of contaminants.

Section 2647(g)
Comments

This subsection requires that filter packs shall extend two feet above the top of the perforated zone. CIOMA's technical

experts have determined that in many instances this may not be desirable.

Proposal

CIOMA proposes rewording this subsection to read as follows:

> "Filter packs shall normally extend two feet above the top of the perforated zone."

Section 2648 - Construction and Sampling Methods
Section 2648(h)
Comments

This subsection requires that all ground water monitoring wells shall be appropriately developed until the discharge water contains less than ten ppm solids. CIOMA's technical experts have determined that this is a performance specification and, in some circumstances, may be difficult to meet in many areas. The presence of some sediment does not generally alter the identification of contaminants.

Proposal

CIOMA proposes rewording this subsection to read as follows:

> "All ground water monitoring wells shall be appropriately developed."

Section 2648(p)
Comments

The second sentence of this subsection states that "historic high ground water levels shall be determined by a review of all water level measurements on record for wells within five miles of the site. CIOMA's technical experts have found this requirement to be unnecessarily restrictive; and, may not be applicable in all situations.

Proposal

CIOMA proposes rewording the second sentence of this subsection to read as follows:

> "Historic high ground water levels shall be determined by a review of water level measurements on record for wells within a reasonable distance from the site."

4. Appeal Process
Comments

In recent informal discussions CIOMA has had with several Water Quality Control Board staff members, it has been stated that there is considerable concern over the implementation of these regulations by various local agencies in California. This concern is generally centered around the potential lack of detailed technical knowledge by some local agencies in their effort to implement these regulations on the local level.

CIOMA is concerned that some local agencies who may not be as well versed as others in the implementation of these regulations may have a tendency to be over zealous in their requirements for the owner/operator. This overzealousness may present a situation whereby the owner/operator is required to implement various procedures that could be determined to be unnecessary by another more well informed local agency analyzing the same situation.

Proposal

CIOMA proposes that the Board and staff preliminarily study and implement an appeal process whereby an owner/operator who feels that he has been unreasonably burdened with monitoring

procedures, to have those procedures required by that local agency reviewed by an appeals board.

CIOMA does not feel that this review process would open up the "flood gates" for a review of every decision by a local agency but would provide that owner/operator who feels he has been unreasonably burdened an inexpensive, administrative process whereby technical experts well versed in the implementation of these regulations could review a local agency determination for reasonableness. CIOMA further feels that this review process would not place an unreasonable fiscal burden on the Board.

CIOMA invites the Board and its staff to call or meet for additional information, comments, and proposals.

Respectfully submitted at Sacramento, California on November 27, 1984.

CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION

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SUMMARY

The purpose of the monitoring program is to detect as early as possible any leakage from an underground hazardous material storage facility should one occur. To accomplish this, site-specific monitoring facilities are to be constructed adjacent to the storage facility and are to monitor either the first aquifer zone or the immediate unsaturated zone beneath the storage facility, depending upon the depth of the water table beneath the facility.

This monitoring program as herein presented is one means to validate the storage facility performance and is to be used in conjunction with the Hazardous Materials Storage Permit Ordinances as adopted by the cities and the County of Santa Clara. It is the purpose and intent of the Permit Ordinance to protect groundwater supplies from contamination which might result from leakage of underground storage facilities.

These Guidelines will outline requirements, recommendations and suggested alternatives for the proper monitoring of existing underground storage facilities. These Guidelines also provide a monitoring schedule for the installation. Any unusual or unique installations will be handled on a case by case basis.

Classification of Hazardous Materials Storage Facilities

Non-Motor Fuel Storage

Non-motor fuel storage facilities include all commercial and non-commercial underground tanks for the storage of non-motor fuel hazardous materials as described in the Hazardous Materials Storage Permit Ordinances. Bulk storages of waste oil not located at retail outlets (service stations) are included in this classification as such storages could contain other than waste petroleum products.

Commercial Motor Fuel Storage

Commercial motor fuel storage facilities include all underground tanks for storage of motor fuels which are intended for commercial resale, including retail and wholesale

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outlets and bulk storage facilities. Also included are bulk storages for transit stations and industrial and municipal facilities as well as individual agricultural and suburban storages greater than 1,000 gallons.

Individual Agricultural and Suburban Motor Fuel Storage

Individual agricultural and suburban motor fuel storage facilities include non-commercial underground tanks of less than 1,000 gallons for motor fuel storage on agricultural properties, on suburban homesites, and on business sites where fuel is stored solely for use by the owner/resident in the course of his business or for his vehicles and equipment. All motor fuel storages for commercial resale are excluded from this classification.

For motor fuel storage, whether it be commercial, agricultural or suburban, the Administering Agency of the Permit Ordinance may reclassify the storage facility on an individual basis. Such individual reclassification may be in accordance with an unusual condition of use or the size of the storage facility.

Monitoring Requirements

In order to provide adequate coverage, monitoring requirements may vary from one storage facility to another based upon the depth of groundwater beneath the facility, the size of the facility and upon the character and properties of the materials stored.

Non-Motor Fuel Hazardous Materials Storage Facilities

Shallow Groundwater Conditions - A groundwater monitoring well shall be constructed at a storage facility where groundwater occurs at a shallow depth, defined as within 45 feet of the surface. Oftentimes the precise depth to groundwater is not known at a storage facility site unless a specific monitoring well exists within 500 feet of the site. In cases where the precise depth to groundwater is not known, the procedure is to drill a hole within the tank backfill or within ten feet of the storage tank down to groundwater or to a maximum depth of 45 feet if groundwater is not encountered. The hole is to be placed on the estimated down groundwater gradient side of the storage

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facility, as based upon professional judgement. The hole is to be carefully logged and soils samples obtained for laboratory tests in order to determine concurrent performance of the tank. Soils samples are to be obtained, starting at the bottom of the tank, every five feet to the water table. If water is encountered, a water sample shall be taken. Testing of soil and water samples shall be in accordance with the requirements of these Guidelines.

When the hole is terminated at a depth of 45 feet after failing to encounter groundwater, but in a case where the soils continue to be apparently contaminated based upon field observations, these conditions are to be reported to the enforcing agency. The data will be reviewed and a program for further investigation (which is beyond the scope of this monitoring program) will be initiated where appropriate. All laboratory test results are to be reported to the Administering Agency of the Permit Ordinance (the county or city of jurisdiction).

When groundwater is encountered or known to be within 45 feet of the surface, the drill hole will be extended through the depth of the aquifer to a competent clay layer or aquitard. A competent aquitard is greater than five feet thick. To test the competency of the aquitard or clay layer, the hole must be drilled five feet into it. Then the excess hole is to be backfilled with concrete and the monitoring well shall be completed in the aquifer above it, screening the full thickness of the aquifer. If the clay layer is found to be less than five feet thick, it may be assumed to represent a local lens. Should the first saturated aquifer be greater than 20 feet thick, the well will be completed at a depth of 20 feet below the top of the saturated aquifer.

The screened or perforated interval is to be gravel packed to a minimum of two feet above the uppermost screen or perforated interval. An annular seal of neat Portland cement, cement mix or thick bentonite slurry shall be placed from the top of the gravel pack to the surface.

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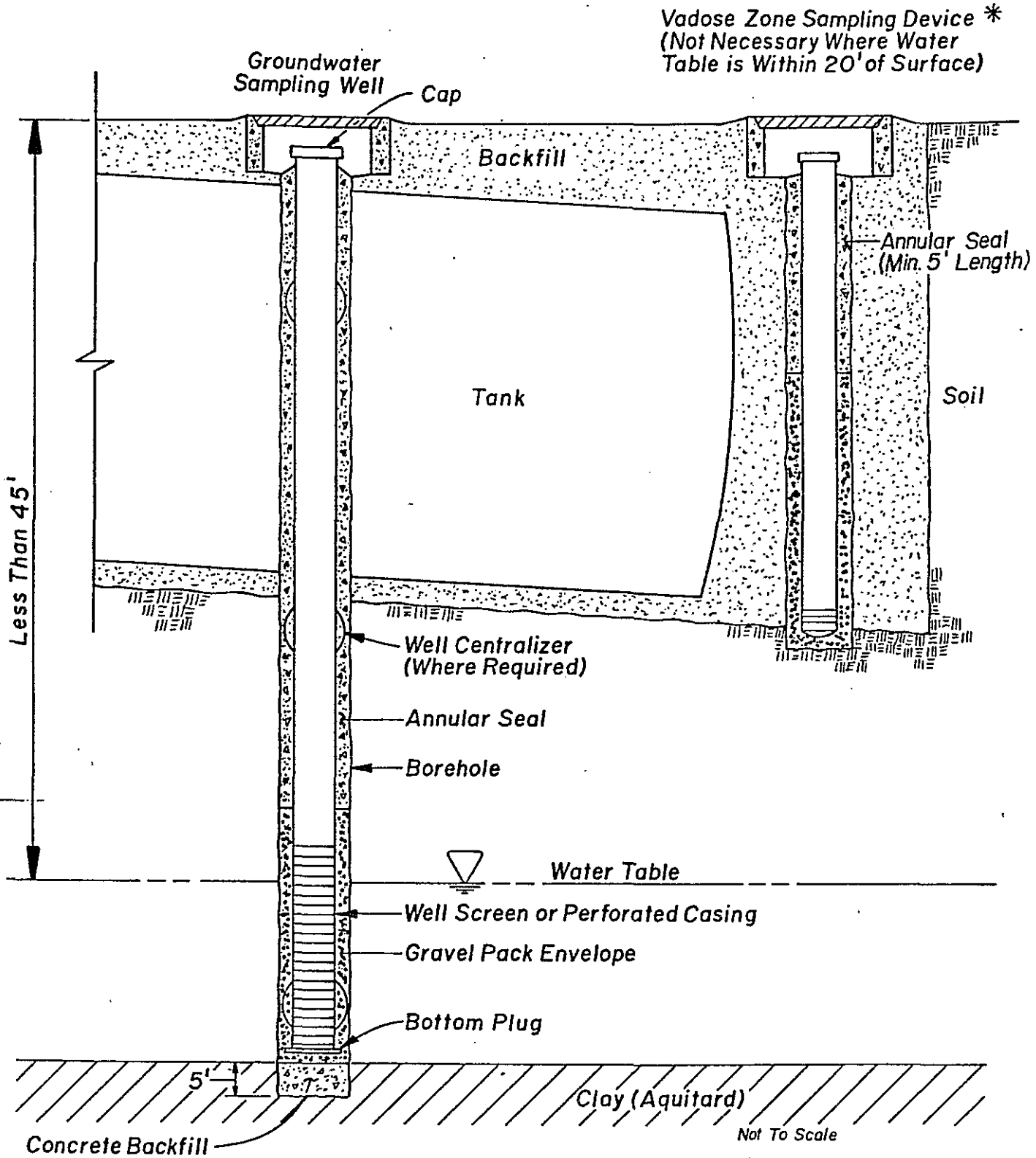
If groundwater is encountered at less than 45 feet but greater than 20 feet from the surface, a vadose (unsaturated zone) monitoring device shall be additionally required so that early detection may be possible by the combination monitoring installation. This vadose monitoring device is to be installed within the tank backfill at the location where the backfill is at the lowest level, if known. The sensing zone of the vadose monitoring device shall be placed at the bottom of the backfill. Required vadose monitoring shall include (1) a vapor monitoring well for volatiles or (2) either a suction lysimeter or an interface well for nonvolatiles. These alternative vadose monitoring devices which may be employed are discussed on Page 25 of the Guidelines. Refer to Figure 1 for a typical example of a monitoring facility herein described, where groundwater occurs at a shallow depth.

Soils-sampling procedure, analytical laboratory soils and water testing methods and tests required of the vadose zone monitoring devices are outlined within the body of these Guidelines.

Deep Groundwater Conditions - If groundwater is not encountered within 45 feet of the surface in the drilled hole, the well is to be completed with a vadose monitoring device in the unsaturated zone beneath the tank. The excess hole, drilled to explore for the groundwater and to obtain soils samples, shall be backfilled with concrete and the monitoring device placed within the remaining hole. The concrete backfill is to prevent the hole from serving as a possible conduit for downward movement of any contaminant or drainage water.

If the hole is started within the tank backfill, the vadose monitoring device shall be completed at the bottom of the backfill. Upon this completion a minimum length of five feet of annular seal shall be placed above the sensing zone (gravel packed interval) to the surface to prevent drainage water from entering the borehole. Variance will be allowed for minimum length of annular seal should 5 feet prove to be impractical due to shallow depth of tank backfill for a small tank. Refer to Figure 2 for a typical monitoring installation herein described.



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure I. Typical Monitoring Facility, Non-Motor Fuel Storage Facility, Shallow Groundwater

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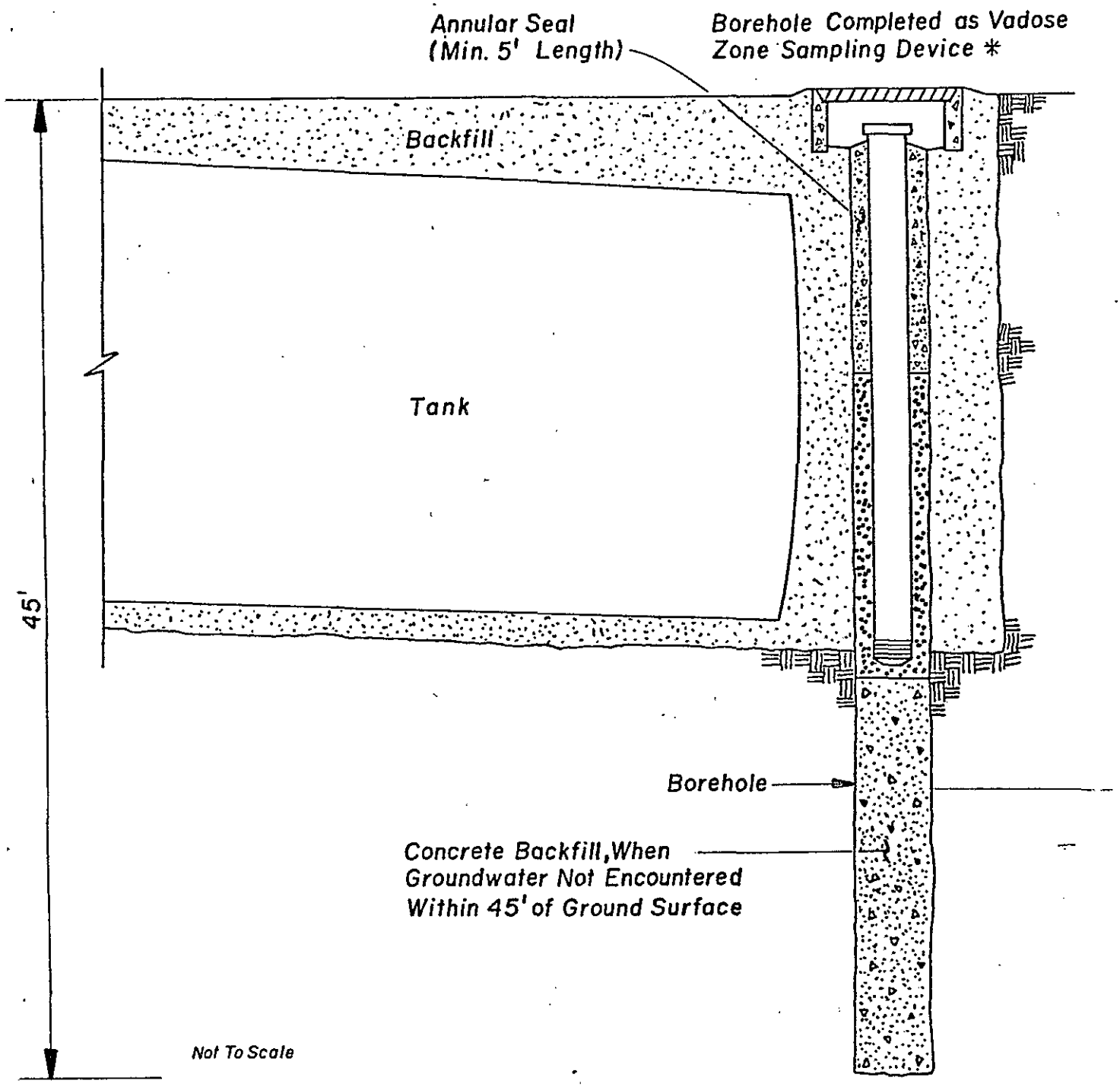

* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 2. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Within Tank Backfill, Unsaturated Conditions EXHIBIT A

If the hole is started in natural formation outside of the tank backfill, the vadose monitoring device is to be completed at a level five feet beneath the tank backfill or, more ideally, in aquifer materials (herein unsaturated) within ten feet of the bottom of the tank backfill. The occurrence of such an ideal situation is determined from the log of the borehole when it was drilled. An annular seal shall be installed above the sensing zone of the monitoring device, which shall be from a level one foot below that of the tank backfill bottom, to the surface. Refer to Figure 3 for the typical monitoring installation herein described.

Adequacy of Monitoring Coverage - The number of monitoring wells, or combination of groundwater and vadose monitoring wells shall depend upon the size of the storage facility (individual tank or cluster of tanks). One well or combination shall be required for each dimensional length, or collective length when tanks are clustered, of 35 feet or less. Where more than one well or combination is required, they shall be appropriately distributed so as to accomplish optimal distributed coverage, taking into consideration the gradient of groundwater for groundwater monitoring wells and the lower levels of the tank backfill bottom for vadose monitoring wells.

Where groundwater occurs at a depth greater than 45 feet, only the first hole shall be required to make this determination. However, soils samples shall be obtained from the additional wells from levels beneath the tank and the hole shall be continued to a level where the soil becomes apparently free of contaminant as based upon field judgement (but to no greater depth than 45 feet).

Commercial Motor Fuel Storage Facilities

The monitoring well requirement for commercial motor fuel storage shall be essentially the same as for a non-motor fuel hazardous materials storage facility. The only difference in concept is in the extended upper length required in the screened or perforated casing interval of the groundwater monitoring well. As motor fuel products are essentially nonmiscible with water and are lighter than water, they will float on top

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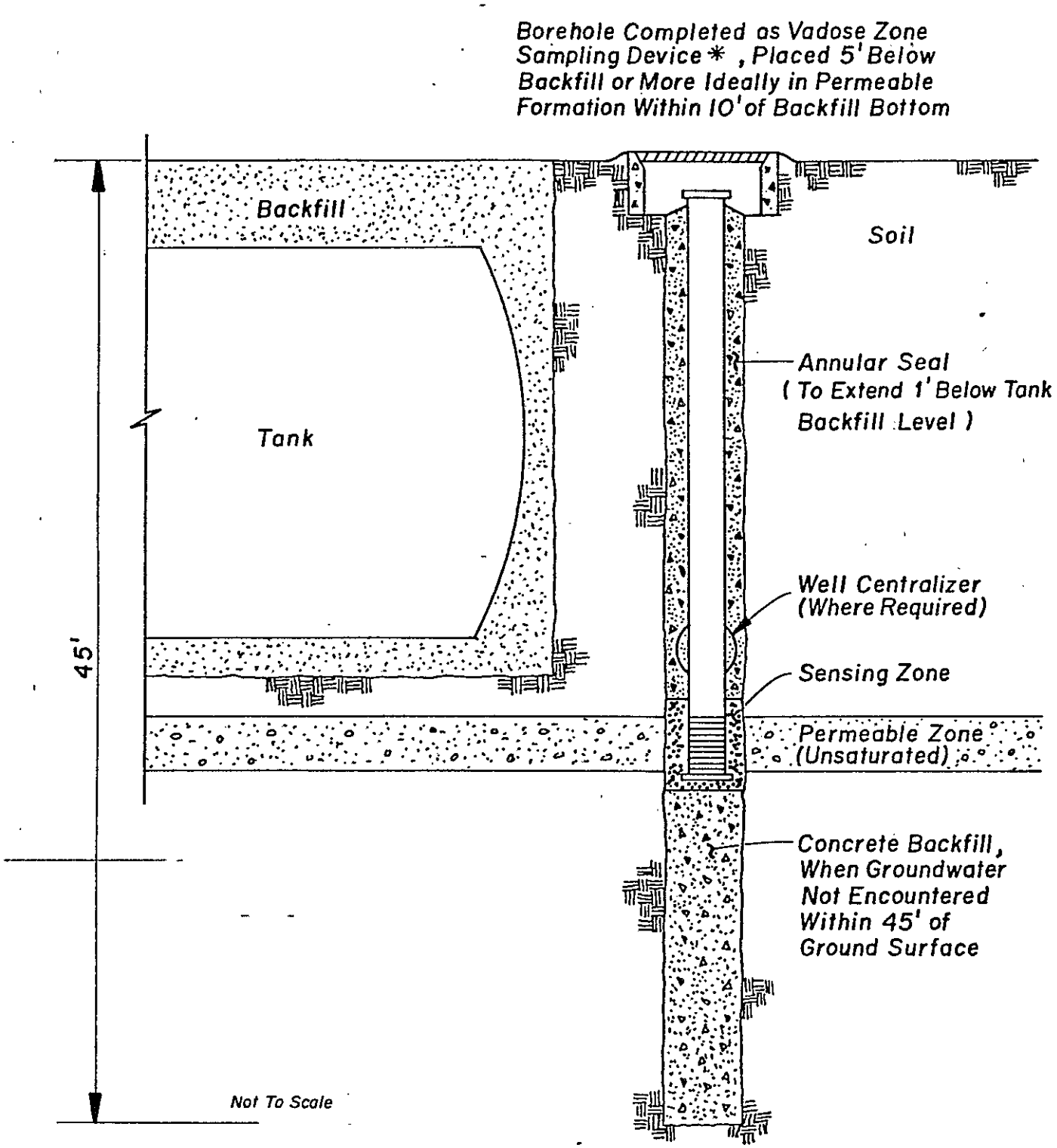

* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 3. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Outside of Tank Backfill, Unsaturated Conditions EXHIBIT A

of the water table. The important interval to monitor is at the motor fuel-water interface. Since groundwater levels fluctuate seasonally and on a long-term basis, the screened interval would have to be necessarily longer to accommodate these fluctuations. This consideration may also apply to certain non-motor fuel hazardous materials that exhibit such similar properties as motor fuels.

All other well requirements, including the possible need of a combination groundwater-vadose monitoring installation, are the same as for the monitoring of non-motor fuel storages. Refer to Figure 4 for monitoring installation herein described. Also refer to Figures 2 and 3 where they apply to cases where the groundwater is not encountered within a depth of 45 feet.

The required soils sampling and testing shall be the same as for non-motor fuel storage facilities. These procedures are outlined in the body of the Guidelines. Also water sampling procedure and field testing of water samples are outlined in the body of these Guidelines.

Individual Agricultural and Suburban Motor Fuel Storage Facilities

The monitoring requirement of individual agricultural and suburban motor fuel storage facilities shall be accomplished by the installation of one well to be placed within the tank backfill and shall be extended to the bottom of the backfill, regardless of the depth to groundwater. This well shall be placed at the lowest level of the backfill if known. The lower one-half of the total length of this well shall be screened or the casing shall be perforated and gravel packed. An annular seal of concrete, neat cement, cement grout or a thick slurry of bentonite shall be palced above the gravel pack extending to the surface to prevent surface drainage from entering the well. Such a well is referred as an "interface vadose monitoring well" when groundwater is not encountered as the sensing zone monitors the backfill-natural formation interface. Refer to Figure 5 for such a typical installation.

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#102-K

COMMENTS AND PROPOSALS OF THE
CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION
ON THE THIRD DRAFT OF THE PROPOSED STATE WATER
RESOURCES CONTROL BOARD REGULATION FOR THE
STORAGE OF HAZARDOUS SUBSTANCES

The California Independent Oil Marketers Association (CIOMA) respectfully submits to the State Water Resources Control Board (Board) for consideration the following comments and proposals concerning the regulation, design, construction, and operation of underground storage tanks containing hazardous substances developed in the third draft of proposed regulations dated December 28, 1984.

The following is a detailed discussion of CIOMA's specific concerns, comments, and proposals.

1. Article 4 - Existing Underground Storage Tank Monitoring Standards

The essence of this Article is to set forth eight monitoring alternatives for all owners of existing underground storage tanks who cannot implement a visual monitoring system pursuant to Section 2642 of this Article.

Since every CIOMA member will be affected by the content of these monitoring alternatives for their existing underground storage tanks, this Article, more than any other Article in the proposed regulations, will have the most far reaching economic impact on their individual businesses.

First, from a strictly technical point of view, Article 4 provides the owner/operator with eight monitoring alternatives. However, from a practical point of view of implementation and follow-through, the alternatives available to owners of underground storage tanks containing motor vehicle fuels is far less than eight.

Alternatives 5 and 6 were proposed and specifically tailored for motor vehicle fuel tanks.

The major monitoring criteria for alternative 5 is inventory control. To provide backup monitoring protection this alternative also requires the installation of pipeline leak detectors for pressurized piping as well as tank tightness tests. Since the allowable inventory variations in this alternative are so unnecessarily restrictive, as a practical matter, alternative 5 is really only available to those very few low volume, large capacity tank owners.

Alternative 6 has somewhat less restrictive allowable inventory variations, however, this alternative also requires pipeline leak detectors on pressurized piping, annual tank tightness tests, soil analysis, and vadose monitoring or ground water monitoring. Given the magnitude of the monitoring requirements in this alternative, this alternative is really no alternative at all for petroleum tank owners since alternatives 2, 3, or 4 are qualitatively and quantitatively less stringent.

A petroleum tank owner could implement alternatives 2, 3, or 4 without the requirement of daily inventory control, the

installation of leak detectors, or the performance of an annual tank tightness test.

With the practical elimination of alternatives 5 and 6 for motor vehicle fuel tank owners, it would initially appear that alternative 4 may be a viable alternative where the ground water is less than 30 feet deep. However, alternative 4 is effectively removed as an alternative since Section 2641(c)(4)(A)(ii) does not allow this choice if ground water "has actual or potential beneficial uses... or is hydraulically connected to ground or surface water which has actual or potential uses...". CIOMA's technical consultants have found that this requirement in Section 2641 effectively vitiates the use of this alternative since all shallow ground water could be interpreted as having some beneficial use.

With the practical elimination of alternative 4, an owner would then turn to the availability of alternative 3. This alternative cannot be used if the first ground water is less than 100 feet and has actual or potential uses. In other words, this alternative would be appropriate for locations where ground water is greater than 100 feet or if first ground water has no actual or potential uses. As a practical matter, this alternative would probably only be available for an extremely small percentage of tanks in California.

Since alternatives 1 and 7 are, again, only for a very small percentage of motor vehicle fuel tank owners, this only leaves alternative 2 as a viable and practical alternative.

While alternative 8 is specifically tailored for small businesses, the period of time given for the installation of Article 3 tanks is not practical given the large capital outlays required to replace existing tanks.

The enabling legislation clearly provided for monitoring alternatives with such alternatives to be developed by the Board. Again, the practical effect of the alternatives available in the regulations is to provide no alternatives at all.

Second, while the regulations allow, in theory, the use of inventory control as a means of monitoring motor vehicle underground storage tanks, in all practicality, the inventory variations proposed by the regulations are so unduly restrictive that, in the vast majority of cases, would effectively vitiate the use of inventory control all together as a monitoring alternative. The practical effect of implementing these inventories variations force the owner/ operator to implement another more costly monitoring alternative in the regulations.

These overly restrictive variations are in direct conflict with Health and Safety Code Section 25284.1(b)(3) which provides that "for monitoring tanks containing motor vehicle fuels, daily gauging and inventory reconciliation by the operator." In allowing inventory control for motor vehicle fuel tanks, the law implicitly mandates the Board, in adopting regulations pursuant to Chapter 6.7 to adopt inventory reconciliation performance standards that are both reasonable and workable.

Furthermore, both alternatives 5 and 6 require the owner/ operator to implement other monitoring criteria in conjunction

with inventory reconciliation. These additional monitoring requirements in each alternative provide additional and substantial protection of California's ground water. There is no practical nor legal rational for such strict inventory variations when these other monitoring requirements are proposed.

Third, if the inventory variations proposed by the regulations were implemented by the Board, most owner/operators would find themselves implementing the response plan proposed by the regulations on an almost daily basis after exceeding allowable variances. The implementation of the response plan by the owner/operator would, in most cases, not be the result of a leaking tank, but would be caused by gain or loss of product by such factors as product temperature variations. The creation of these false-positives would create two types of owner/operators. The first type would assume that the variation was not the cause of a leaking tank and would amend the inventory records to reflect that conclusion. The second owner would comply with the letter of the law and would implement expensive evaluation procedures on a daily basis only to find the variation was not the cause of a leaking tank.

CIOMA believes it was not the intent of the Board nor the author of Chapter 6.7 to create these two types of situations.

CIOMA would urge the Board to direct the staff to implement reasonable and workable inventory reconciliation regulations in alternatives 5 and 6 which would be consistent with the intent of the enabling legislation as well as the general concensus

of the Board that tank testing and inventory control is an effective monitoring alternative for motor vehicle fuel tanks.

The logic and rational of the approach taken by the regulations to monitoring alternatives is questionable and CIOMA requests a complete and full explanation as to why such an approach has been proposed.

The following are comments and proposals to specific sections within Article 4:

Section 2640(d)
Comments

This subsection specifically mandates all owners of existing underground storage tanks to implement one of the monitoring alternatives specified in Section 2641. Section 25284.1(b) of the Health and Safety Code states that "alternative methods of monitoring the tank on a monthly, or more frequent basis, may be required by the local agency, consistent with the regulations of the Board". The clear intent of the enabling legislation was to provide the local agency with authority and discretion in requiring alternative methods of monitoring so long as such methods were consistent with the regulations of the Board. The clear intent of this subsection is to take that discretion and authority away from the local agency which such intent is inconsistent with Section 25284.1(b) as well as being beyond the authority of the Board in implementing regulations pursuant to Chapter 6.7.

Proposal

CIOMA proposes adding a sentence to this subsection to read as follows:

"Notwithstanding the foregoing, the local agency may propose alternative methods of monitoring the tank so long as such alternative methods are consistent with the regulations of the Board."

Section 2640(e)
Comments

This section provides that monitoring methods and frequencies specified in Section 2641 are minimums. Again, Section 25284.1(b) of the Health and Safety Code clearly grants to the local agency the authority and discretion to require alternative methods of monitoring so long as such alternative methods are consistent with the regulations of the Board. There is no language contained in the enabling legislation which mandates the Board to specify the monitoring alternatives proposed as minimums. The clear intent of Chapter 6.7 of the Health and Safety Code is to protect the quality of California's ground water.

The first sentence of Section 2640(b) of these proposed regulations reads as follows:

"The objectives of the monitoring program for existing underground storage tanks are to detect unauthorized releases before ground water is effected."

If "minimums" are to be proposed by the Board, the minimum should be the protection of California's ground water as specified in Section 2640(b) and not the monitoring alternatives proposed by the Board in Section 2641 of the regulations.

Proposal

CIOMA proposes amending the first full sentence of Section 2640(e) to read as follows:

"The monitoring methods and frequency specified in each monitoring alternative are listed in Section 2641 of this Article."

Section 2641(c)(2)(C)
Comments

This subsection sets forth requirements for the number of ground water wells, there design and installation, as well as the analysis of samples collected from those wells. The requirements found in this subsection incorrectly assume that for each underground storage tank the product contained within the tank is the same, the rate of ground water movement and its depth is the same, and the permeability of the geologic sediments surrounding the tank are the same.

Proposal

CIOMA proposes that the number and spacing of the required wells as outlined in Table 4.1 should be determined by the local agency or a registered engineer, geologist, or certified engineering geologist retained to implement the program. CIOMA further proposes that this subsection be modified to require that a minimum of one well be located in the downgradient direction and that other wells be constructed after the need has been demonstrated by the local agency.

Section 2641(c)(3)(A)
Comments

This subsection provides that monitoring alternative 3 cannot be used if first ground water is less than 100 feet deep and this ground water has actual or potential beneficial uses. The definition of ground water contained in this subsection is

ambiguous and confusing since the Department of State Water Resources in Bulletin 118 dated September, 1975 has defined all ground water basins in the State of California to consist of either domestic, agricultural, municipal, or industrial supply water, even in those locations where the depth and usable capacity of the ground water is unknown. The definition of ground water as proposed totally negates the opportunity to use monitoring alternative 4 for tank monitoring. Alternative 3 is also negated if ground water is less than 100 feet.

Proposal

CIOMA proposes that a more usable and practical definition of ground water be approved by the Board.

CIOMA further proposes that owners be exempt from the construction of ground water wells if the highest ground water level is expected to be more than 50 feet from the ground's surface. The rational being, in most cases, a 100 foot ground water well would be ineffective in rapidly detecting a leak. Requiring a well of greater depth than 50 feet would be an extremely ineffective method for early leak detections since the first appearances of the product at the ground water monitoring point may be months or even years depending on the character of the underlying sediment, the type of product stored, and the rate of leakage.

Section 2641(c)(3)(B)
Comments

This subsection requires the owner to make a determination as to whether first ground water is significantly deeper than 100 feet by on-site borings. The language "significantly deeper"

contained in this section is ambiguous and uncertain. In addition, since ground water monitoring requirements in the regulations are not specified for ground water greater than 100 feet in depth, an on-site exploratory boring greater than 100 feet in depth is unwarranted.

Proposal

CIOMA proposes that the language "significantly deeper" contained in this subsection be defined.

CIOMA further proposes that owners be exempt from the construction of ground water wells if the highest ground water level is expected to be more than 50 feet from the ground's surface. The rational being, in most cases, a 100 foot ground water well would be ineffective in rapidly detecting a leak. Requiring a well of greater depth than 50 feet would be an extremely ineffective method for early leak detections since the first appearances of the product at the ground water monitoring point may be months or even years depending on the character of the underlying sediment, the type of product stored, and the rate of leakage.

Section 2641(c)(2)(D) & (c)(3)(D) & (c)(4)(C)
Comments

These two subsections seem to imply that all soil samples should be analyzed. CIOMA's technical consultants have determined that it is unnecessary to require the owner/operator to analyze each soil sample.

Proposal

CIOMA proposes that the owner/operator only be required to analyze pertinent soil samples as determined by the owner/ oparator's technical consultant.

Section 2641(c)(5)(B)(v)
Comments

In referring to previous comments contained herein, the allowable throughput error specified in this section of 0.15 is both unreasonable and unworkable.

Proposal

CIOMA proposes that the throughput error of .15 percent in this subsection be amended to .5 percent.

Section 2641(c)(6)
Comments

As well as inventory reconciliation, this monitoring alternative requires the owner/operator to implement a tank testing program, install pipeline leak detectors, implement vadose zone or ground water monitoring, and implement soils testing.

Given the extensive nature of the requirements under this alternative, other than inventory reconciliation, the inventory variation figures specified in this alterna- tive are unnecessary. These other back-up systems would provide adequate ground water protection.

This particular monitoring alternative was specifically designed for those tanks containing motor vehicle fuels. In analyzing this alternative as well as the other alternatives proposed, alternatives 2, 3, and 4 to be less expensive and more practical to implement than this alternative 6.

While specifically designing this alternative for motor vehicle fuel tanks, its overly restrictive and more numerous requirements virtually mandate the owner/operator to consider alternatives 2, 3, and 4. While petroleum products certainly pose a potential hazard to California's ground water, the regulations imply that petroleum products are the most dangerous, hazardous materials stored in underground tanks since the alternatives specifically designed for petroleum products are inherently the most stringent and expensive.

Proposal

To make this alternative at least somewhat more practical and usable, CIOMA proposes eliminating subsections (i), (ii), and (iii) from this subsection. As a result of the other extensive requirements this alternative mandates, CIOMA would further propose that the yearly tank testing requirement be deleted.

Section 2641(c)(7)(B)(iv)
Comments

This subsection sets forth the allowable variances prior to other measures required to be implemented by the owner/operator. In reviewing this subsection CIOMA has found what appear to be two technical errors.

Proposal

The five gallon variance should be corrected to read 50 gallons and the word authorized in this section should be changed to read unauthorized.

Section 2641(c)(8)
Comments

This subsection entitled "Interim Alternative Monitoring" allows the owner/operator, after meeting various requirements, to implement a tank replacement program within a period of no longer than three years. For most owner/ operators raising sufficient capital for tank replacement within a three year period would be prohibitive.

As a result of the overly restrictive nature of alternatives 5 and 6, if the regulations were adopted as proposed, many of CIOMA's members would seriously consider the implementation of this monitoring alternative.

While a phase-in program for tank replacement is certainly necessary, the extremely large capital expenditures involved in installing new double-walled tanks require a longer period than the proposed three year period. Additionally, CIOMA suggests several other amendments to this monitoring alternative as follows:

Proposal

a. For those small businesses who meet the definition specified in subsection (i) of this section CIOMA proposes increasing the phase-in period to seven years.

b. For those other businesses provided for in subsection (ii), CIOMA would propose the following:

1. Annual tank testing.
2. Inventory reconciliation with no variation figures.
3. Installation of pipeline leak detectors.

4. A written, legally binding, commitment for the installation of new underground storage tanks by the owner/operator pursuant to the provisions of Article 3 within a seven year period with a prorata construction completion commitment over that seven year period.

In both oral and written comments to the public, the Board has emphasized its sensitivity towards the plight of small business and its desire to implement regulations consistent with the continued economic viability of those small businesses. Given the overly restrictive nature of Article 5 and 6, the expense of new Article 3 tanks, and the potential protective benefit to California's ground water, CIOMA would urge the Board to consider the amendments proposed to this alternative which provide a more workable and rational capital outlay for compliance.

Additional Monitoring Alternatives
Comments

The objectives of monitoring standards for existing underground storage tanks are to detect unauthorized releases before ground water is affected as specified in Section 2640 of this Article. It is the specific intent of these regulations and the law to provide a certain degree of discretion in the various local agencies in implementing monitoring alter- natives consistent with these regulations. In order to provide for this general intent more explicitly within the regulations, a specific subsection should be added to this Section 2641 identified as additional monitoring alternatives. If these addi- tional monitoring alternatives are consistent with these regu- lations

and protect California's ground water just as effectively, they should be considered by the local agency.

Proposal

CIOMA proposes that additional monitoring alternatives be made available to the owner/operator subject to local board approval with such alternative being consistent with the regulations adopted by the Board. An example of such an additional alternatives would be as follows:

(9) Inventory Reconciliation, Pipeline Leak Detectors, Vadose and/or Ground Water Monitoring and Soil Testing

(A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation, pipeline leak detectors, vadose and/or ground water monitoring and soil testing.

(B) All pressurized pipelines and suction pipelines shall be monitored.

(C) Vadose and/or ground water monitoring shall be performed in accordance with procedures specified in the Santa Clara County Ground Water Monitoring Guidelines December, 1983 (a copy of these guidelines is attached as Exhibit A). In accordance with these guidelines, in order to provide adequate coverage, monitoring requirements may vary from one storage facility to another based upon the depth of ground water beneath the facility, the size of the facility, and

upon the character and properties of the materials stored.

(10) An owner/operator should have the ability under the regulations to select a monitoring program for his underground storage tanks by using and selecting various monitoring criteria from the alternatives proposed in developing a monitoring program specifically tailored for his particular situation so long as the monitoring program complies and is consistent with Section 2640(b) of these regulations and is approved by the local agency. This selective ability by the owner/operator is consistent with Chapter 6.7 of the Health and Safety Code.

Moreover, this selective ability would take into consideration the product contained in the tank, the rate of ground water movement, and the permeability of the geologic sediments surrounding the tank.

Furthermore, this noncategorizing approach to monitoring would give the owner/operator and the local agency the flexibility to monitor the underground tanks within the economic means of the operator and the intent

of the law and Section 2640(b) of these regulations.

For example, if an owner/operator chose either alternative 2, 3, or 4, and already had in place inventory reconciliation and pipeline leak detectors, then it would be reasonable for the local agency to allow a variance from some of the monitoring criteria contained in alternatives 2, 3, or 4. Daily inventory control as well as other alternative monitoring methods would detect a rapid rate of product loss long before the leakage could be discovered by ground water wells. In other words, in this particular situation, with inventory reconciliation and pipeline leak detectors, fewer and shallower ground water wells would be appropriate.

Section 2641(c)(6)(F)
Comments

This subsection allows for analysis of samples to be collected by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. This subsection further requires laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods. Since, by definition, laboratory analysis is more accurate than visual observation

or field analysis, the last sentence of this subsection appears to be inconsistent with the balance of the subsection.

Proposal

CIOMA proposes eliminating the last complete sentence of this subsection which reads as follows:

"If samples are analyzed by visual observation or field analysis the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods."

Section 2643(e) and 2643(g)
Comments

These two subsections require the owner/operator to report the tank testing results to the local agency. The language within these two subsections makes it unclear as to whether the owner/operator is to report both the establishment of a gain in product within the tank as well as information concerning leakage. Consistent with the intent of the enabling legislation as well as these proposed regulations the data concerning tank leakage should be the only reportable data to the local agency.

Proposal

CIOMA proposes amending these two subsections to provide that test results need only be reported to the local agency if the test results establish a leak.

Section 2644(e)
Comments

This subsection requires the owner or operator to submit a statement under penalty of perjury to the local agency verifying the inventory reconciliation data developed by the

facility. Section 25284.1(b)(3) of the Health and Safety Code only requires that inventory records be kept on file for one year and are reviewed on a quarterly basis. Requiring the owner/operator to submit a statement to the local agency verifying the inventory data is clearly beyond the record keeping requirements of the law. Moreover, this requirement is simply an additional unnecessary paperwork burden on the owner/operator. The submission of quarterly reports is unnecessary when those records are available at the station or facility for inspection by the local agency.

Proposal

CIOMA proposes amending this section as follows:

"The owner or operator shall keep on file for a period of one year the inventory records required by this subsection and shall be review those records quarterly."

Section 2644(f)
Comments

Among other things, this subsection requires the operator or permitee to implement subsections (1), (2), (3), and (5) if inventory reconciliation indicates a gain of hazardous substances greater than that specified. Section 25284.1(b)(3) of the Health and Safety Code makes quite clear that the operator or permitee shall implement other emergency measures only when there is a shortage greather than the amount which the Board shall specify by regulation. Requiring the operator to implement emergency measures when a gain is realized is unnecessary and beyond the provisions of Chapter 6.7 of the Health and Safety Code.

Proposal

CIOMA proposes eliminating the second full sentence of this subsection (f).

Section 2645 - Soil Testing
Section 2645(c)
Comments

This subsection requires that soil samples be taken at intervals of five feet or less beginning at the "ground surface". Since the intent of the regulations is to find spills from the underground tank, the language "ground surface" is confusing and ambiguous.

Proposal

CIOMA would propose deleting the words "ground surface" and substituting in the words "tank bottom".

Section 2645(j) & (k)
Comments

These two subsections seem to require that all samples be analyzed.

Proposal

CIOMA proposes that subsection (j) be amended to provide that only selected samples between the tank bottom and the ground water table be analyzed by field or laboratory methods. CIOMA further proposes that only two soil samples be analyzed beneath the tank bottoms by the laboratory. The samples must be of receding depths, and start from the first five foot interval directly beneath the tank bottom. CIOMA further proposes that subsection (k) be amended to provide that only appropriate samples be analyzed for those constituents that have been stored in the tank.

Section 2645(b)
Comments

This subsection requires all undisturbed soil samples be recovered from borings resulting from the installation of vadose or ground water monitoring. CIOMA's technical consultant has determined that soil samples cannot be taken in a completely undisturbed fashion.

Proposal

CIOMA proposes adding the word relatively at the beginning of this subsection.

Section 2645(h)
Comments

This subsection provides that composite samples from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis. By definition, a composite sample is a best representation of materials from the same depth from each boring. Best representative samples cannot be made without loss of soil constituents.

Proposal

CIOMA proposes eliminating the following language from this subsection:

"If such samples can be made without loss of constituents prior to analysis."

Section 2645(m)
Comments

This subsection provides that if soil analysis determines that an unauthorized release has occurred, the permittee shall report the release and repair or abandon the tank.

This subsection should only apply to those underground tanks actually found to be leaking.

Proposal

CIOMA proposes that this subsection be amended to read as follows:

If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or abandon the underground storage tank, if it is found to be leaking pursuant to Article 6 or 7 of this subchapter.

Section 2646 - Vadose Zone Monitoring
Section 2646(c)
Comments

This subsection provides that wells for vapor monitoring shall be fully perforated.

Proposal

CIOMA proposes adding a sentence to this subsection to read as follows:

"This design can create a conduit for the vertical movement of contaminants, hence perforations should not span low permeability zones."

Section 2646(d)
Comments

This subsection requires that vadose zone monitoring points be selected as to give the earliest possible warning of any unauthorized release.

Proposal

CIOMA would propose deleting from this subsection the words "give the earliest possible warning" and substitute in their place the following:

"Provide adequate detection"

Section 2646(f)(1)
Comments

This subsection requires that grain size distribution, type and homogeneity of native soils, range of moisture contents of the backfill and native soils be determined in order to implement vapor monitoring. CIOMA's technical consultant has determined that these are unnecessary requirements since there are no reportable correlations between vapor levels and the grain size, type, homogeneity, and range of moisture content of backfill and native soils.

Proposal

CIOMA proposes eliminating the last complete sentence of this subsection including subsections (A), (B), and (C).

Section 2647 - Ground Water Monitoring
Section 2647(c)
Comments

This subsection provides that wells shall not extend through clay layers that are below the water table, extensive and at least five feet thick. CIOMA's technical consultants have found that there is no method of determining the extent of clay layers by drilling one boring.

Proposal

CIOMA would propose rewording the second sentence of this subsection to read as follows:

"However, wells shall not extend through clay layers that are at least five feet thick and below the water table."

Section 2647(d)
Comments

This subsection requires that well casing be factory perforated from a point five feet above the bottom cap to a point ten feet above the highest anticipated ground water level. As worded, the requirements of this sesction could provide a mechanism for the movement of contaminants.

Proposal

CIOMA proposes this subsection to read as follows:

"Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point five feet above the bottom cap to a point ten feet above the highest anticipated unconfined ground water level. Monitoring wells penetrating into a locally confined aquifer should be perforated in the confined zone and the confining layer should be sealed with an appropriate material.

Section 2647(g)
Comments

This subsection requires that filter packs shall extend two feet above the top of the perforated zone. CIOMA's technical consultants have determined that in many instances this may not be desirable.

Proposal

CIOMA proposes rewording this subsection to read as follows:

"Filter packs shall normally extend two feet above the top of the perforated zone."

Section 2648 - Construction and Sampling Methods
Section 2648(h)
Comments

This subsection requires that all ground water monitoring wells shall be appropriately developed until the discharge water contains less than ten ppm solids. CIOMA's technical consultants have determined that this is a performance specification and, in some circumstances, may be difficult to meet in many areas. The presence of some sediment does not generally alter the identification of contaminants.

Proposal

CIOMA proposes rewording this subsection to read as follows:

"All ground water monitoring wells shall be appropriately developed."

Section 2648(p)
Comments

The second sentence of this subsection states that highest anticipated high ground water levels shall be determined by a review of water level measurements on record for wells within one mile of the site. CIOMA's technical consultants have found this requirement to be unnecessarily restrictive; and, may not be applicable in all situations.

Proposal

CIOMA proposes rewording the second sentence of this subsection to read as follows:

"Highest anticipated seasonal ground water levels shall be determined, where possible, by a review of seasonal water level measure- ments on record for wells within a reasonable distance from the site."

In certain areas, water well records are confidential. The public has no access, nor are allowed to review these records. Should records be denied, the tank owner would be required to drill an exploratory boring.

CIOMA further proposes eliminating in its entirety the last full sentence of this subsection for the reasons stated above.

Section 2648(p)(3)
Comments

This subsection requires exploratory borings to be a minimum depth of 100 feet for alternatives 2, 3, 5, and 6 or to a minimum depth of 30 feet for alternative 4. As worded, this subsection provides no limit to the depth of drilling. Moreover, the regulations provide no guidelines for monitoring ground water at greater depths than 100 feet. Drilling beyond 100 feet would be expensive and unwarranted.

Proposal

CIOMA proposes changing the word "minimum" in this subsection to "maximum". CIOMA further proposes deleting the reference to alternative 5 in this subsection since alternative 5 would not apply to this subsection.

2. Article 3 - New Tank Construction and Monitoring Standards

Section 2635(b)(4)
Comments

This subsection requires single wall primary containers of steel and the outer surface of double-walled tanks to be protected by a properly installed and monitored cathodic protection system whether or not the tanks are coated. If the tank is properly coated it is unnecessary for the owner/operator to

install a cathodic protection system since coating the tank would provide for corrosion resistance.

Proposal

CIOMA proposes that the first full sentence of this subsection be deleted and in its place the following:

"Single-wall primary containers of steel and the outer surface of double-walled tanks constructed of steel shall be protected by either a properly installed, maintained, and monitored cathodic protection system with or without coatings or listed corrosion resistant materials, non-metallic reinforced plastic coatings, composites, or equivalent systems, which have been checked using electrical holiday testing.

Section 2635(b)(9)(A)
Comments

This subsection requires the filling operation to be controlled by the facility operator during filling of the underground storage tank. Based on industrywide practice, it is unnecessary to require the facility operator to visually monitor the filling operation when such an operation is routinely monitored and controlled by the delivery vehicle operator.

Proposal

CIOMA proposes that this subsection read as follows:
"Both the fluid level is visually monitored and the filling operation is controlled by the facility operator or the delivery vehicle operator during filling of the underground storage tank, or"

Section 2635(b)(9)
Comments

This subsection requires the owner/operator to install a spill catchment basin around the fill pipe to prevent subsurface spillage. The requirements provided in subparagraphs (A), (B), and (C) of this subsection provide more than adequate protection from subsurface spillage. Moreover, Section 25284(c) of the Health and Safety Code does not require a spill catchment basin when tank filling operations are visually monitored and controlled by the facility operator. The requirements of subparagraphs (A), (B), and (C) provides sufficient overfill protection.

Proposal

CIOMA proposes rewording subsection (9) to read as follows:

"The overflow protection system required in subsection (b)(8) of this section shall be waived for underground storage tanks containing motor vehicle fuels if the requirements of subsections (A), (B), and (C), of this subsection (9) are met."

3. Article 10 - Permit Application, Annual Report and Trade Secret Requirements

Section 2712(c)
Comments

This subsection requires the owner/operator to maintain on-site, written records of all monitoring performed for a period of at least three years from the date the monitoring was performed. As a practical matter, this subsection would require the owner/operator to store at the facility site over 1,000 daily inventory reports if the owner used inventory reconciliation as a monitoring alternative. At many gasoline self-serve units

the storage area is very minimal in the operator booth. The storage of such a voluminous amount of materials at these particular units would be extremely difficult.

Proposal

CIOMA proposes eliminating the words "on-site" from the first full sentence of this subsection.

4. Article 1 - General

Section 2610(b)
Comments

Section 2610(b) states "if the operator of a tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to: monitor the tank; maintain appropriate records; implement reporting procedures as required by the permit; and properly close the tank as required by the permit." There is no basis in Chapter 6.7 of the Code nor in any statute or case law that CIOMA is aware of that would mandate a contractual relationship be entered into between an owner and an operator. It is well settled that the people of the State of California have the freedom, but not the obligation to contract. Moreover, in the majority of the leases existing between an owner and an operator, there is probably no provision which requires an operator to contractually obligate himself to the owner to meet prospective legislative mandates.

Proposal

CIOMA proposes that the requirement of a written contract be eliminated.

CIOMA invites the Board and its staff to call or meet for additional information, comments, and proposals.

Respectfully submitted at Sacramento, California on January 18, 1985.

CALIFORNIA INDEPENDENT OIL MARKETERS ASSOCIATION

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SUMMARY

The purpose of the monitoring program is to detect as early as possible any leakage from an underground hazardous material storage facility should one occur. To accomplish this, site-specific monitoring facilities are to be constructed adjacent to the storage facility and are to monitor either the first aquifer zone or the immediate unsaturated zone beneath the storage facility, depending upon the depth of the water table beneath the facility.

This monitoring program as herein presented is one means to validate the storage facility performance and is to be used in conjunction with the Hazardous Materials Storage Permit Ordinances as adopted by the cities and the County of Santa Clara. It is the purpose and intent of the Permit Ordinance to protect groundwater supplies from contamination which might result from leakage of underground storage facilities.

These Guidelines will outline requirements, recommendations and suggested alternatives for the proper monitoring of existing underground storage facilities. These Guidelines also provide a monitoring schedule for the installation. Any unusual or unique installations will be handled on a case by case basis.

Classification of Hazardous Materials Storage Facilities

Non-Motor Fuel Storage

Non-motor fuel storage facilities include all commercial and non-commercial underground tanks for the storage of non-motor fuel hazardous materials as described in the Hazardous Materials Storage Permit Ordinances. Bulk storages of waste oil not located at retail outlets (service stations) are included in this classification as such storages could contain other than waste petroleum products.

Commercial Motor Fuel Storage

Commercial motor fuel storage facilities include all underground tanks for storage of motor fuels which are intended for commercial resale, including retail and wholesale

outlets and bulk storage facilities. Also included are bulk storages for transit stations and industrial and municipal facilities as well as individual agricultural and suburban storages greater than 1,000 gallons.

Individual Agricultural and Suburban Motor Fuel Storage

Individual agricultural and suburban motor fuel storage facilities include non-commercial underground tanks of less than 1,000 gallons for motor fuel storage on agricultural properties, on suburban homesites, and on business sites where fuel is stored solely for use by the owner/resident in the course of his business or for his vehicles and equipment. All motor fuel storages for commercial resale are excluded from this classification.

For motor fuel storage, whether it be commercial, agricultural or suburban, the Administering Agency of the Permit Ordinance may reclassify the storage facility on an individual basis. Such individual reclassification may be in accordance with an unusual condition of use or the size of the storage facility.

Monitoring Requirements

In order to provide adequate coverage, monitoring requirements may vary from one storage facility to another based upon the depth of groundwater beneath the facility, the size of the facility and upon the character and properties of the materials stored.

Non-Motor Fuel Hazardous Materials Storage Facilities

Shallow Groundwater Conditions - A groundwater monitoring well shall be constructed at a storage facility where groundwater occurs at a shallow depth, defined as within 45 feet of the surface. Oftentimes the precise depth to groundwater is not known at a storage facility site unless a specific monitoring well exists within 500 feet of the site. In cases where the precise depth to groundwater is not known, the procedure is to drill a hole within the tank backfill or within ten feet of the storage tank down to groundwater or to a maximum depth of 45 feet if groundwater is not encountered. The hole is to be placed on the estimated down groundwater gradient side of the storage

EXHIBIT A

facility, as based upon professional judgement. The hole is to be carefully logged and soils samples obtained for laboratory tests in order to determine concurrent performance of the tank. Soils samples are to be obtained, starting at the bottom of the tank, every five feet to the water table. If water is encountered, a water sample shall be taken. Testing of soil and water samples shall be in accordance with the requirements of these Guidelines.

When the hole is terminated at a depth of 45 feet after failing to encounter groundwater, but in a case where the soils continue to be apparently contaminated based upon field observations, these conditions are to be reported to the enforcing agency. The data will be reviewed and a program for further investigation (which is beyond the scope of this monitoring program) will be initiated where appropriate. All laboratory test results are to be reported to the Administering Agency of the Permit Ordinance (the county or city of jurisdiction).

When groundwater is encountered or known to be within 45 feet of the surface, the drill hole will be extended through the depth of the aquifer to a competent clay layer or aquitard. A competent aquitard is greater than five feet thick. To test the competency of the aquitard or clay layer, the hole must be drilled five feet into it. Then the excess hole is to be backfilled with concrete and the monitoring well shall be completed in the aquifer above it, screening the full thickness of the aquifer. If the clay layer is found to be less than five feet thick, it may be assumed to represent a local lens. Should the first saturated aquifer be greater than 20 feet thick, the well will be completed at a depth of 20 feet below the top of the saturated aquifer.

The screened or perforated interval is to be gravel packed to a minimum of two feet above the uppermost screen or perforated interval. An annular seal of neat Portland cement, cement mix or thick bentonite slurry shall be placed from the top of the gravel pack to the surface.

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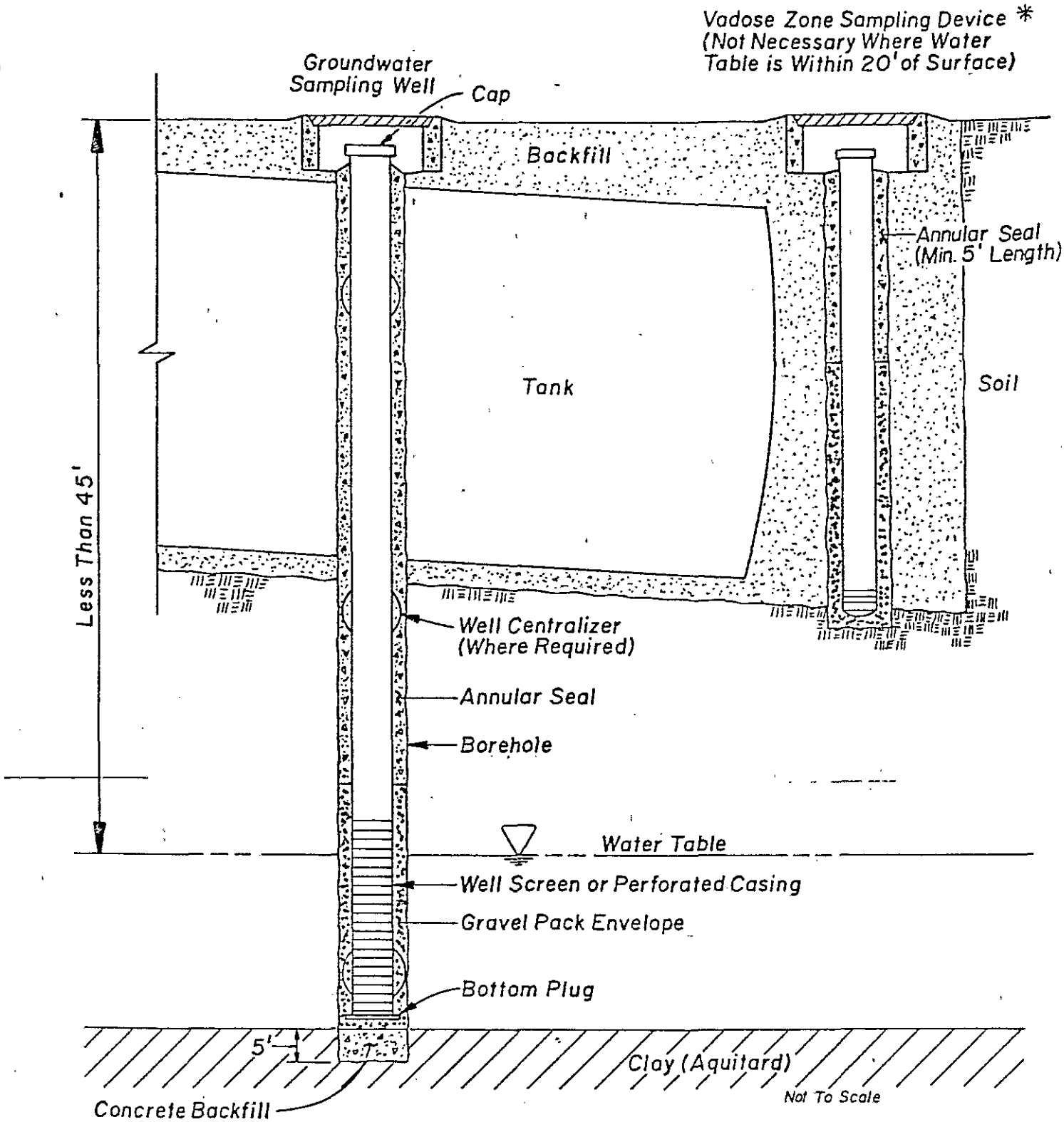
If groundwater is encountered at less than 45 feet but greater than 20 feet from the surface, a vadose (unsaturated zone) monitoring device shall be additionally required so that early detection may be possible by the combination monitoring installation. This vadose monitoring device is to be installed within the tank backfill at the location where the backfill is at the lowest level, if known. The sensing zone of the vadose monitoring device shall be placed at the bottom of the backfill. Required vadose monitoring shall include (1) a vapor monitoring well for volatiles or (2) either a suction lysimeter or an interface well for nonvolatiles. These alternative vadose monitoring devices which may be employed are discussed on Page 25 of the Guidelines. Refer to Figure 1 for a typical example of a monitoring facility herein described, where groundwater occurs at a shallow depth.

Soils sampling procedure, analytical laboratory soils and water testing methods and tests required of the vadose zone monitoring devices are outlined within the body of these Guidelines.

Deep Groundwater Conditions - If groundwater is not encountered within 45 feet of the surface in the drilled hole, the well is to be completed with a vadose monitoring device in the unsaturated zone beneath the tank. The excess hole, drilled to explore for the groundwater and to obtain soils samples, shall be backfilled with concrete and the monitoring device placed within the remaining hole. The concrete backfill is to prevent the hole from serving as a possible conduit for downward movement of any contaminant or drainage water.

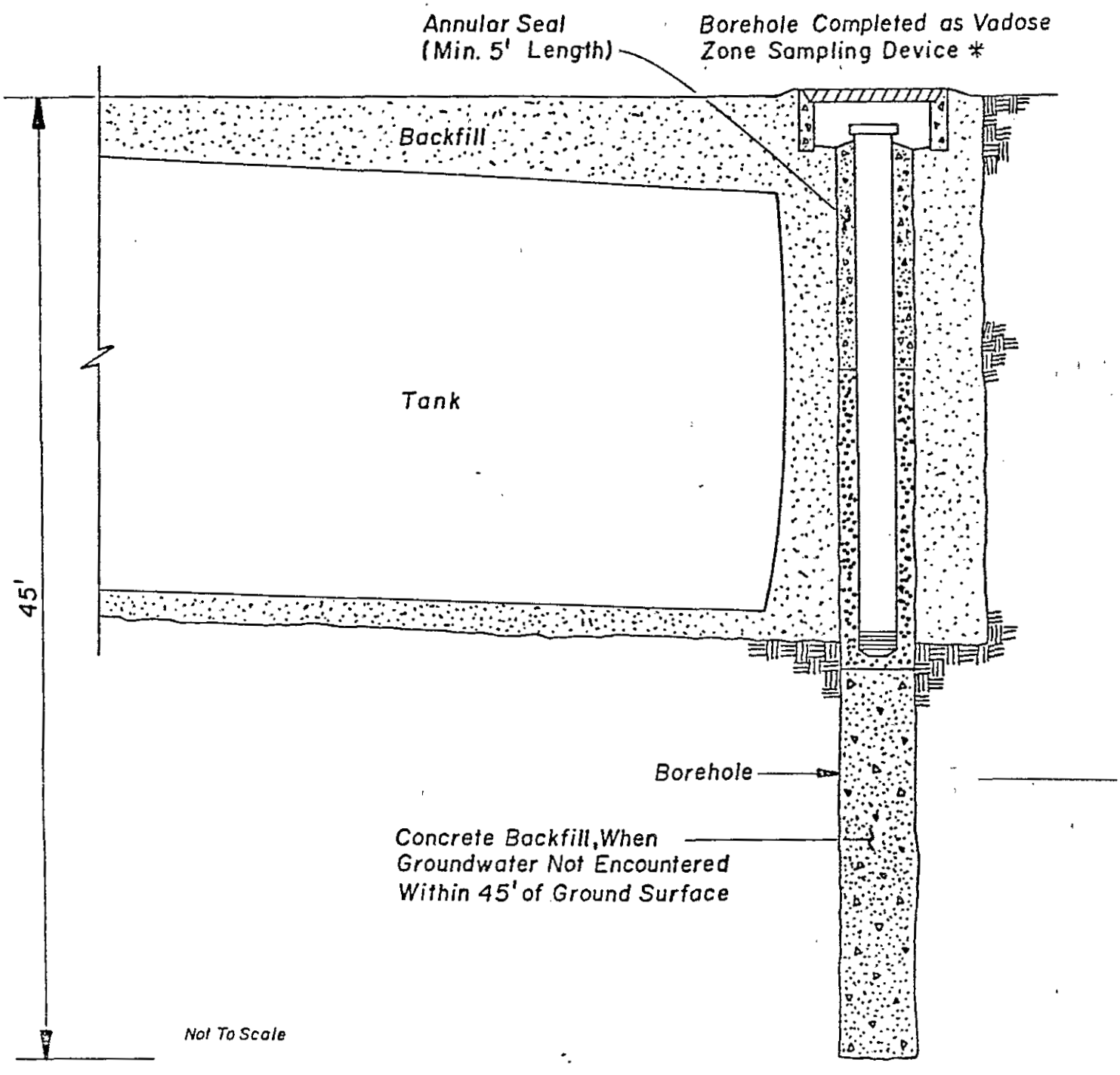
If the hole is started within the tank backfill, the vadose monitoring device shall be completed at the bottom of the backfill. Upon this completion a minimum length of five feet of annular seal shall be placed above the sensing zone (gravel packed interval) to the surface to prevent drainage water from entering the borehole. Variance will be allowed for minimum length of annular seal should 5 feet prove to be impractical due to shallow depth of tank backfill for a small tank. Refer to Figure 2 for a typical monitoring installation herein described.



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure I. Typical Monitoring Facility, Non-Motor Fuel Storage Facility, Shallow Groundwater

EXHIBIT A



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 2. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Within Tank Backfill, Unsaturated Conditions EXHIBIT A

If the hole is started in natural formation outside of the tank backfill, the vadose monitoring device is to be completed at a level five feet beneath the tank backfill or, more ideally, in aquifer materials (herein unsaturated) within ten feet of the bottom of the tank backfill. The occurrence of such an ideal situation is determined from the log of the borehole when it was drilled. An annular seal shall be installed above the sensing zone of the monitoring device, which shall be from a level one foot below that of the tank backfill bottom, to the surface. Refer to Figure 3 for the typical monitoring installation herein described.

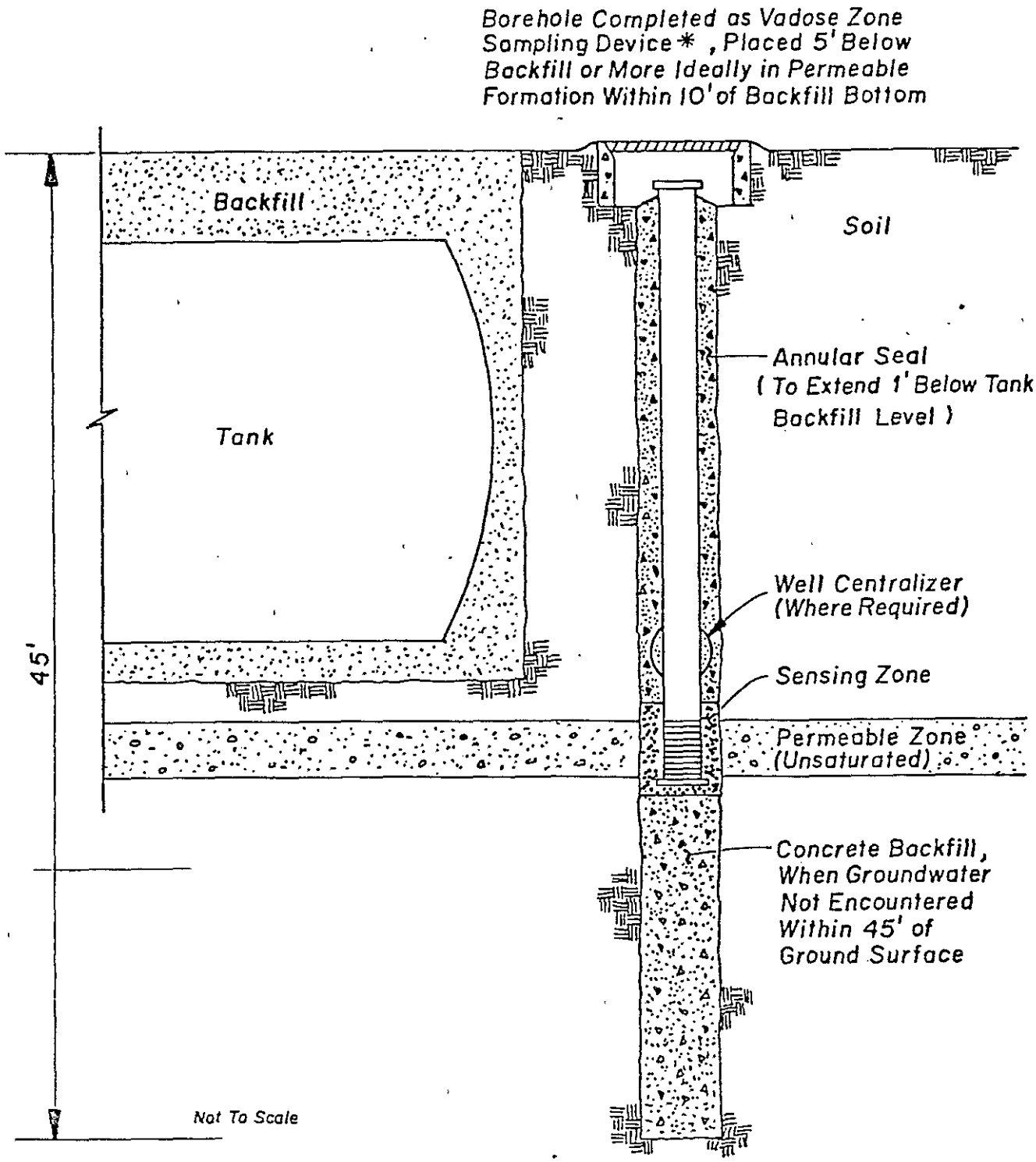
Adequacy of Monitoring Coverage - The number of monitoring wells, or combination of groundwater and vadose monitoring wells shall depend upon the size of the storage facility (individual tank or cluster of tanks). One well or combination shall be required for each dimensional length, or collective length when tanks are clustered, of 35 feet or less. Where more than one well or combination is required, they shall be appropriately distributed so as to accomplish optimal distributed coverage, taking into consideration the gradient of groundwater for groundwater monitoring wells and the lower levels of the tank backfill bottom for vadose monitoring wells.

Where groundwater occurs at a depth greater than 45 feet, only the first hole shall be required to make this determination. However, soils samples shall be obtained from the additional wells from levels beneath the tank and the hole shall be continued to a level where the soil becomes apparently free of contaminant as based upon field judgement (but to no greater depth than 45 feet).

Commercial Motor Fuel Storage Facilities

The monitoring well requirement for commercial motor fuel storage shall be essentially the same as for a non-motor fuel hazardous materials storage facility. The only difference in concept is in the extended upper length required in the screened or perforated casing interval of the groundwater monitoring well. As motor fuel products are essentially nonmiscible with water and are lighter than water, they will float on top

EXHIBIT K



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 3. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Outside of Tank Backfill, Unsaturated Conditions EXHIBIT A

of the water table. The important interval to monitor is at the motor fuel-water interface. Since groundwater levels fluctuate seasonally and on a long-term basis, the screened interval would have to be necessarily longer to accommodate these fluctuations. This consideration may also apply to certain non-motor fuel hazardous materials that exhibit such similar properties as motor fuels.

All other well requirements, including the possible need of a combination groundwater-vadose monitoring installation, are the same as for the monitoring of non-motor fuel storages. Refer to Figure 4 for monitoring installation herein described. Also refer to Figures 2 and 3 where they apply to cases where the groundwater is not encountered within a depth of 45 feet.

The required soils sampling and testing shall be the same as for non-motor fuel storage facilities. These procedures are outlined in the body of the Guidelines. Also water sampling procedure and field testing of water samples are outlined in the body of these Guidelines.

Individual Agricultural and Suburban Motor Fuel Storage Facilities

The monitoring requirement of individual agricultural and suburban motor fuel storage facilities shall be accomplished by the installation of one well to be placed within the tank backfill and shall be extended to the bottom of the backfill, regardless of the depth to groundwater. This well shall be placed at the lowest level of the backfill if known. The lower one-half of the total length of this well shall be screened or the casing shall be perforated and gravel packed. An annular seal of concrete, neat cement, cement grout or a thick slurry of bentonite shall be palced above the gravel pack extending to the surface to prevent surface drainage from entering the well. Such a well is referred as an "interface vadose monitoring well" when groundwater is not encountered as the sensing zone monitors the backfill-natural formation interface. Refer to Figure 5 for such a typical installation.

EXHIBIT A

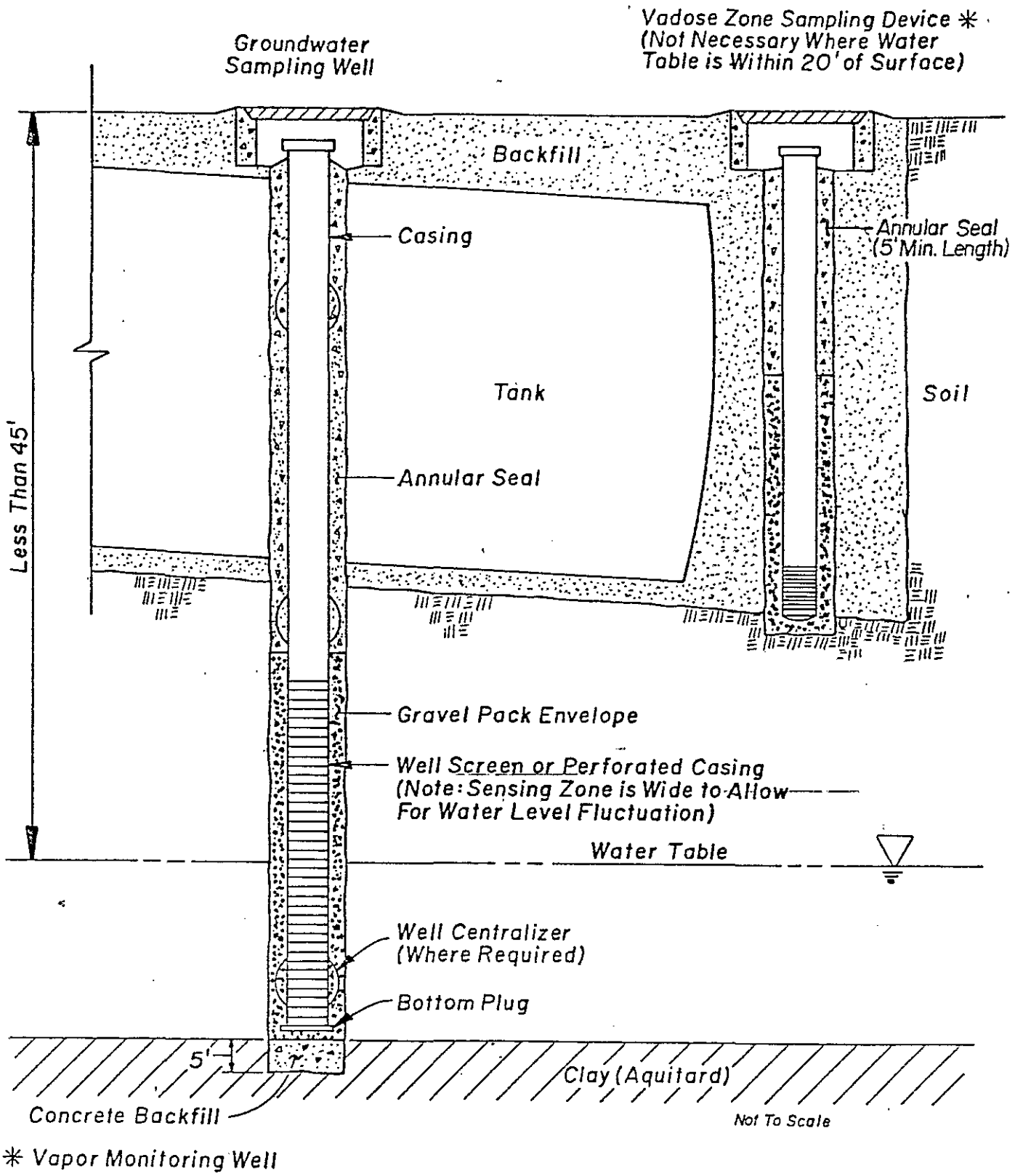


Figure 4. Typical Monitoring Facility, Commercial Motor Fuel Storage Facility, Shallow Groundwater

EXHIBIT A

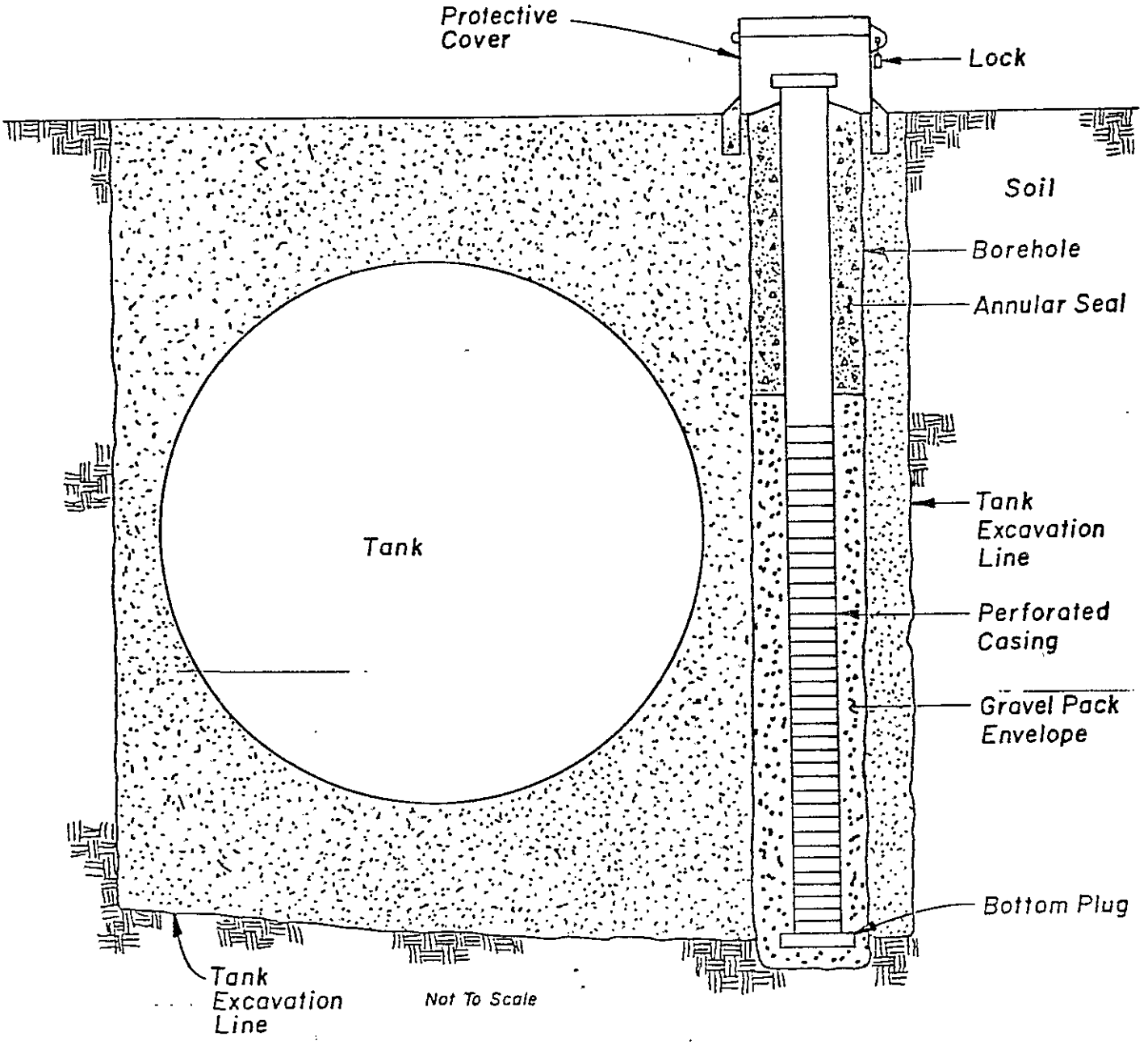


Figure 5. Typical Monitoring Facility, Individual Agricultural and Suburban Motor Fuel Storage Facility
(Serves as an Interface Well Under Unsaturated Conditions)

EXHIBIT A

Monitoring is to be accomplished by determining the presence or absence of motor fuel product which might accummulate atop the groundwater or, in the absence of groundwater, upon the tank backfill-natural soil interface should a leak occur or surface drainage water leaches down. Such a determination is to be made by probing the well with a clear (transparent) plastic ball-valve bailer whereby visual determination is to be performed. The well can also serve as an indicator of the presence of motor fuel vapors.

The monitoring well can be installed by a power auger or a hand auger. A soils sample shall be obtained at the bottom of the bore hole for field inspection in order to determine the apparent presence or absence of motor fuel contamination. The results of the judgemental field inspection are to be reported to the Administering Agency of the Permit Ordinance.

Monitoring Schedule

The schedule for groundwater sampling and testing and for obtaining measurements of vadose monitoring devices is as follows:

A. Non-Motor Fuel Storage Facilities: Semiannually for groundwater sampling and laboratory testing and for vadose monitoring measurements.

B. Commercial Moter Fuel Storage Facilities: Monthly for groundwater sampling and field testing and quarterly for vadose monitoring measurements.

C. Individual Agricultural and Suburban Motor Fuel Storage Facilities: semiannually for inspections.

EXHIBIT A

104-B

California Council for Environmental and Economic Balance

215 Market St., Suite 1311 • San Francisco, CA 94105 • (415) 495-5666

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November 26, 1984

Mrs. Carole Onorato
Chairwoman, State Water Resources Control Board
Sacramento, Ca. 95814

Dear Mrs. Onorato:

This letter is to advise you of the remaining major concerns of the Council with regard to the revised proposed Subchapter 16 regulations, dealing with the design, construction, operation, and monitoring of underground storage tanks containing hazardous substances. I would first like to commend both the Board and its staff for the substantial progress that has already been made in developing a workable set of regulations. The November 9th revisions to the proposed regulations are a major step in the right direction. Nonetheless, there are still significant problems with the regulations that should be addressed before the Board takes final action to adopt these regulations. These problems include the following concerns:

1. Visual Monitoring -The proposed visual monitoring requirements are unnecessarily restrictive and will therefore result in the necessity of implementing costly alternative monitoring requirements in circumstances where such additional assurances are simply unwarranted. Specifically, Section 2640(c) of the revised regulations provides that if visual monitoring cannot be provided for the entire underground storage tank, then a monitoring alternative specified in Section 2641 shall be implemented. In the case of a flat bottomed tank resting on a pad contained in or directly on the surface of a secondary container such as a concrete vault, we believe that visual monitoring will reveal any tank leaks, even though one cannot directly visually monitor the bottom of the tank or the floor directly beneath it. If a leak develops in the concealed area between the tank and the pad or the secondary containment vessel, the liquid will leak into the area where it is visable before it goes through the secondary container. The proposed regulations would require the implementation of alternative monitoring systems in this type of facility. We also do not believe that it is neceassry to require daily visual monitoring in this type of an installation. A visual

monitoring frequency of weekly would provide reasonable assurance of leak detection and clean-up before it could get outside the secondary container or vault.

2. Motor Vehicle Fuel Tank Definition -The proposed definition of motor vehicle fuel tank should not be limited on the basis of the intended use of the product, but rather should be based on the physical and chemical characteristics of the fuel. There are sound policy reasons for taking this approach. The potential threat to groundwater is the same regardless of the intended use of the product. The statutory language, which is admittedly ambiguous, would allow for this interpretation.

3. Alternative Monitoring Requirements -The revised monitoring requirements contained in Article 4, while a major improvement over the previous draft, still raise fundamental questions about the apparent lack of flexiblity and discretion to be vested in the local agency in the implementation of monitoring alternatives. The statute provides that alternative means of monitoring "may be required by the local agency". Yet the revised regulations would nonetheless mandate the implementation of specified monitoring alternatives in specified circumstances. Futhermore, the statute provides that the local agency, or any other public agency specified by the local agency, shall approve the location and number of wells, the depth of wells and the sampling frequency. Yet, in numerous instances in the revised monitoring alternatives these, parameters are specified as detailed requirements. The Council strongly urges the Board to modify these mandated alternative monitoring requirements to make them reccommended guidance to the local agency.

4. Interim Monitoring Requirements -The interim monitoring requirements contained in Article 4 should be modified to allow any business, regardless of size, or any local agency, to utilize the three-year phase-in period for either tank closure and replacement or implementation of one of the other seven monitoring alternatives. While large businesses may not face the budget constraints of either small business or local agencies, they could nonetheless face equally critical constraints in the availability of qualified manpower or necessary equipment.

In closing, I respectfully urge the Board to

not take final action on the revised regulations today, but rather give further consideration to the comments that you have received today and hopefully direct the staff to make some additional changes in the proposed regulations before final adoption. I am relatively certain that this approach will prove to be a more efficient process in the long run and will result in a better set of regulations.

Sincerely,

John

John A. Cupps

cc: Board Members

JAN 17 1985 Cay E. Cutter

Received DTS

JAN 17 1985

California Council for Environmental and Economic Balance

104 D

1512 - 14th Street, Sacramento, CA 95814 • (916) 443-8252

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January 14, 1985 cc - Bd MAC WGP

Mrs. Carole Onorato
Chairwoman, State Water Resources Control Board
901 P Street
Sacramento, California

Dear Mrs. Onorato:

This letter is to advise you of the one remaining concern that the Coucil has with the proposed revisions to the Subchapter 16 regulations. That one concern has to do with the impact of the visual and alternative monitoring requirements on existing underground storage tanks contained in concrete vaults. While both the visual and alternative monitoring provisions have been substantially changed, thoses changes do not adequately address this unique situation.

The proposed visual monitoring regulations require visual monitoring for all visable exterior surfaces of underground storage tanks, where feasible. If it is not feasible to visually monitor all exterior surfaces of the underground storage tank, alternative monitoring techniques would be required.

In the case of a flat bottomed tank resting on a pad contained in or directly on the surface of a secondary container such as a concrete vault, we believe that visual monitoring will reveal any tank leaks, even though one cannot directly visually monitor the bottom of the tank or the floor diectly beneath it. If a leak develops in the concealed area between the concealed area between the tank and the pad or the secondary containment vessel, the liquid would leak into the area where it is visable, before it could leak through the secondary container. This is particularly true, if the secondary container has been treated or lined with material that is impervious to the stored substance. The proposed regulations would still require the implementation of expensive and unnecessary alternative monitoring requirements for this type of facility.

Regards,

John

John A. Cupps

cc:Board Members

#105

R. A. PETERSON
P. O. Box 122
South Lake Tahoe, CA 95705
(916) 544-1077

BEFORE THE

WATER RESOURCES CONTROL BOARD

STATE OF CALIFORNIA

In re Public Hearing on Regulations respecting implimentation of source monitoring devices pursuant to statutes controlling underground storage of hazardous substances. (Sher Bill.)	October 23, 1984 Testimony of R. A. Peterson; and PROPOSED PROVISION RESPECTING INDEPENDENT SERVICE STATION OPERATORS

It is proposed that the Board, in its adoption of regulations pursuant to the Sher bill, incorporate the following provision respecting independent service station operators:

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Source Monitoring - Independent Service Station Operators

1) An "independent service station operator" (as hereinafter defined) shall be deemed to be in compliance with the monitoring requirements of the Act (Sher bill) upon implimentation of a daily inventory accounting control procedure of sufficient detail and accuracy to disclose any measurable gain or loss of inventory. No independent service station operator shall be deemed to so be in compliance if such inventory accounting procedure or any other available evidence disclose, to the satisfaction of any enforcement authority, a reason to believe that any discharge of a hazardous substance has occurred or is likely to occur.

2) An "independent service station operator", as used herein, refers to the operator of a retail service station who satisfies all of the following criteria:

   a) Operates, either directly or indirectly, not more than seven (7) retail service station outlets, and

   b) Does not display at any operated service station any trade name, style or logo of any petroleum refiner or any other marketer or distributor of petroleum products, and

   c) Has no property relationship, by lease, sublease or otherwise, with any refiner any other marketer or distributor of petroleum products with respect to any operated service station.

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Argument

THE ABOVE-STATED PROVISION RESPECTING INDEPENDENT SERVICE STATION OPERATORS WILL, IF ADOPTED BY THIS BOARD, PRESERVE COMPETITION IN THE RETAIL SALE OF PETROLEUM PRODUCTS WITHOUT CREATING ANY SIGNIFICANT RISK OF INJURY TO ANY ASPECT OF THE ENVIRONMENT.

I) Requiring independent service station operators to drill test walls will endanger competition by imposing an unfair economic burden on that segment of the retail service station trade that is the most price competitive and least financially able to absorb such costs.

II) Available evidence of past violations, from Davis, CA and South Lake Tahoe, CA (See Exhibit "A", attached) and logic disclose that service station operators not qualifying as "independents" are the only class of trade having a financial incentive to permit a leakage of petroleum to continue unabated.

III) Since the proposed provision requires, by its terms, daily accounting procedures and full compliance with test well drilling and other monitoring requirements if there exists any reason to believe that a leak has occurred or will occur, the provision poses no threat to the environment.

Therefore, for the foregoing reasons, it is respectfully requested that this Board adopt the proposed provision concerning independent service station operators.

Respectfully Submitted,

R. A. Peterson

DATED: October 23, 1984

R. A. PETERSON

Tahoe Daily Tribune 9.12.84

Gas leak still a mystery

Owners of a South Lake Tahoe gasoline service station have until Oct. 1 to try and find the cause of an underground gasoline leak near Trout Creek, said a state water quality official.

The leak was found in May when a utility crew found gasoline seeping into a trench being dug for a fire hydrant water main.

The leak is close to a gas station owned by the Terrible Herbst Oil Co., 2762 Lake Tahoe Blvd.

A former gas station, now a muffler shop, is also located close to where the leak was found.

The incident was reported to the Lahontan Regional Water Quality Control Board which ordered test wells dug by June 15. That deadline was extended after Terrible Herbst officials requested the board hold off until new state regulations on underground tanks were adopted.

The new regulations, due this fall, include specifications on monitoring and test wells.

Terrible Herbst officials told Lahontan their inventory procedures have shown no lost gasoline. However, state water quality officials believe such inventory methods are insufficient to spot small leaks that can lead to a large buildup of fuel in the ground over time.

William Ryan, a Lahontan water resource engineer, said the agency has prepared another order giving Terrible Herbst until Oct. 1 to install monitoring wells and take soil core samples near the site.

How much gasoline leaked into the ground, how extensively it has contaminated ground water and what the source of the fuel is remains a mystery, Ryan said.

Checks of the Trout Creek embankment have not shown any gasoline seeping into the Lake Tahoe tributary.

Although the proposed state regulations on underground tanks have not been approved, the state does have the power to order a cleanup of leaking tanks, said Evan Nossoff of the State Water Resources Control Board.

Nossoff said he could see no reason why Terrible Herbst should be allowed to put off the testing as ordered.

Ryan, however, said Lahontan was being reasonable in allowing the gas station owners to wait 3½ months while the state changed the specifications for test wells.

"We want to be reasonable about this," Ryan said. "We don't want to hold a gun to their head."

Tahoe Daily Tribune 10.4.84

Local gas station fails to comply with test order

Owners of a South Lake Tahoe gas station have failed to comply with an Oct. 1 deadline ordering test wells be dug near the property to determine the source of a gasoline leak, a state official said.

The leak was discovered in May when a utility crew found gasoline seeping into a utility trench being dug for a fire hydrant water main. The leak is close to a gas station owned by the Terrible Herbst Oil Co., 2762 Lake Tahoe Blvd. A former gas station now operated as a muffler shop is also nearby.

Nora Kataoka, an engineer with the Lahontan Regional Water Quality Control Board, said state officials may take enforcement action against the owners who have failed to respond to the agency's order.

The test wells were originally ordered to be dug by June 15 but Terrible Herbst was granted an extension pending a clarification of new state rules on underground tanks.

Ms. Kataoka said the leak near Trout Creek and Highway 50 has not been positively traced to Terrible Herbst but the owners are required by state law to dig the wells to determine if their station is the source.

Exhibit 'A'

#107

Chevron

D.W. Petroleum, Inc.
Jobber, Chevron U.S.A. Inc. **Products**
P.O. Box 160333, Sacramento, CA 95816
Placerville Phone (916) 622-1551 • Sacramento Phone (916) 363-5555

October 22, 1984

State Water Resources Control Board
Attn: Mr. Harold Singer
Division of Technical Services
P.O. Box 100
Sacramento, CA 95801

Re: Proposed Regulations Governing Underground Storage of Hazardous Substances

Dear Sir:

We're a Branded Petroleum Jobber in Placerville, Calif. We serve all of El Dorado and part of Amador Counties with wholesale gasoline and diesel fuel.

The majority of customers are commercial, agricultural and industrial accounts. They have tanks ranging from 200 to 12,000 gallons. They have an annual requirement that ranges from 600 to 60,000 gallons a year.

I feel that the pending proposed regulations for all underground storage tanks are unreasonable and should be amended to omit tanks of a given size with a given annual through-put.

My customers are paying in excess of one dollar a gallon for the product they are purchasing. In most cases, they have inventory control programs that they use to control the product. If their tanks were leaking, I'm sure they would be aware of it immediately. It seems more realistic for the smaller rural end-user and wholesale account to live with regulations that would require them to report their inventory control program annually.

The cost of monitoring wells and annual static tests on existing tanks for these smaller accounts is prohibitive.

Please consider some kind of inventory control program for smaller end-users and wholesale accounts. It seems that it could possibly be regulated by the size of storage tank along with the annual through-put.

Thank you for any consideration you can give us on this matter. The current proposed regulation would have a devestating effect on not only my business, but on most of the business I serve.

Sincerely,

R. Dean Hunt

R. Dean Hunt

#108

Chevron Products

SULLIVAN'S STANDARD PETROLEUM COMPANY

JOBBER CHEVRON U.S.A.

October 22, 1984

State Water Resources Control Board
Paul R. Bonderson Building
901 P Street
P.O. Box 100
Sacramento, California 95801
Attn: Harold Singer
Division of Technical Services

RE: Adoption of Proposed Regulations Governing Underground Storage of Hazardous Substances By The State of California Water Resource Control Board

Dear Mr. Singer:

I would like to begin my comments in regard to the fact that compliance must be accomplished by July 1, 1985, yet the fiscal impact study prepared by the State allows for a five-year implementation. The six-month time frame for compliance is unrealistic and does not allow for alternatives to be considered, let alone implemented. I feel that a program of this magnitude would warrant a lengthened implementation period. If only to avoid the chaos this will create in the fuel marketplace.

I envision my small business customers being unable to comply with these proposed regulations and therefore being forced to seek fuel supplies at service stations, causing longer lines at these stations not to mention product shortages and cost increases in doing their business.

Our company which is a small jobbership was not made aware of these new regulations or of this last hearing until October 10, 1984. Therefore I am asking that the public comment time period be extended to allow the small business persons in our industry to make written comments in regards to alternatives such as: compliance or reporting requirements, implementation time table modifications, and exemptions or partial exemptions for small thruput users.

P.O. BOX 5007 OILDALE, CA 93388 (805) 393-5017

While none of us want to contaminate the underground water supply, the proposed regs go far beyond what is economically feasible under your present timetable for the small businessman to implement.

I thank you for your consideration in this matter and look forward to receiving a favorable response.

Sincerely,

Timothy P. Sullivan
Vice President

TPS/cm

Chevron

The Standard of Excellence

#109

Department of Water and Power the City of Los Angeles

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Mayor

Commission
JACK W. LEENEY, *President*
WALTER A. ZELMAN, *Vice President*
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ANGEL M. ECHEVARRIA
CAROL WHEELER
JUDITH K. DAVISON, *Secretary*

PAUL H. LANE, *General Manager and Chief Engineer*
NORMAN E. NICHOLS, *Assistant General Manager - Power*
DUANE L. GEORGESON, *Assistant General Manager - Water*
NORMAN J. POWERS, *Chief Financial Officer*

October 23, 1984

Mr. Edward C. Anton, Chief
Division of Technical Services
State Water Resources Control Board
901 P Street
P. O. Box 100
Sacramento, California 95801

Dear Mr. Anton:

Comments on State Water Resources
Control Board (SWRCB) Underground Tank
Draft Regulations

The Los Angeles Department of Water and Power would like to take this opportunity to commend the efforts of the Board in undertaking the complex task of regulating the State's underground hazardous substance storage tanks. Since groundwater accounts for approximately 15 percent of the City of Los Angeles' water supply, we are only too aware of the adverse potential that these facilities represent in regard to groundwater contamination. Please be assured that the Department of Water and Power is moving as quickly as possible to insure its conformance with the recent legislation on hazardous substance storage tanks and that it will continue this effort with regard to the Board's finalized regulations.

My staff has undertaken an exhaustive review of the Board's Draft Regulations, especially with regard to the source legislation. This review has disclosed a number of items in the regulations which we feel should be modified, deleted, or clarified. In presenting the attached comments to the Board, we wish to emphasize the importance of flexibility and adaptability to local conditions in the development, approval, and implementation of these regulations by the Board.

Water and Power Conservation . . . a way of life

111 North Hope Street, Los Angeles, California ☐ *Mailing address:* Box 111, Los Angeles 90051
Telephone: (213) 481-4211 *Cable address:* DEWAPOLA

We thank you for the opportunity of submitting these comments for your review and consideration. If you have any questions, please contact Wayne E. Kruse at (213) 481-6124.

Sincerely,

PAUL H. LANE
General Manager and Chief Engineer

Enclosure

Comments of the Los Angeles Department of Water and Power
on the State Water Resources Control Board (SWRCB)
Proposed Regulations for Underground Tank
Storage of Hazardous Substances

1. Article 3

- Section 2632(c)
  - Comment: Delete existing provisions
  - Revise to read: "The sump and access casing shall be designed to collect and allow for the removal of the collected liquid."
- Section 2632(f)
  - Revise to read: "... monitored ~~continuously~~ using ~~a pressure sensor~~ an approved sensing device. ~~The sensing devices shall be capable of activating a strategically located above-ground alarm system.~~ Double-walled tanks which utilize this leak detection system are exempt from the requirements of Sections 2632(c) through (e)."
- Section 2632(g)
  - Revise to read: (g) "An inventory control system as described in Sections 2634(d) and (e) may be used in lieu of (e) or (f) above for fuel storage tanks having a capacity of less than 1,100 gallons."
- Section 2634(a)(2)
  - Revise to read: "~~Daily~~ periodic gauging and inventory reconciliation by the operator pursuant to Section 2643 of Article 4 and the following:

    (A) Daily if tank capacity is greater than 1,100 gallons or if the average daily inflow or outflow is greater than 10 percent of the tank volume.

    (B) Weekly if tank capacity is less than 1,100 gallons and if the average weekly inflow or outflow is less than 10 percent of the tank volume.

    (C) Bi-weekly if tank capacity is less than 550 gallons and if the average bi-weekly inflow or outflow is less than 10 percent of the tank volume.

- Section 2634(d)

  - Comment: This subsection should apply only to storage facilities having a capacity greater than 1,100 gallons (see comments on 2634(a)(2) with respect to frequency of gauging and inventory reconciliation).

  - Revise to read: "An underground tank <u>having a capacity greater than 1,100 gallons and</u> used for the storage of motor vehicle fuels ..."

2. <u>Article 4</u>

- Section 2640(a)

  - Comment: The proposed regulation states that an adequate monitoring system must be capable of measuring the groundwater quality "directly". This is potentially hazardous to the groundwater it is supposed to protect. Each monitoring well could act as a conduit for hazardous materials that have leaked to enter the groundwater. Having such a system at each underground tank represents a significant potential for contamination.

  - Revise to read: "... future.~~, and be capable of measuring the groundwater quality directly.~~"

Section 2640(e)

  - Comment: This section states that all owners of existing underground storage tanks "... shall implement each alternative monitoring method as specified in Sections 2642 through 2646 ..." if they are not able to implement visual monitoring. This requirement appears to exceed the intent of AB 1362. This original legislation suggested <u>alternative</u> monitoring methods and directed the SWRCB to develop monitoring alternatives rather than requiring the all-inclusive monitoring methods being proposed in these regulations. The local agency needs to have discretion in determining which and how many alternative methods are necessary to protect the groundwater basins under its jurisdiction. In view of the intent of AB 1362 regarding alternative monitoring methods, it is requested that this Section be revised.

  - Revise to read: <u>"All owners ... who are not able to implement visual monitoring ... shall implement</u>

those alternative monitoring methods determined by the local agency to be necessary to monitor for active and historic unauthorized releases."

- Section 2643(c)
  - Comment: This Section should be consistent with the provisions of AB 1362, Section 25284.1(b)(3).
  - Revise to read: "All tanks shall be individually monitored utilizing a ~~daily~~ periodic inventory control system ..."
- Section 2643(f)
  - Comment: Paragraphs (f)(1) through (f)(3) should only be applicable to storage facilities having a capacity greater than 1,100 gallons.
  - Revise to read: "Underground tanks of greater than 1,100 gallons capacity and used for storage of motor vehicle fuels ..."
- Section 2644(b)
  - Comment: Section 2640(c) permits the local agency to authorize methods other than soil testing which meet the overall intent of determining unauthorized releases. In view of this provision, it is suggested that consideration be allowed for existing monitoring and inventory reconciliation programs that are demonstrably effective in preventing soil contamination. We therefore suggest that the following exemption be added to this Section.
  - Revise to read: (b)(3) "The local agency may authorize an exemption from soil testing if the owner of an existing tank is able to demonstrate the adequacy of an existing monitoring and inventory control program meeting the intent of the exemption provided for in Section 2640(c) of Article 4.
- Section 2644(d)
  - Comment: The midpoint boring depth should be determined in each case by a registered engineer or registered geologist since deep borings could act as conduits for contamination.

- Section 2647
  - Comment: The Assurance Ground Water Monitoring wells described in this Section are not practical. The results of the samples taken from these wells will not provide conclusive evidence as to the source of the leak, particularly in areas where tanks with the same constituents are nearby. In addition, the provision of conduits for potential contamination of deeper groundwater aquifers will be created.
  - Revise to read: (c)(1) and (2) "The wells(s) shall be in close proximity to the tank and the exact depth shall depend upon the site geology and the recommendations of a registered engineer or registered geologist but not more than 50 feet deep. The well(s) shall be perforated ..."
- Section 2647(d)
  - Comment: The suggested arrangement of three wells within 500 feet of the tanks may be too close. It is recommended that the well spacing, number and depth be determined by a registered engineer or a registered geologist on a case-by-case basis and that no distance be specified.
- Section 2647(d)(3)
  - Comment: This Section should be expanded to include more details regarding "dry drilling technique". It may not be possible to construct deep wells by such a method in some soils.

3. Article 5

- Section 2652(b)
  - Revise to read: "All unauthorized releases meeting the criteria of Subsection (a) of this section shall be reported within 24 hours after the release has been detected ~~or should have been detected~~. The operator or permittee shall notify the local agency, Office of Emergency Services and the Regional Water Quality Control Board."
- Section 2652(g)
  - Comment: The cleanup of an unauthorized release should be made under the direction of a single regulatory agency. Other agencies should

coordinate comments through a lead regulatory agency, possibly the Regional Water Quality Control Boards.

4. Article 8

- Section 2682(a)

  - Comment: Section 24 of Assembly Bill 3565 defined a site-specific variance as an alternative procedure which is applicable in one local agency jurisdication. The proposed regulations should be clarified to be consistent with this definition to ensure its equitable applicability upon review and approval by the Regional Board of an application for such a variance.

5. Article 10

- Section 2712(f)

  - Comment: This section allows provisional permits to be issued until an underground storage tank is upgraded to conform with the applicable regulations. The specified three-month time allotment for conformance, although desirable, may be insufficient to allow upgrading to occur. The time frame should be established by the local agency on a case-by-case basis with a maximum permissible period of perhaps one to two years. This schedule would not be unreasonable if the permittee has to address several hundred facilities with limited resources.

#109 B

Statement Before
State Water Resources Control Board
October 23, 1984
Proposed Regulation on
Permit Program for Underground Storage Tanks
Storing Hazardous Substances

I am Wayne Kruse, Senior Waterworks Engineer with the Los Angeles Department of Water and Power. I'm the coordinator of the Water System's Underground Storage Tank Monitoring and Replacement Program.

The City of Los Angeles has found traces of industrial solvents in much of our groundwater. The City supported the legislation to require standards and leak monitoring for underground tanks and feels it is a major step forward in protecting our groundwater basins.

These groundwater basins are extremely important to Southern California because of our reliance on imported supplies. These imported supplies have problems of their own -- namely, litigation, loss of Colorado River water to Arizona and potential droughts such as occurred in 1976-77. Conjunctive use of groundwater can increase the yield of the State Water Project. Short term overdrafting of groundwater basins can carry us through drought periods.

The City of Los Angeles has chosen to set up its own program to regulate underground tanks. I expect the City's guidelines for implementation to copy to the maximum extent feasible these State regulations.

The Department of Water and Power has developed a complete inventory of our underground storage tanks and is developing a program to monitor and replace tanks. We have more than 400 tanks which need to be addressed under the regulations which are before you today.

We plan to remove or close those tanks that are no longer needed and to monitor or replace the remaining tanks. Those tanks that are intially monitored will ultimately be replaced with double-walled tanks in the future.

We are addressing those tanks which pose the highest risk to our groundwater basins first. The proposed regulations are very rigid. We feel they need to be more flexible. Many different conditions exist in the field. The local agencies need flexibility to deal with these situations in a timely manner. Leak testing and monitoring technology is very dynamic. The regulations need to be able to adapt to those evolutions.

Specifically, DWP is concerned about three major areas;

1. <u>The monitoring alternative or alternatives which should be used when visual monitoring is not possible.</u> AB 1362 suggested alternative monitoring methods and directed the board to develop monitoring alternatives. The proposed regulations require all of the monitoring methods. We feel local agencies should determine what alternative methods are necessary to protect the groundwater basins under their jurisdiction.

2. The subject of soil testing and test hole drilling. The proposed regulations call for some relatively deep monitoring wells to be drilled. Drilling wells as deep as 200 feet into a potable aquifer or through a confined layer of clay has the potential to create a conduit for contamination from above and is not advisable. The recommendation as to how deep to drill should be made by a registered civil engineer or geologist.

3. The question of variances. The proposed regulations appear to miss the intent of the legislature for site-specific variances. It appears that it was intended that the Regional Board review and approve site-specific variances for alternative procedures which may be applicable to more than one tank in one local agency's jurisdiction. The regulations as proposed would apply only to one tank. We support the legislative intent.

Thank you for allowing me to comment. More specific suggestions and comments were submitted by letter to the Water Resource Control Board staff.

WEK:oe

American Electronics Association

2670 Hanover Street
P.O. Box 10045
Palo Alto, California 94303
(415) 857-9300

#110 AEA HS

October 19, 1984

Mr. Harold Singer
Division of Technical Services
P.O. Box 100
Sacramento, CA. 95801

Dear Mr. Singer:

The following commentary is offered prior to listing section by section comments. The regulations are much too detailed and, in several cases, requirements are not supported by the enabling legislation. This statement is substantiated by the comments listed below.

Section 2610 (d)

The Association fully supports this provision. Existing tanks that meet new tank standards should be treated as new tanks for compliance purposes.

Section 2611

A procedure should be outlined in this section that would provide a means to de-list substances appearing on a list as a hazardous substance when there is no impact on groundwater by said substance.

Section 2620

Clarify the definition of an "underground storage tank" so that a tank which is substantially or totally beneath the surface of the ground also be in immediate contact substantially or totally with the soil (buried means buried not below grade).

Section 2632

In the opening statement visual monitoring should be given the same importance as given for existing tanks in Section 2641.

Received DTS
OCT 23 1984

Section 2632 (e) (1)

The second sentence should read "all standing liquid shall be immediately identified..." rather than "sampled and analyzed". In the case of raw materials, the owner knows what the substance is and should not be required to run an analysis. On the other hand, if there is no knowledge, the owner would have to analyze the sample to identify it.

Section 2635 (b) (1)

Requiring a .25 inch steel striker plate is being too specific. A tank holding acid would be incompatible with the substance in which the tank will hold.

Section 2635 (c) (2)

There is no authority for this requirement. Also, there is no need for this level of detail given to the local agency. (There are certain local requirements for design drawings to obtain construction permits and only the requirement of local authority for this purpose need be met).

Section 2635 (c) (4)

Again, the liquid should be identified, which may or may not require an analysis (refer to the comment for 2632 (e) (1)).

Section 2641 (b)

The tone of this paragraph appears to be contradictory to (a); it should read "the owner is exempt from visual monitoring only under the following conditions."

Section 2641 (c) (4)

What is the intent, record and report to whom? (Should this apply only if inventory control methods are used for monitoring?)

Section 2641 (d) (1)

Same comment as given in 2632 (e) (1) for explanation of "identify" versus "analysis".

Section 2643 (b)

Add another exemption for underground tank owners who store hazardous substances that are not available for resale.

Section 2643 (d) (3)

This requirement is rather insulting to technicians who otherwise are responsible for operation of processes involving the underground storage tank. It is inappropriate to limit evaluation measurements to managerial personnel. (Suggest use operating/maintenance personnel with designated responsibility for inventory control).

Section 2644 (c)

A statement should be included to require vertical borings first; if conditions permit, proceed with slant drilling.

Section 2644 (e) (4)

Include registered soil scientists in list of professionals competent in soils engineering. A statement should also be added to include a qualified representative under the supervision of one of the registered professionals.

Section 2645 (f) (1)

This is a good idea, however, there are reports that companies cannot get approval to inject a tracer substance to test a vapor monitoring system. This inconsistency has to be cleared up.

Section 2646 (e) (3)

The requirement for a well with a 4 inch inside diameter casing precludes the use of an 8 inch auger which forces the owner to use a 12 inch auger. this is an economic burden that is unnecessary. The regulation should be changed to require a 3.5 inch inside diameter casing therefore falling into the range of capability of an 8 inch auger.

Section 2646 (f)

Who determines if sampling and analysis is applicable?

Section 2647 (b) (3)

Another exemption should be made for owners who would have to go outside their property lines to comply with the requirement.

Section 2647 (d) (3)

The phrase "by appropriate drilling practices" should replace "by a dry drilling technique."

Section 2647 (e)

There is no need for semi-annual monitoring once a baseline has been established, vadose zone monitoring shows no evidence of a leak and there has been no spill of a hazardous substance.

Section 2648 (m)

All information should be on file with the owner not affixed to the surface security structure.

Section 2652 (c) (3)

There is no statutory authority to require reporting of cost information on clean up. This should be deleted from the regulation.

Section 2670 (f)

Eliminate a definitive date and leave the time determination up to the local agency.

Section 2671 (c)

Why continue monitoring when all indicators were negative at the time of temporary closure? The tank is completely empty per 2671 (b) so continued monitoring is an unjustified burden on the owner.

Section 2672 (b) (4) (b)

Subsection (4)(b) should be removed from the regulation. There is no way an owner should be expected to know how a tank will be used by future owners. The new owner has their own set of requirements to put a tank into operation so that nothing can happen that the local authorities will not know or find out about.

Section 2672 (b) (5) (c)

What are appropriate warnings for tanks that are thoroughly cleaned and punctured? There is no DOT labelling requirement that fits this condition.

Section 2672 (c) (2)

Piping should be treated the same as a tank in that if it is properly cleaned, it can be treated as a non-hazardous waste.

Section 2672 (d)

Replace the phrase "unauthorized release" with "significant soil contamination."

Section 2681 (b) (5)

Delete. This is the responsibility of the Board--not the applicant.

Section 2691 (a) (2)

Replace the words "and would" with "to". This will bring the subsection in line with the law.

Thank you for this opportunity to comment on the draft regulations governing underground storage of hazardous substances. If I can be of further assistance, please contact me at (415) 857-9300 ext. 272.

Sincerely,

Steven W. Pedersen

Steven W. Pedersen
Manager
Environmental Affairs
& Occupational Health

T-4181 C
REV. 12-83

HIGHWAY TRANSPORTATION RECEIPT

#102-M

(LOADING TICKET)

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THIS IS TO CERTIFY THAT THE BELOW-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPT. OF TRANSPORTATION.

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98	1X10030	97	UY-9363

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PRODUCT CODE	PRODUCT NAME	OCT.	(TEMP)	GRAVITY	GROSS GALLONS	NET GALLONS
GASOLINE, FLAMMABLE LIQUID/UN 1203 22	UNLEADED REGULAR	00.0	079	57.0	8400	8293

DIFFERENCE 107 GALS

#102-n.

MAY 29 1985

orig - DWQ

California Independent Oil Marketers Association

555 CAPITOL MALL, SUITE 655, SACRAMENTO, CA 95814, (916) 441-5166 JIM DIVINE, Executive Vice President

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May 29, 1985

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State Water Resources Control Board
901 "P" Street
Sacramento, CA 95814

Re: Adoption of Sections
2610-2714 of Title 23 of the
California Administrative Code

Dear Board Members:

After reviewing the OAL analysis of the Water Resources Control Board proposed regulations we could not find any response to the following:

1. Concern over lack of clarity in 2632(c) (2), 2635(b) (1), 2635(b) (4), 2635(b) (6), 2662(d); and lack of evidence of necessity for sections (2641(c) (4), (2641)(c) (5), (2641)(c) (6), (2641)(c) (7), (2641)(c) (8), (2642)(b) (4), (2642)(c) (4), (2647)(c), (2647)(g).

2. On Page 2 and on Page 7 of the OAL comments, the OAL points out the failure of the Board to explain the rejection of proposed alternatives that would lessen the adverse economic effect on small business.

This is of grave concern to us, since it has the potential for economic ruin for the California Independent Oil Marketer and their customers.

3. We are also concerned that a determination as to whether the regulations impose a mandate on local agencies or school districts was not made.

Very truly yours,

Ron Ahlport

Ron Ahlport
President

RA:ss
cc: OAL

Received DT
MAY 29 1985

MEMBER OF
PMAA PETROLEUM MARKETERS ASSOCIATION OF AMERICA

#103

ROBERT V. JENSEN, INC.
Chevron U.S.A. Products
P.O. Box 7889
Fresno, CA 93747
(209) 485-8210

ROBERT V. JENSEN, INC.

October 22, 1984

State Water Resources Control Board
Division of Technical Services
P.O. Box 100
Sacramento, CA 95801

Attention: Mr. Harold Singer

Re: Proposed regulation of underground storage of hazardous substances, to be codified in subchapter 16 of chapter 3, title 23, Calif. Admin. Code (23 CAC section 2610-2704)

Our firm is in the business of marketing petroleum products. We sell truck and trailer quantities of fuel as well as the tank wagon quantities. If the proposed regulation becomes law, as it is written at this point in time, we believe the damage to our business will be very costly.

If the proposed regulations governing underground storage, such as; slant soil boring, annual tank testing, Vadose monitoring of wells, ground water monitoring of wells, and secondary containment, are implemented the cost to businesses such as ours, and also to our customers, will be astronomical!

Our customers, especially those consuming small annual gallonages of fuel will find that they can no longer afford to have their fuels delivered into their underground tanks. This realization will in turn, force a great number of fuel customers to purchase fuel from retail outlets. The price of fuel at retail outlets has been traditionally higher then what petroleum Jobbers such as our operation charge for fuel. Thus once again the agricultural/industrial customer will be hurt.

The proposed regulation will also detrimentally effect the smaller service stations. The financial burden of complying with the new hazardous storage regulation is too great.

ROBERT V. JENSEN, INC.
Chevron U.S.A. Products
P.O. Box 7889
Fresno, CA 93747
(209) 485-8210

ROBERT V. JENSEN, INC.

We feel that regulation in this direction is very necessary but certainly not to this degree, and not using these particular methods. Close consideration should be taken so that these laws are economically feasible, and not detrimental to business or personal livelihoods.

Sincerely yours,

Michaeal A. Martin
General Manager

lmm

Your One Stop Petroleum Jobber

#104

California Council for Environmental and Economic Balance

215 Market St., Suite 1311 • San Francisco, CA 94105 • (415) 495-5666

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FORMER CHAIRMEN

October 22, 1984

Mrs. Carol Onorato
Chairwoman, State Water Resources Control Board
Sacramento, Ca. 95814

Dear Mrs. Onorato:

This letter is to advise you of some fundamental concerns of the Council with the proposed Subchapter 16 regulations, dealing with the design, construction, operation, and monitoring of underground tanks containing hazardous substances. Not only are many of the provisions of the proposed regulations unnecessary to achieve the basic goal of the original enabling legislation, namely, the protection of groundwater from contamination by hazardous substances contained in underground tanks, but are indeed in conflict with the actual statutory provisions of that law. Beyond that, some of the provisions of the regulations, as proposed simply, cannot be met within the statutorily mandated timeframes, and the cost of doing so, which we believe the staff has significantly underestimated, would be staggering.

The proposed regulations for the monitoring of exiting tanks contained in Article 4 are of particular concern. In essence, this Article would impose a series of redundant and costly monitoring techniques on the owners of exiting tanks. Under these provisions, the owner of a single tank could be required to perform daily visual monitoring, test the tank annually, perform daily inventory control, undertake soil sampling, install vadose zone monitoring, and drill three groundwater monitoring wells. We do not believe that such redundant monitoring systems will always be necessary to provide early detection of unauthorized releases. That will depend upon a variety of factors. Indeed, we believe the statute recognizes this reality by requiring visual monitoring, where practical, and providing that <u>alternative</u> methods of monitoring <u>may be</u> required by the local agency, consistent with the Board's regulations. We therefore beleve that the Board not only should, but indeed, is required to adopt regulations that provide for various monitoring alternatives that local agencies may require based upon appropriate criteria, rather than mandating a series of redundant and unnecessary requirements.

The Council looks forward to continuing to work with the members of the Board and its staff to develop these and other needed changes in the proposed regulations.

Regards,

John A. Cupps

#106

JOBBER FOR PETROLEUM PRODUCTS & EQUIPMENT

October 22, 1984

State Water Resources Control Board
Attn: Harold Singer
Division of Technical Services
P.O. Box 100
Sacramento, CA 95801

Re: Proposed Regulations Governing Underground Storage of Hazardous Substances

Dear Sir:

I am a Jobber of Petroleum products in Metropolitan Sacramento. We serve wholesale commercial, agricultural and industrial accounts with gasoline and diesel fuel.

Our customers have underground tanks ranging in size from 350 gallons to 12,000 gallons. They have annual requirements from 1,000 to 100,000 gallons per year.

It appears that the proposed regulations have been written to refer more to Retail Service Stations and not really smaller wholesale purchasers. It seems that monitoring wells and annual static test on existing tanks would be cost prohibitive for these small to medium size businesses. Their annual throughput would not justify the expense they would incur from conforming to these regulations.

It seems that it might be more realistic to amend these regulations to require the smaller end-user and wholesale purchaser to possibly report their daily inventory control program annually. They could also, possibly, require these purchasers to test their tanks every so many years as determined necessary.

I hope that you might give these ideas some consideration. I'm sure that the current regulations, as they stand, would not only effect the future of my business, but would also have a big effect on most of my customers.

Sincerely,

Warren N. Hunt, Jr.

Warren N. Hunt, Jr.

POST OFFICE BOX 160386 • SACRAMENTO, CA 95816

SACRAMENTO — (916) 442-4752 PLACERVILLE — (916) 622-1551

American Electronics Association

2670 Hanover Street
P.O. Box 10045
Palo Alto, California 94303
(415) 857-9300

#110-B

HS

AEA

JAN 18 1985
Orig - DWQ

January 17, 1985

Michael A. Campos
State Water Resources Control Board
Division of Water Quality
901 P Street
Sacramento, CA 95814

Dear Mr. Campos:

The following comments are offered on the January 18, 1985 draft of regulations governing underground storage of hazardous substances. These comments support those sent to your office on October 19, 1984:

Section 2632 (1)(A)

This provision does not provide for a tank sitting directly on a pad within the secondary container. Although the bottom could not be directly viewed, visual monitoring should be applicable in this instance.

Section 2632 (1)(B)

Daily monitoring as a minimum is too frequent. This function should be left up to the local authorities based on the substance stored.

Section 2632 (C) There is no reason to measure and record the liquid level every time an inspection takes place. This is particularly true for waste solvent tanks where volume increases are based on the rate of use in the plant. There is no way to know what the level should be, therefore, there is nothing to use for comparison.

Thank you for the opportunity to again comment on these proposed regulations. If I can be of further assistance, please contact me at (415) 857-9300, ext. 272.

Sincerely,

Steven W. Pedersen

Steven W. Pedersen
Manager
Environmental Affairs
& Occupational Health

Received DTS
JAN 22 1985

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Michael Campos
State Water Control
Div. Water Quality
901 P Street
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Original Comments 111-120

Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations 1985

#111

California Fire Chiefs Association

NORTHERN DIVISION - FIRE PREVENTION OFFICERS' SECTION

October 16, 1984

Mr. Edward C. Anton, Chief
Division of Technical Service
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Dear Mr. Anton:

The California Fire Chiefs' Association through its Fire Prevention Officers' Division has reviewed the draft Underground Tank Regulations proposed for the implementation of ground water protection procedures as required by AB 1362.

We present the following for your consideration:

Article 1, Section 2611(a)(1) needs clarification. The intent to exempt counties or cities with ordinances in place prior to January 1, 1984 is muddled by stating "...meets the requirements of Articles 3 & 4 <u>or</u> implements the requirements of H & S 25284 and 25284.1..."

We do not believe that the terms in Section 25284.1 "...alternative methods... consistent with regulations of the Board" necessarily intended that local ordinances adopted prior to January 1, 1984 would have to comply <u>exactly</u> with future regulations of the Board.

We suggest deletion of the reference to Articles 3 & 4 in this section.

Article 2. We suggest that a definition be added for "farm", or at least a reference to define what specific conditions qualifies a farm as a "farm" for the exemption.

Article 3, Section 2633(f). Additional detection or secondary containment should be required for pressurized piping systems. It is common knowledge that pressurized piping systems are the most frequent sources of fuel leakage.

The technology is available for secondary containment of the piping and/or detecting <u>any</u> volume of leakage outside the piping.

Sections 2635(b)(11) & (d) & (e). Regarding installation standards, it would be prudent to insert wording referencing requirements of the local agency. "... shall be installed in accordance with local agency regulations and manufactureres' recommendations if no local regulations or written manufacturers' recommendations exist best engineering standards shall be followed."

The installation standards must avoid conflict between these regulations and the Uniform Fire Code Article 79 where applicable regulations do overlap.

Section 2635(h). States that all steel tanks shall be cathodically protected. Clarification is needed as to the intent regarding steel tanks installed in vaults.

Article 4. In general, we believe the multiple layers of testing and monitoring is excessive and redundant. More consideration of and reliance on engineering technology available should be applied with options to choose one or a combination of testing and monitoring techniques.

Wells should not be arbitrarily required for existing tank sites. Wells could be required by a local agency as a result of a suspected tank failure or leakage.

Consider the addition of separate sections to cover monitoring for motor vehicle fuel storage tanks both new and existing.

(A) New motor vehicle fuel tanks:

1. Provide primary and secondary containment with periodic monitoring of secondary container or annular space of double-walled tanks.

2. Inventory control per section 2643.

3. Tank-testing per section 2642 when inventory control indicates a loss or gain.

4. Monitoring all pressure piping systems, utilizing an on-line pressure loss detector and detection for any volume of leakage outside the piping.

(B) Existing motor vehicle fuel tanks:

1. Inventory control per section 2643.

2. Tank-testing for permit and periodically or when inventory control indicates loss or gain. Periodic testing interval shall be annual for unprotected steel tanks and at least every three years for corrosion-resistant tanks.

3. Monitoring all pressure piping systems utilizing an on-line pressure loss detector and detection outside the piping for any volume of leakage.

4. Monitoring wells as required by local agency on a site-by-site basis.

Article 5. In general a more specific reporting sequence is needed along with a clarification regarding the intended roles of involved agencies.

Article 7. In order to eliminate conflict with other standards for placing tanks temporarily out of service we request 2670(b) be amended to limit temporary closure to one (1) year.

We believe that permanent closure should require tank removal in all cases except extreme hardship and in no case should a removable material such as sand be permitted as the medium to fill a permanently closed tank.

Article 8. The fee structure for variances is exclusionary. We believe that variance application should be part of due process and that the fees should not be exclusionary.

Article 9. The comments which apply to Article 8 above also apply to Article 9.

Article 10. Of concern to local jurisdictions is the longevity of the permit to operate tank(s) as contained in 2712(d) "PERMIT CONDITIONS." The five (5) year permit to operate underground tanks on a non-renewable basis conflicts with the Uniform Fire Code requirements adopted by most jurisdictions. Namely, annual permits are issued for the storage and use of flammable and combustible liquids and other hazardous materials in underground storage tank(s). In most instances, annual inspections are performed by the Fire Department to ensure proper compliance has been demonstrated by the operator(s)/owner(s) with local adopted codes/ordinances.

Section 2712(h) requires a facility be inspected a minimum of once every three (3) years. Referring to the preceding comment, annual inspections could be required by the local jurisdiction if deemed prudent to carry out this legislation.

Guidance in the permit fee schedule has not been addressed at this point. The State anticipates a fee for processing all permit applications; however, costs to administer the inspection/permit applications at the local jurisdiction level have not been addressed.

Sincerely,

Robert Cleveland

ROBERT CLEVELAND, **Chairman**
Nor-Cal Fire Prevention Officers
Hazardous Materials Committee

cc: Assemblyman Sher
Assemblyman Cortese

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111-B

California Fire Chiefs Association

NORTHERN DIVISION - FIRE PREVENTION OFFICERS' SECTION

Mr. Edward C. Anton, Chief
Division of Technical Service
State Water Resources Control Board
P. O. Box 100
Sacramento, California 95801

November 26, 1984

Dear Members of the Board and Staff:

The California Fire Chiefs Association, through their Fire Prevention Officers Section, wish to express our congratulations to you on a very difficult job well done.

We have reviewed the draft "Underground Tank Regulations" dated November 9, 1984 and are truly amazed at the work accomplished since the draft dated October 23, 1984. We are particularly pleased that you have addressed the issues about which the California Fire Service had expressed concern. We are of course, aware that our organization is perhaps one of a hundred or more whose comments were considered, but we are nonetheless gratified by your overall response. Please be assured that you may expect our support and assistance in carrying out the good work and intentions of Chapter 1046 Health and Safety Code, and your regulations.

The Fire Prevention Officers Section of the California Fire Chiefs Association request that, at some time in the near future, staff from the Regional Boards join with us and representatives of other local agencies in mutual training activities. This training is necessary so that we may go forward in the implementation of the regulations with mutual understanding.

In closing, we submit one last comment for your consideration. In monitoring alternative number 4, there seems to be a discrepancy between table 4.1 and its reference section 2641(c)(4)(B). The table asks for monitoring of ground water at weekly intervals while the section specifies "monthly at a minimum". We suggest that a weekly interval is excessive as turn around time for sample analysis will probably be more than a week. Monthly monitoring will be difficult but is probably workable.

Yours truly,

Robert Cleveland

Robert Cleveland
California Fire Chiefs Association, Northern Division
Fire Prevention Officers Section
Hazardous Materials Committee Chairman

RC/ss

cc: Assemblyman Sher
Assemblyman Cortese

#112

SMUD

SACRAMENTO MUNICIPAL UTILITY DISTRICT ☐ 6201 S Street, P.O. Box 15830, Sacramento CA 95852-1830, (916) 452-3211
AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

October 23, 1984

HAROLD SINGER
DIVISION OF TECHNICAL SERVICES
STATE WATER RESOURCES CONTROL BOARD
PO BOX 100
SACRAMENTO CA 95801

COMMENTS ON STATE WATER RESOURCES CONTROL BOARD REGULATIONS ON UNDERGROUND STORAGE OF HAZARDOUS MATERIALS (SUBCHAPTER 16, TITLE 23 CAC)

The Sacramento Municipal Utility District is pleased to provide comments on the proposed regulations concerning design, construction, and operation of underground tanks storing hazardous materials. We recognize the need to regulate the underground storage of hazardous substances in order to protect the waters of the State. We also recognize that development of the regulatory program is a complex task. We do, however, wish to express some concerns we have with the draft regulations. General comments are presented below. These are followed by specific comments on various portions of the regulations.

GENERAL COMMENTS

We believe that many of the requirements in the draft regulations, such as those relating to monitoring existing tanks, are unnecessary to ensure that the public health is not threatened by unauthorized discharges of hazardous materials stored in underground tanks. Also, we believe that some of the requirements are overly prescriptive, requiring specific actions of the tank owner or operator, when a more general performance standard would be more appropriate. A performance standard would be more suitable for addressing site-specific characteristics. Also, it would allow the use of alternative technologies that are equally, and perhaps more effective, in detecting tank leaks.

In some cases, the regulations go far beyond the intent of the original legislation. Article 4 prescribes that owners of existing tanks, who are unable to implement visual monitoring, "shall implement each alternative monitoring methods as specified in Sections 2642 through 2646...." This is a mandatory requirement to use all the monitoring methods outlined in all cases with stated exceptions. Conversely, the Statute (Health and Safety Code Section 25284.1(b)) states "Alternative methods of monitoring.... may be required by the local agency...." The proposed regulations thus impose requirements beyond the authority granted by the statute and deny local agencies the flexibility to specify the extent of monitoring which is necessary.

While we recognize the intent of the proposed requirements for groundwater leak detection monitoring and groundwater quality assurance wells, we believe that the drilling the hundreds of thousands of wells in the State will greatly increase the possibility of groundwater contamination. Such wells may provide a direct conduit between potential sources of contamination and the groundwater they are designed to protect. We believe that when other leak detection methods are used, which can be shown to be effective, requiring fewer wells would promote rapid program implementation and decrease risk of aquifer contamination at substantially less cost.

SPECIFIC COMMENTS

2611 EXEMPTIONS

2611(a)(1): The exemption for underground storage tanks located in counties or cities that adopted their own ordinances prior to January 1, 1984, should be revised for clarity and conformity to the exemption in Health and Safety Code Section 25288. We suggest subsection (a)(1) be amended as follows:

"Underground storage tanks that are located within the jurisdictions of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, meets the requirements of Health and Safety Code Section 25288."

2620 DEFINITIONS

The definition for "motor vehicle fuel tank" should be clarified by adding the following sentence:

"This definition includes tanks used to fuel stationary internal combustion engines for the purpose of providing standby power to service facilities including, but not limited to, hospitals, utilities, and safety organizations."

2632 MONITORING STANDARDS FOR NEW UNDERGROUND STORAGE TANKS

2632(e): "The sump shall be monitored with a continuous sensor...."

We suggest that "continuous sensor" be defined to allow the use of electronic scanning sensors with scan rates of ten minutes or less.

2632(f): "The interstitial space between the walls of a double-walled tank may be monitored continuously using a pressure sensor...."

For clarity, define "pressure sensor" in a way similar to that described in the Statement of Reasons (page 3.20). It says: "The pressure sensor is used to monitor the tanks that either have a vacuum drawn in the space between the walls, or have the space pressurized. When a leak occurs, the pressure drops or vacuum is lost, and the alarm system is activated."

2634 MONITORING STANDARDS FOR NEW MOTOR VEHICLE FUEL TANKS

2634(d)(1): The benchmark of 50 gallons established for inventory control is unrealistic, especially when applied to large storage tanks. Climatic and atmospheric variances can easily imply a 50 gallon shortage. We recommend that this be revised to 100 gallons in order to provide a more realistic indicator and trigger for further testing.

2635 GENERAL CONSTRUCTION STANDARDS

2635(b)(1): The requirement that primary and double-walled tanks be fitted with a 0.25 inch steel striker plate may present a problem for non-steel tanks which contain certain substances. We recommend instead that the striker plate be "chemically resistant" and that it have a minimum area equal to twice the opening area.

2635(g)(1): The requirement that the facility operator must visually monitor the filling operation for overflow protection is overly restrictive. The delivery operator should also be allowed to visually monitor the filling process.

2640 APPLICABILITY (Article 4--Existing Tanks)

2640(e): "All owners.... who are not able to implement visual monitoring.... shall implement each alternate monitoring method...."

As mentioned in the General Comments, we believe this section is beyond the authority granted the Board, inconsistent with Health and Safety Code Section 25284.1, and unnecessary to protect the waters of the State. While there will be situations where multiple monitoring procedures should be used, the determination of which and how many is appropriately done on a case-by-case basis by the local permitting agency.

2641 VISUAL MONITORING

2641(c)(3): The frequency of visual inspections should be determined on a case-by-case basis by the local enforcement agency, rather than set rigidly at once per day minimum.

2644 SOIL TESTING AND EXPLORATORY BORING

2644(c): The requirement that a slant boring be drilled, if possible, to sample soil 50 feet directly below the tank invert should be required only if it can be shown or assumed that the groundwater is at least as deep as 50 feet below the tank. If the groundwater level is found to be high, soil samples need not be taken directly below the tank. Also, we suggest that after the word "possible" the words "or slant borings cannot be drilled without substantial risk to the integrity of underground utilities or structures," be inserted.

2646 GROUNDWATER LEAK DETECTION MONITORING

2646(e)(1): We question the Board's authority to require groundwater monitoring of all existing tanks. As previously stated, groundwater monitoring should be an option which may be chosen by a local agency, as per Health and Safety Code Section 25284.1.

Also, we are concerned that this requirement may cause more problems than it solves. Each of these wells could represent a potential pathway for contamination to travel to groundwater.

2647 ASSURANCE GROUNDWATER MONITORING

As stated with previous sections, this requirement is not an alternative as per Health and Safety Code Section 25284.1, but a mandatory action. As such, it is inconsistent with this section and beyond the Board's authority to require.

2652 UNAUTHORIZED RELEASES REQUIRING IMMEDIATE REPORTING

2652(b): "All unauthorized releases.... shall be reported within 24 hours after the release has been detected or should have been detected. The operator or permittee shall notify the local agency, Office of Emergency Services, and the Regional Water Quality Control Board."

Delete the phrase "or should have been deleted" as it is not realistic to expect a report until after a leak is detected. Drop "and the Regional Water Quality Control Board." Under established procedure the OES will notify the Regional Water Quality Control Board when appropriate.

2672 PERMANENT CLOSURE REQUIREMENTS

2672(d): "The owner of an underground storage tank being closed.... shall demonstrate to the satisfaction of the local agency, that <u>no unauthorized release has occurred</u>."

This requirement goes far beyond the intent of the statute. Health and Safety Code Section 25286 states that the owner shall "demonstrate to the local agency that there has been <u>no significant soil contamination resulting from a discharge</u> in the area surrounding the underground storage tank or facility." That is a significant difference between the statute and the proposed regulation. In this case, the Board has clearly overstepped the authority granted it by the statute.

2681 CATEGORICAL VARIANCES
AND
2682 SITE-SPECIFIC VARIANCES

We believe the variance fees are unreasonably high. We would prefer that the fees be based on actual costs incurred in processing the variance requests.

We appreciate this opportunity to comment on the proposed regulations for underground storage of hazardous materials, and we hope that these comments will be of use to you and your staff. If you have any questions, please contact me at (916) 732-6149.

J. D. Stack
Government Affairs Coordinator

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Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

BYRON J. MECHALAS
MANAGER, ENVIRONMENTAL OPERATIONS

TELEPHONE
(818) 302-1891

October 23, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

Subject: Comments on State Water Resources Control Board (SWRCB) Proposed Regulations Governing Underground Storage of Hazardous Substances under Subchapter 16, Title 23 CAC.

The Southern California Edison Company (SCE) has reviewed the draft regulations developed by the Board to implement the underground tank regulatory program established by AB 1362 (Sher). In accordance with the Notice of Proposed Rulemaking dated August 15, 1984, comments generated from this review are attached and are hereby submitted to the Board.

In addition to the specific comments attached, we have developed the following general comments and recommendations for improving the underground tank regulatory program:

MONITORING FLEXIBILITY

The proposed regulations should be amended to allow for use of alternative leak detection methods and systems on existing underground storage tanks.

- We believe the regulations should provide a variety of leak detection monitoring alternatives and the conditions under which the use of each would be appropriate. The alternative or set of alternatives which would be appropriate for a given underground tank would be determined by the tank owner and the local agencies.

- If tank owners and the local agencies are permitted to determine appropriate underground tank monitoring systems based on tank design and site-specific geological conditions, groundwater protection will be achieved at a much lower cost.

- This type of flexibility is what is contemplated in the statute and would place monitoring decisions in the hands of the local agencies.

PHASED APPROACH TO MONITORING COMPLIANCE

It will be virtually impossible for SCE, as well as most other industries, to comply with the July 1, 1985 monitoring compliance date. Existing manpower and equipment are inadequate to permit compliance within such a short time frame. SCE estimates that 100 man-months and 10 drilling rigs will be required for SCE to comply with the monitoring requirements by July 1, 1985. While contractors may be able to supply the manpower (which is questionable if every industry in the state is on the same time schedule), there simply are not enough drilling rigs available. Therefore, the proposed regulations should reflect this reality and provide for a phased approach to monitoring compliance.

SCE has developed a phased approach consisting of the following:

- Leaking Underground Storage Tanks

  The highest priority action of any underground tank regulatory compliance program is the elimination of leaking underground tanks. This will require the testing of all tanks, identification of the leaking tanks, and removal/replacement of these tanks (possibly by 7/1/85 depending on the number found). Concurrent with the testing will be the reevaluation of the need for each existing underground tank. After initial tank testing, many tanks which are not leaking will be targeted for near-term removal or closure. This decision will depend on the need, risk and economics associated with each individual tank. These tanks should not be required to have monitoring systems installed immediately prior to removal.

- Nonleaking Underground Storage Tanks

  Ranking of nonleaking tanks in terms of their potential risk to groundwater contamination is required. The options available for these tanks are replacement, closure, or installation of leak detection monitoring systems. Each tank will be brought into compliance, beginning with the high risk tanks and working towards the low risk tanks, over a reasonable period of time (possibly 5 years). Focusing resources on leaking and high risk tanks first rather than attempting to rush the installation of marginal monitoring systems on all tanks is a more effective approach toward ground water protection.

o Interim Leak Detection

To reduce the potential for ground water contamination from tanks not yet replaced or installed with leak detection monitoring, periodic tank integrity testing of these tanks will be conducted throughout the period necessary to complete the proposed compliance program.

STATUTORY CHANGES

To permit the phased approach outlined above, amendments to the statute are necessary. July 1, 1985 is the deadline established for outfitting existing underground tanks with leak detection monitoring systems. This date does not give SWRCB an opportunity to provide for the more reasonable phased compliance approach recommended above. The SWRCB should recognize this and support amendments which will provide for a more orderly and reasonable implementation of the underground tank regulatory program.

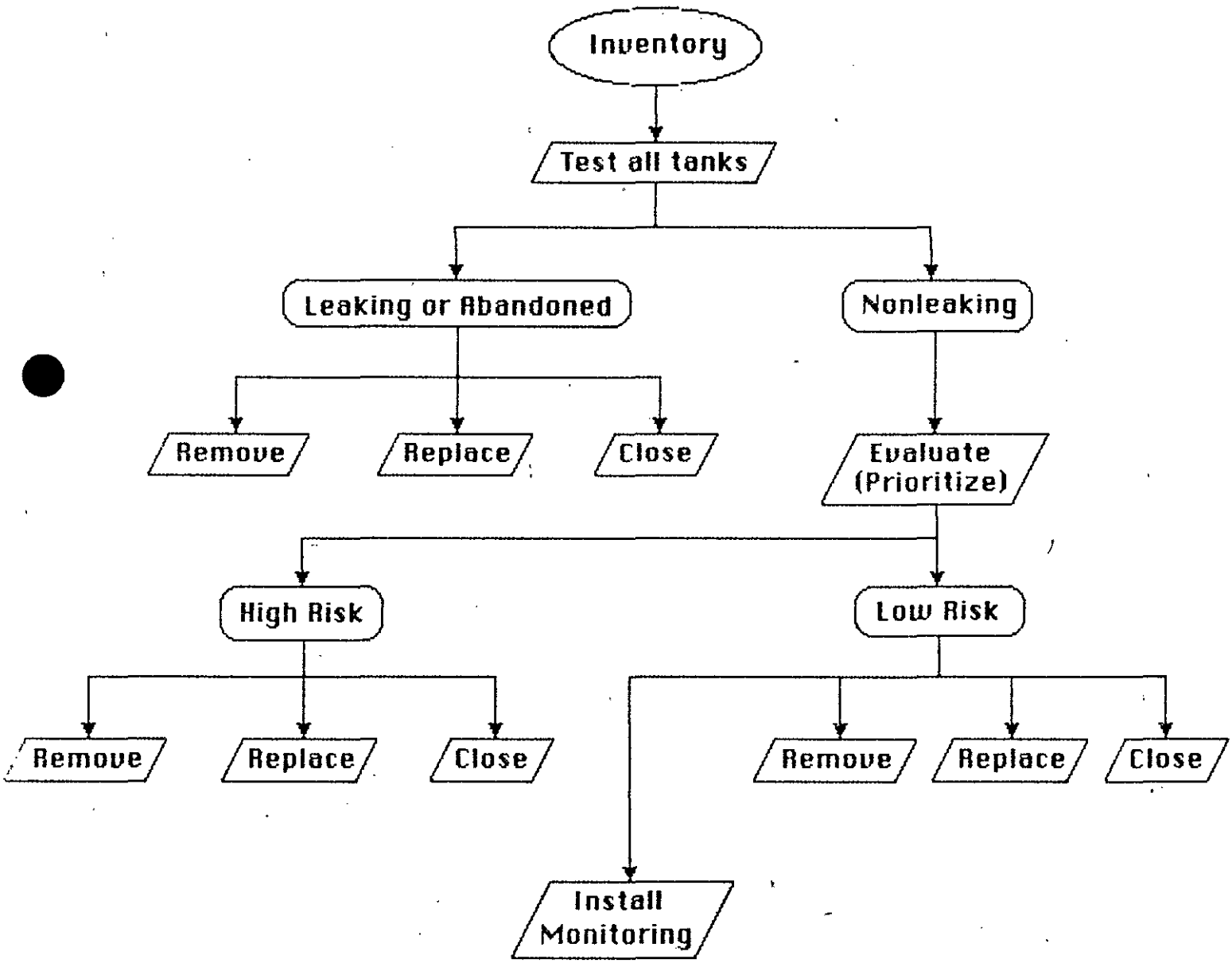
Byron J. Nicholas

Attachment

cc: Michael Campos

Southern California Edison

Underground Storage Tank
Regulatory Compliance Program



Environmental Operations
Wendell Suyama
10/22/84

Southern California Edison

Proposed Underground Storage Tank
Regulatory Compliance Program

Inventory - Identification of tanks and location

Tank testing - Tank integrity testing to prove tanks are not leaking and identify leaking tanks.

Inventory and testing to be completed by July 1, 1985.

Leaking and abandoned tanks to be removed from service as soon as identified.

Two major groups:
- o Leaking or abandoned tanks
- o Nonleaking tanks

Priority ranking:
- o Rank tanks according to potential risk to ground water.
- o Criteria used:
  - Age of tank
  - Tank construction and material
  - Hazardous substance stored
  - Soil characteristics
  - Proximity to usable ground water

Proposed order of action:
1. Leaking tanks
2. Abandoned tanks
3. High risk tanks
4. Remaining tanks

Proposed interim leak detection to consist of periodic tank testing and inventory control for tanks identified in groups 3 and 4 above.

Options available to tank owner:
- o Removal
- o Replacement
- o Closure in place
- o Install monitoring system
- o Repair and install monitoring system

Proposed compliance program to be completed within 5 years.

SOUTHERN CALIFORNIA EDISON COMPANY
COMMENTS ON THE (8/23/84) DRAFT REGULATIONS
- STATE WATER RESOURCES CONTROL BOARD

Article 1. General

Section 2611. Exemptions

Subsections (a)(1) and (a)(1)(A) - References to Articles 3 and Article 4 of the subchapter should be deleted. Independent local ordinances need only meet, as a minimum, the requirements of the statute, Health and Safety Code Sections 25284 and 25284.1, and not the proposed regulations.

Subsection (b) - The list of structures not considered as underground tanks should include, "portions of connecting piping that are above the surface of the ground". These above ground structures may be regulated by the Board pursuant to the Porter-Cologne Water Quality Control Act to ensure that they do not pose a threat to water quality.

Section 2620. Definitions

"Double-walled container" should be defined.

"Motor vehicle" and "Motor vehicle fuel tank" - These definitions should be deleted and "motor vehicle fuels" should be defined since the term "motor vehicle fuels" is used throughout Chapter 6.7 of the Health and Safety Code and the proposed regulations. The intent of the statute is to regulate the contents of the tank (material stored) rather than the specific use of the stored material.

"Pipe" - The definition is the same as provided in the statute and should be deleted. However, because connecting pipe is included in the definition of "tank", "connecting piping" should be defined as, "pipe connected to an underground storage tank and is substantially underground". Without this definition, an unfavorable interpretation of "connecting piping" could result in an unreasonable requirement and overregulation, i.e., lengths of pipe which are above ground will be subject to monitoring requirements intended for underground tanks in addition to the requirements of the Porter-Cologne Water Quality Control Act.

"Tank" - The definition of "tank" does not adequately define what a tank is and should be revised. The definition should describe what the physical characteristics of a tank are, e.g., "A self-supporting structure which was designed to store and prevent the uncontrolled release of a hazardous substance into the environment."

Section 2631. Construction Standards for New Underground Storage Tanks

Subsection (c) - Construction requirements are in terms of performance standards. Compliance with these standards will require "expert" evaluation which in most cases will be unavailable at the local level. We suggest provisions be made for the State or regional boards to provide assistance and/or approvals outside of the costly variance process.

Subsection (e) - To avoid possible misunderstanding as a result of the use of the term "storage facility", we recommend that it be replaced with "secondary containment".

Subsection (e) - There appears to be a typographical error. We believe the sentence should read, ". . . "Subsections (d) and (f) of this section."

Subsections (e) and (f) - The term "secondary container" is used in these requirements. We believe "secondary containment" is a more appropriate term.

Subsection (h) - There appears to be a typographical error. We believe the sentence should read, ". . . Sections 2631(d) and (e)."

An exemption is provided in Section 2633 (f) for pressurized piping systems associated with new motor vehicle fuel tanks. This exemption should be applicable to all new tanks or at least those tanks which comply with Sections 2631 and 2632 and will store motor vehicle fuels only. We propose the following new subsection be added:

NEW Subsection (g) - Pressurized piping systems that include an automatic, continuously operating pressure loss detector and flow restriction device are exempt from the secondary container requirements of the article. This detector shall be connected to a visual or audible alarm system unless it provides at least a 50 percent reduction from normal flow rates.

Section 2632. Monitoring Standards for New Underground Storage Tanks

Subsection (c) - The requirement for a locked cap on each well is unnecessary for wells located within secured facilities. Subsection (c) should be revised to read, ". . . with a waterproof cap that is locked if not within a secured facility."

Subsection (e) - This subsection is overly prescriptive and would preclude the use of alternative monitoring systems capable of detecting the entry of hazardous material into the secondary containment. Health and Safety Code Section 25284 (b) does not specifically require monitoring with a continuous sensor or its removal on a semiannual basis. Subsection (e) should be revised to read, "The sump shall be monitored on a periodic basis. All standing liquid shall be sampled and analyzed for hazardous material stored in the primary container."

Subsection (e)(1) and (2) - This subsection is overly prescriptive and impractical, and should be deleted. The 0.5 inch requirement for detecting all standing liquid is not practical for the following reasons:

1. At 0.5 inch, it is difficult to get a good sample for analysis as required, and
2. Existing equipment (pumps) are unable to adequately remove all liquid below this level. This inability could result in a constant alarm situation, if the 0.5 inch level is ever reached.

Section 2633. Construction Standards for New Motor Vehicle Fuel Tanks

Subsection (e) - The second sentence, as written, does not allow the secondary container to contact the highest anticipated ground water. The distance from the bottom of the secondary containment to the highest expected ground water has no bearing on the ability of the secondary containment to preclude the contact of any leaked substance from the primary container with ground water. Since the intent is to preclude contact of any leaked substance with ground water, rather than contact of the secondary container with ground water, the second sentence should be deleted. The following sentence should be added, "Where practical, the leak interception and detection system shall be above the highest ground water. Any secondary container which could come into contact with ground water shall be designed to preclude the contact of any leaked substance from the primary container with ground water."

Section 2634. Monitoring Standards for New Motor Vehicle Fuel Tanks

Subsection (a)(2) - There are no benefits associated with the daily gauging and inventory reconciliation of hazardous material stored in double-walled tanks, only additional cost. Double-walled tanks with interstitial monitoring should be exempt from this requirement.

Subsection (a)(3) - The requirement specifying hydrostatic testing is too restrictive. Other tank integrity testing methods should be allowed, without having to apply for a variance. Double-walled tanks should be exempt from this requirement.

Subsection (d)(1) - The daily loss or gain of 50 gallons is unrealistic for large tanks. A more realistic figure, using present state of the art gauging, would be 100 gallons. The higher figure will reduce the number of false alarms and will eliminate unnecessary follow-up testing.

Section 2635. General Construction Standards

Subsection (b)(2) - The word "guaranteed" should be defined.

Subsection (b)(4) - There appears to be a typographical error. We believe the sentence should read, "Cathodically protected steel tanks and steel clad with fibre reinforced plastic shall be fabricated and designed to the . . ."

Subsection (c)(2) - The requirement to submit all drawings, photographs, and plans creates an excessive administrative burden on all parties and should be deleted. We propose the following: "Copies of as-build drawings shall be kept at the facility and be available for inspection by the local agency."

Subsection (g)(2) - The 110 percent available capacity requirement is unnecessarily restrictive and should be reduced to 100 percent available capacity.

Article 4. Existing Underground Storage Tank Monitoring Criteria

More flexibility is needed in Article 4. In the Fiscal Impact Statement for Proposed Subchapter 16 Regulations, the Board recognizes that local governments will probably take five years before all monitoring systems are in place and the program is fully operational. However, the same recognition is not given to private industry, which owns and operates over 95% of the underground tanks in California, and is expected to implement the provisions of these regulations by July 1, 1985 at a cost in excess of 1.75 billion dollars.

Industry will elect to replace many existing underground tanks with new double-walled tanks. Tanks which are not leaking and are scheduled to be removed or replaced should not be required to install monitoring methods by July 1, 1985. The regulations should allow owners to implement carefully thought out tank phaseout or replacement programs in lieu of the installation of monitoring systems as required by Article 4. Resources will be wasted if monitoring systems are required to be installed on nonleaking tanks which are scheduled to be removed or replaced.

Section 2640. Applicability

Subsections (a), (c), (e) and (f) - Approval of monitoring systems and alternatives will require "expert" evaluation which in most cases will be unavailable at the local level. We suggest provisions be made for the State or regional boards to provide assistance and/or approvals outside of the costly variance process.

Subsection (c) - Stating the intent of the requirement and making allowances for other methods which achieve the same intent is an excellent way of building flexibility into the regulations. This allows for special site specific conditions and provides more efficient utilization of the permittee's resources without relaxing environmental protection. This practice should be incorporated throughout the sections in Article 4.

Section 2641. Visual Monitoring

Subsection (c)(3) - The frequency for visual inspections is "daily" which is not defined and could create operational problems for owners. We suggest, ". . . daily at a minimum, and shall be more frequent if necessary" be deleted and replaced with ". . . at intervals determined by the local agency".

Subsection (c)(4) - We believe the intent of this requirement is only to record the liquid level in the tank at the time of the inspection (daily). The additional requirement to report this information to the local agency on a daily basis creates an unreasonable administrative burden. We propose the words "and reporting" be deleted.

Section 2642. Underground Storage Tank Testing

Subsection (d) - Because of the widespread use of asphalt coated steel tanks, the category into which these tanks fit should be shown.

Subsection (d) - The testing schedules for Categories A and B do not take into account the local soil conditions. Because some soils are less likely to corrode a tank, testing frequency should be allowed to decrease, i.e., once every two to three years instead of annually depending on soil conditions.

Section 2643. Inventory Control

Subsection (b) - The exemption from metering should be extended to hazardous substances not subject to direct retail resale. Tanks which are not used for retail sales often do not have the gaging required to comply with this section. This exemption is based on the acknowledged inherent inaccuracies of measurements used in inventory control versus actual or perceived increases in leak detection sensitivity. Therefore, owners who operate their tanks only for internal use (not for retail sales) should have the option of implementing this section.

Subsection (b) - The exemption from metering should be extended to hazardous waste storage tanks if it can be demonstrated that a waste collection system is not susceptible to metering.

Subsection (d)(1) - A liquid elevation measurement is not practical to an accuracy of one-eighth of an inch. "Capable of measuring to one-eighth of an inch" should be defined as having equipment calibrated in one-eighth of an inch graduations.

Subsection (e) - Owners not involved in retail sales should have the option of implementing this section. See previous comments on subsection (b) of this section.

Section 2644. Soil Testing and Exploratory Boring

Subsection (b) - The objective of Section 2644 is to determine if prior usage of an underground tank has resulted in an unauthorized release. New tanks, classified as "existing" tanks, which were installed during the interim period between the adoption of AB 1362 and the implementing regulations should be exempt from this requirement. The probability of an unauthorized release is very remote for these tanks if they are double-walled or have passed an integrity test. Also, consistent with the intent stated in Section 2640(c), an exemption for alternative methods should be provided. Therefore, the following exemptions should be added:

(3) Existing tanks that were installed after January 1, 1984.
(4) An alternative method will be used to determine whether prior use of a tank has resulted in the release of hazardous substances in the vadose zone.

Subsection (c) - Given the intent of this requirement, the depth of the boring should be to..."50 feet or less below the invert of the tank." The borings specified in subsection (d) of this section would provide the same necessary data, and the same or greater degree of confidence as those specified in subsection (c). The intent of this section would still be met if tank owners were given a choice between subsections (c) or (d).

Subsection (d) - If the specific gravity of the stored substance is less than that of water, the leaked substances will move toward the ground water surface, and the requirement to drill to a depth of 50 feet below tank invert may be unnecessary. Provisions for these lighter-than-water substances should be made. The following should be added, "For tanks storing substances with specific gravities less than water, borings shall be drilled to a depth of 50 feet below tank invert or until ground water is encountered, unless ground water is deeper than 200 feet."

Subsection (e)(2) - The Board should list or reference all approved EPA methods to assist the regulated community and establish standardization of protocol for collection and analysis of samples similar to their effort in groundwater monitoring.

Subsection (e)(4) - The requirement to have a registered civil engineer, geologist or certified engineering geologist log the boring is overly restrictive and will not provide any additional degree of confidence in the data collected. Having a registered engineer or geologist at the drill rig site during the boring would be a burden on the tank owner and an inefficient use of personnel. The necessary data at the drill rig can be adequately collected by a qualified technician or non-registered engineer or geologist certified by a registered engineer or geologist. This method would better utilize personnel during a period of high activity in soil testing and exploratory boring.

Section 2645. Vadose Zone Detection Monitoring

Subsection (b)(2) - This subsection should be amended to read, "Ground water is continuously or periodically above a point 5 feet below the invert of the underground storage tank or vadose zone monitoring is not . . ."

Subsection (b)(3) - This subsection should be amended to read, "Vadose zone monitoring is not required if the hazardous substance(s) being stored is not susceptible to detection by vadose zone monitoring methods or if soil conditions make the use of vadose zone monitoring methods impractical".

Section 2646. Ground Water Leak Detection Monitoring

At some facilities, ground water is maintained at an artificial level lower than the natural level by a system of dewatering wells. The ground water level as referred to in these regulations should mean the ground water level that exists at a facility whether it be a natural condition or an artificially induced condition.

Subsection (e)(4) - The 5 foot minimum depth requirement for the surface seal is overly prescriptive and should be deleted. As written, the requirement precludes the use of alternative sealing techniques. An example of an alternative surface seal is the installation of a pad or slab (approximately 6 inches thick) of concrete or suitably impermeable material and of sufficient radius to prevent seepage of surface water to the annulus. Use of this alternative would raise the base of the surface seal an additional 4 feet and allow the perforations required by subsection (e)(6) to extend above ground water levels as shallow as 1 foot. This in turn would allow valid sampling without requiring the water table to be pumped down to 15 feet below the surface (assuming a required surface seal depth of 5 feet).

Subsection (e)(5) - Under conditions where the water table is above the base of the surface seal, i.e., within 5 feet of the ground surface (assuming a required surface seal depth of 5 feet), the regulations require that a pump capable of drawing the ground water level down to a depth of 10 feet below the base of the seal be installed.

Under some conditions, e.g., very high yielding aquifers, it may not be possible to obtain the required 15 feet drawdown for sampling purposes. If the necessary drawdown is obtainable, this requirement will create other environmental and regulatory problems associated with discharging the water. In some very permeable formations such as occurs in coastal areas where water tables are often near the surface, pumping rates could be several hundreds of gallons per minute. The ability to comply with this requirement will be contingent on obtaining necessary NPDES permits or wastewater discharge permits for sewers.

Section 2647. Assurance Ground Water Monitoring

Subsection (c)(1) - This subsection requires that perforations start 10 feet above the highest ground water elevation, whereas subsection (d)(6)(B) requires that perforations start at the tank bottom elevation. The perforation requirements for (d)(6)(B) should be the same as those for (c)(1).

As written, the regulations require three monitoring wells be installed to a maximum depth of 100 feet if the highest water table usage is between 5 feet below the tank invert and 100 feet below the ground surface. According to this, if a water table normally fluctuates between 95 feet and 135 feet below the ground surface three monitoring wells would be required to a maximum depth of 100 feet. Under this situation, the wells would probably be dry the majority of the time.

It is proposed that at underground tank locations where the highest groundwater table is determined to occur between 5 feet below the tank invert and 100 feet below the ground surface, one monitoring well, downgradient, should extend to the base of the aquifer or to a depth of 10 feet below the lowest anticipated water table but not to exceed 200 feet.

Subsection (d) - Given the generally flat nature of water tables and the improbability of having three wells all being located within 500 feet, it would be reasonable to allow the water table depth to be estimated using two wells. The allowable distance from the tank to the wells should be based on the hydrogeology and regional consistency of the water table. If more distant wells (within 1 mile) indicate that the water table is in excess of 250 feet beneath the surface at the tank location, this should be deemed adequate evidence for exemption of assurance groundwater monitoring including the exploratory boring.

Subsection (e) - If the substance stored has a specific gravity less than that of water, and the monitoring well is perforated above and below the water table as required in subsections (c)(1) and (c)(2) of this section, and section 2646 (e)(6) and (e)(5), then samples retrieved by bailing from the water surface within the downgradient well should accurately reflect the presence of

any contaminant, negating the need for removing casing volumes of water from the well. Provisions for these lighter-than-water substances should be made. The following should be added, "Tanks storing substances with specific gravities less than water are exempt from the requirement to remove sufficient volumes of water before sampling."

Article 5. Release Reporting Requirements

Section 2651. Unauthorized Releases Requiring Recording

Subsection (a)(3) - The requirement to clean up releases within eight hours is too restrictive. This requirement should be relaxed to allow proper determination of the appropriate clean up measures to be taken. The need for immediate corrective action should be related to the severity of the release and the integrity of the secondary container.

Section 2652. Unauthorized Releases Requiring Immediate Reporting

Subsection (b) - The last sentence of this subsection should be changed to read, "The operator or permittee shall notify the local agency, State Office of Emergency Service or the Regional Water Quality Control Board".

Subsection (c)(3) - The mandatory requirement to submit cost information is unnecessary and as a separate effort will add to the overall cost of cleanup. This requirement should be deleted and replaced with an option to voluntarily disclose cost if readily available.

Article 7. Closure Requirements

Section 2670. Applicability

Subsection (f) - The time of notice prior to cessation of storage should be left up to the local agency.

Section 2672. Permanent Closure Requirements

Subsection (c)(2) - Add to this requirement, "Piping may be handled, transported or disposed as a nonhazardous waste after it has been properly cleaned. In either case, the owner must document to the local agency that proper disposal has been completed." This addition is consistent with subsection (b)(3) and will provide greater flexibility during closure.

Article 8. Categorical and Site-Specific Variance Procedures

Section 2680. Applicability

Subsection (a) - The need for categorical variances would be reduced if Articles 3 and 4 of this subchapter made proper allowances for alternative methods. Also, language should be added to this subsection to specifically provide for compliance schedule variances. This will assist in reducing the administrative burden placed on the Board and build flexibility into these regulations.

Section 2681. Categorical Variances

Subsection (a) - The definition of categorical variance should include an alternative compliance program. A proposed alternative compliance program would consist of a proposed program (e.g., phaseout or use of alternative monitoring methods in conjunction with a proposed compliance schedule.

Section 2682. Site-Specific Variances

Subsection (g) - There is a typographic error in the second to last sentence, change "categorical" to "site-specific".

Article 10. Permit Application, Annual Report and Trade Secret Requirements

Section 2712. Permit Conditions

Subsection (f) - The three month duration and the inability to renew or extend a provisional permit is too restrictive and should be deleted. The local agencies should have the authority to set the duration of a provisional permit and determine if renewal or extension is appropriate.

Subsections (h) and (i) - Two subsections have been designated "(h)". The second subsection "(h)" should be changed to "(i)".

113 D

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

BYRON J. MECHALAS
MANAGER, ENVIRONMENTAL OPERATIONS

TELEPHONE
(818) 302-1891

November 26, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

Subject: Comments on State Water Resources Control Board (SWRCB) Proposed Regulations Governing Underground Storage of Hazardous Substances under Subchapter 16, Title 23 CAC.

The Southern California Edison Company (SCE) has reviewed the proposed regulations, dated November 9, 1985, developed by the Board to implement the underground tank regulatory program established by AB 1362 (Sher). Comments generated from this review are attached and hereby submitted to the Board.

In addition to the submittal of specific comments, we would like to take this opportunity to commend the staff for the excellent work they have done in developing these regulations. The open-minded attitude displayed by the staff in this rulemaking has been encouraging and demonstrates that cooperation between the Board, industry and concerned individuals can result in the development of reasonable and environmentally sound regulations.

GENERAL COMMENTS

Monitoring Flexibility

The revisions to the proposed regulations which allow for use of alternative leak detection methods on existing underground storage tanks is the type of flexibility we sought in our previous comments. We believe the availability of leak detection monitoring alternatives is a major step towards the development of reasonable regulations and is what was contemplated in the statute.

Phased Approach to Monitoring Compliance

As stated in our October 23, 1984 comments, it will be virtually impossible for SCE, as well as most other industries, to comply with the July 1, 1985 monitoring compliance date. Existing manpower and equipment are inadequate to permit compliance within such a short time frame. We had recommended that the proposed regulations be revised to provide for a phased approach to monitoring compliance. The revised regulations now provide tank owners with an interim alternate monitoring method for tanks scheduled for closure within 3 years. While this is a significant provision, additional changes are needed to provide time for sound monitoring decisions to be made on those tanks which will not be closed.

SCE's proposed phased approach would allow for both, but cannot be implemented to its full extent under the proposed regulations.

The highest priority action of our underground tank regulatory compliance program is the elimination of leaking underground tanks, which will require testing of all tanks and remedial action for leaking tanks. This is a major effort which will consume most of our available resources in the near-term.

The regulations, as currently written, will require SCE to commit to the phase out of nonleaking tanks by July 1, 1985 or have an approved monitoring system installed. After July 1, 1985, existing tanks without leak detection monitoring systems must be closed.

The decision to install a monitoring system or close a tank requires an analysis of risk, economics, and need for an individual tank. This is an important business decision that requires careful consideration and time. Our ability to make sound decisions on the fate of more than 200 tanks is severely diminished by the higher priority effort to identify and eliminate any leaking tanks. The July 1, 1985 deadline to commit to the closure of nonleaking tanks within three years will force SCE to close all of our existing tanks without proper evaluation, simply because of the time restrictions. We believe the proposed Interim Alternate Monitoring alternative can be revised to accommodate the need for more time without compromising ground water protection.

SCE still believes that amendments to the statute are necessary. We look to the Board to support amendments which will provide for a more orderly and reasonable implementation of the underground tank regulatory program.

Sincerely,

Byron J. Nicholas

cc: Michael Campos

SOUTHERN CALIFORNIA EDISON COMPANY
COMMENTS ON THE (11/9/84) PROPOSED REGULATIONS
- STATE WATER RESOURCES CONTROL BOARD

Article 1. General

Section 2620. Definitions

"Motor vehicle" and "Motor vehicle fuel tank" - These definitions should be deleted and "motor vehicle fuels" should be defined since the term "motor vehicle fuels" is used throughout Chapter 6.7 of the Health and Safety Code and the proposed regulations. The intent of the statute is to regulate the contents of the tank (material stored) rather than the specific use of the stored material.

"Connecting piping" should be defined because it is included in the definition of "tank". "Connecting piping" should be defined as, "pipe connected to an underground storage tank and is substantially underground". Without this definition, an unfavorable interpretation of "connecting piping" could result in an unreasonable requirement and overregulation. Pipe which is above ground will be subject to the monitoring requirements intended for underground tanks. We believe these above ground structures should be regulated by the Board pursuant to the Porter-Cologne Water Quality Control Act to ensure that they do not pose a threat to water quality.

Section 2631. Construction Standards for New Underground Storage Tanks

An exemption is provided in Section 2633 (g) of this Article for pressurized piping systems that include an automatic, on-line operating pressure loss detector and flow restriction device and suction piping systems. This exemption should be added to this section (2631) for clarity. We propose the following new subsection be added to this section:

NEW Subsection (t) - Pressurized piping systems that include an automatic, on-line operating pressure loss detector and flow restriction device are exempt from the leak interception and detection requirements of Section 2632 of this Article. This detector shall be connected to a visual or audible alarm system unless it provides at least a 50 percent reduction from normal flow rates. Suction piping systems shall be evaluated at least once each day of operation to detect if a leak in the piping exists.

Section 2632. Monitoring Standards for New Underground Storage Tanks

Subsection (d)(2)(A) - The requirement to include the location and availability of required equipment not permanently on-site is an unnecessary administrative burden. Cleanup liability and compliance with operating permit requirements is more than enough to motivate tank owners to obtain necessary equipment should a release occur.

Section 2633. Construction Standards for New Motor Vehicle Fuel Tanks

Subsection (g) - This subsection provides an exemption from the leak interception and detection requirements of Sections 2632 and 2633 of this Article. This exemption should refer to Sections 2632 and 2634 of this Article.

Section 2635. General Construction Standards

Subsection (c)(8) - The requirement to submit all drawings, photographs, and plans creates an excessive administrative burden on all parties and should be deleted. We propose the following: "Copies of as-build drawings shall be kept at the facility and be available for inspection by the local agency."

Article 4. Existing Underground Storage Tank Monitoring Criteria

Section 2640. Applicability

Removal of the mandatory requirement to detect past authorized releases and to measure ground water quality directly for all tanks is a significant move toward monitoring flexibility.

Section 2642. Visual Monitoring

Subsection (c)(3) - The frequency for visual inspections is "daily" which is not defined and could create operational problems for owners. We suggest, ". . . daily at a minimum, and shall be more frequent if necessary" be deleted and replaced with ". . . at intervals determined by the local agency".

Subsection (c)(4) - We believe the intent of this requirement is only to record the liquid level in the tank at the time of the inspection (daily). The additional requirement to report this information to the local agency on a daily basis creates an unreasonable administrative burden. We propose the words "and reporting" be deleted.

Section 2641. Monitoring Alternatives

Table 4.1 - Alternative 4 indicates that the minimum monitoring frequency for ground water is weekly. This is inconsistent with Subsection (c)(4)(B), which states the minimum monitoring frequency for ground water is monthly.

Subsection (c)(8)(A)(ii) - This subsection does not allow the tank owner to implement one of the 7 other monitoring alternatives if this alternative is selected. The short time frame will force many tank owners to close tanks without an appropriate evaluation of the other monitoring alternatives. We believe the staff did not adequately consider the problems associated with owning numerous tanks. In addition to the problem of funding a compliance program, large owners are faced with the requirement to test all their tanks, develop and implement cleanup programs for leaking tanks and evaluate nonleaking tanks for monitoring system installation within the same allotted time as small businesses. The sheer number of tanks that large owners need to evaluate dictates the need for additional time. We believe that allowing tank owners the option of installing other alternatives will significantly reduce the impact on the regulated community without compromising ground water protection. We propose Subsection (c)(8)(A)(ii) be revised as follows (new text underlined):

> (ii) Any underground storage tank owner who provides a written commitment to the local agency that the underground storage tank <u>is not leaking and</u> will be closed according to the procedures specified in Article 7 <u>or have installed one of the first seven monitoring alternatives</u> within 3 years...

#113-E

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

January 17, 1985

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

Subject: Comments on State Water Resources Control Board (SWRCB) Proposed Regulations Governing Underground Storage of Hazardous Substances under Subchapter 16, Title 23 CAC.

The Southern California Edison Company (SCE) has reviewed the proposed regulations, dated December 28, 1984, developed by the Board to implement the underground tank regulatory program established by AB 1362 (Sher). Comments generated from this review are attached and hereby submitted to the Board.

GENERAL COMMENTS

Phased Approach to Monitoring Compliance

As stated in our October 23, 1984 comments, it will be virtually impossible for SCE, as well as most other industries, to comply with the July 1, 1985 monitoring compliance date. Existing manpower and equipment are inadequate to permit compliance within such a short time frame. The regulations will require SCE, by July 1, 1985, to have an approved monitoring system installed on nonleaking tanks or commit to their closure within 3 years. After July 1, 1985, existing tanks without leak detection monitoring systems must be closed.

The decision to install a monitoring system or close a tank requires an analysis of risk, economics, and need for an individual tank. This is an important business decision that requires careful consideration and time. Our ability to make sound decisions on the fate of more than 200 tanks, by July 1, 1985, is severely diminished because we are

committing our resources to the higher priority effort of identifying and eliminating leaking tanks. Attempting to meet the July 1, 1985 deadline will force SCE to close most of our existing tanks without proper evaluation, simply because of the lack of resources and time restrictions. We believe the proposed Interim Alternate Monitoring alternative can be revised to accommodate the need for more time for monitoring system selection without compromising ground water protection. SCE still believes that amendments to the statute are necessary. We look to the Board to support amendments which will provide for a more orderly and reasonable implementation of the underground tank regulatory program.

Sincerely,

Edward J. Faeder

Edward J. Faeder, Ph.D.
Manager of Environmental Operations

cc: Michael Campos

bcc: W. H. Suyama
C. P. Doyle
J. H. McKinley/R. De La Parra
M. M. Hertel/F. L. Melone
D. Smith
A. Elseewi
D. P. Felt

SOUTHERN CALIFORNIA EDISON COMPANY
COMMENTS ON THE (11/9/84) PROPOSED REGULATIONS
- STATE WATER RESOURCES CONTROL BOARD

Article 1. General

Section 2620. Definitions

"Connecting piping" should be defined because it is included in the definition of "underground storage tank". "Connecting piping" should be defined as, "the portion of pipe connected to an underground storage tank that is substantially underground". Without this definition, an unfavorable interpretation of "connecting piping" could result in an unreasonable requirement and overregulation. Pipe which is above ground will be subject to the monitoring and construction requirements intended for underground tanks. We believe these above ground structures should be regulated by the Board pursuant to the Porter-Cologne Water Quality Control Act to ensure that they do not pose a threat to water quality.

Section 2631. Construction Standards for New Underground Storage Tanks

An exemption is provided in Section 2633 (g) of this Article for pressurized piping systems that are monitored according to the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code. This exemption should be added to this section (2631). We propose the following new subsection be added to this section:

NEW Subsection (t) - Pressurized and suction piping systems that are connected to an underground storage tank that is constructed to the requirements of this section and monitored pursuant to the requirements of Section 2632 of this article are exempt from the leak interception and detection system requirements of this section, provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

Section 2632. Monitoring Standards for New Underground Storage Tanks

Subsection (d)(2)(A) - The requirement to include the location and availability of required equipment not permanently on-site is an unnecessary administrative burden. Cleanup liability and compliance with operating permit requirements is more than enough to motivate tank owners to obtain necessary equipment should a release occur.

Section 2633. Construction Standards for New Motor Vehicle Fuel Tanks

Subsection (g) - Reference to suction piping systems has been deleted from this section. We suggest that this subsection be revised to read (new text underlined):

> (g) - Pressurized and suction piping systems that are connected to an underground storage tank ...

Section 2635. General Construction Standards

Subsection (c)(8) - The requirement to submit all drawings, photographs, and plans creates an excessive administrative burden on all parties and should be deleted. We propose the following: "Copies of as-build drawings shall be kept at the facility and be available for inspection by the local agency."

Article 4. Existing Underground Storage Tank Monitoring Criteria

Section 2642. Visual Monitoring

Subsection (c)(3) - The frequency for visual inspections is "daily" which is not defined and could create operational problems for owners. We suggest, ". . . daily at a minimum, and shall be more frequent if necessary" be deleted and replaced with ". . . at intervals determined by the local agency".

Section 2641. Monitoring Alternatives

Table 4.1 - Alternative 4 indicates that the minimum monitoring frequency for ground water is weekly. This is inconsistent with Subsection (c)(4)(B), which states the minimum monitoring frequency for ground water is monthly.

Subsection (c)(8)(A)(ii) - This subsection requires an existing tank to be closed within 3 years and does not allow the tank owner to implement one of the seven other monitoring alternatives if this alternative is selected. The short time frame will force many tank owners to close tanks without an appropriate evaluation of the other monitoring alternatives. We believe the staff did not adequately consider the problems associated with owning numerous tanks. In addition to the problem of funding a compliance program, large owners are faced with the requirement to test all their tanks, develop and implement cleanup programs for leaking tanks and evaluate nonleaking tanks for monitoring system installation within the same allotted time as small businesses. The sheer number

of tanks that large owners need to evaluate dictates the need for additional time, since available resources are not proportional to the number of tanks. We believe that the option of installing other monitoring alternatives under this alternative will significantly reduce the impact on the regulated community without compromising ground water protection because of the interim monitoring requirements. We propose Subsection (c)(8)(A)(ii) be revised as follows (new text underlined):

> (ii) Any underground storage tank owner who provides a written commitment, legally binding, to the local agency that the underground storage tank <u>is not leaking and</u> will be closed according to the procedures specified in Article 7 <u>or have installed one of the other seven monitoring alternatives provided in</u> this subchapter within 3 years ...

Subchapter 15
#115

GENELCO, INC.

October 17, 1984

Mr. Harold Singer
California Regional Water Quality Board
1111 Jackson Street
Oakland, Ca 94607

Dear Mr. Singer;

I appreciate the time you have afforded us in the past concerning the underground storage tank leak problem. I want to reafirm in writing our support for early leak detection and our belief that vadose zone monitoring technology available today is the safest, most cost effective way to protect our underground water supply.

Genelco has been developing an electronic device suitable for monitoring underground fuel storage tanks. We became aware of California's legislative activity concerning underground tanks about a year ago. We understood that typically, local fire departments were responsible for enforcing this type of legislature, so we contacted Santa Clara valley Fire Departments for their input into the features and capabilities of a monitoring system. As a result of those and subsequent meetings, the present version of SOIL SENTRY evolved.

It has always been our goal to provide an early warning of hazardous material leaks. Once these hazardous materials enter the underground water supply it is not only expensive to clean up but the contaminated water may never be completely restored. It appeared to us that liquid detection schemes would require a large product leak before detection, and there was a high probability of polluting the underground water supply before detection and correction. Even though Genelco specializes in accurate and reliable detection of liquids (LEVELITE liquid level sensors and controls), we decided to pursue vapor sensing utilizing technology we had previously worked with.

11649 Chairman Drive, Suite 16 • Dallas, Texas 75243 • (214) 341-8410
Telex 4992566

In a underground storage system there is one or more tanks and a piping system to facilitate removal or addition of material to the storage tank. According to our information, the piping system can be the source of leaks 80% of the time. Any leak detection system must, therefore; take into account not only the tank but also the piping system as well.

When a leak occurs the liquid flows vertically within a 30 degree cone. The vapors from that leak propagates through the soil in a much larger area of influence than the 30 degree cone. The speed and distance these vapors travel depend on the type of soil. In the backfill of buried tanks that typically range from fine sand through course gravel the propagation is not only widespread it is also relatively fast.

SOIL SENTRY is an aspirated vapor sensing system utilizing a diaphragm metering pump to create a slight negative pressure in perforated PVC pipe placed vertically next to the tank or horizontally along and beneath piping runs. This technique aids in the propagation of vapors and will expand the natural area of influence of the vapors. By using high reliablity solenoid valves and tubing we can access twelve different areas thus insuring that any leak will be detected and at a reasonable cost.

A SOIL SENTRY has been in operation in a service station in Palo Alto for over four months. During that time two events have occured that have proved the practacallity of this system. One in particular proves the sensitivity and diagnostic capability of SOIL SENTRY. During that event a check valve located approximately ten feet from the nearest sensing location was opened spilling one half to one gallon of gasoline into the backfill of the tank. Within twenty minutes SOIL SENTRY was registering high vapor at that sensing location. Within twenty four hours the next nearest sensing location, approximately twenty feet from the spill was registering high vapors. This condition was monitored for two weeks as the vapor readings gradually subsided indicating the spill was a one time occurance, not a continuous leak. It is also interesting to note that one of these sensing locations was located parrallel to the tank fill nozzel to see if the backfill saturated with gasoline from overfill and sloppy filling practices would have enough vapor to cause the SOIL SENTRY to be ineffective. Readings at the SOIL SENTRY confirmed pollution present in the backfill but the SOIL SENTRY could be set up to ignore these vapors.

It is our strong belief, Mr. Singer, that vapor monitoring technology as employed in SOIL SENTRY is all that is required to fully protect the environment from leaking underground storage systems. This system can eliminate redundant monitoring systems thus providing a cost effective solution to the leak detection problem. Our SOIL SENTRY goes beyond simple vapor monitoring by incorporating sofisticated hardware and software to insure that not only can vapor be detected but that the system is functioning properly and has not been tampered with. SOIL SENTRY not only monitors the underground storage system, it also monitors itself.

Genelco is obviously very proud of SOIL SENTRY. We stand behind its concept and are ready to assist in its implementation and long term service. We stake our good reputation earned over the past thirteen years on the suitability of this product. If we can be of any assistance please do not hessitate to call.

Best regards,
Genelco, Inc.

Michael J. Bouton
President

MJB/ec

cc Reinhard Hanselka
Advanced Industrial Designs

Chuck Rowley

116 HS

Santa Clara County Fire Chiefs' Association

A Chapter Of California Fire Chiefs' Association

HAZARDOUS MATERIALS SUB COMMITTEE

October 19, 1984

Mr. Edward C. Anton, Chief
Division of Technical Service
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Dear Mr. Anton:

The following are comments to the draft regulations on Underground Tanks dated August 13, 1984. These comments reflect the concerns of the Santa Clara Fire Chiefs Association Hazardous Materials Sub Committee (the members of which are listed at the end of this letter).

General Comments

1. Referencing the City of San Jose's comments dated August 30, 1984, we concur and reiterate all of the comments expressed. A copy is attached.

2. Local jurisdictions who have adopted ordinances prior to January 1, 1984 are exempt from the Board's regulations. In Section 2611(a)(1) regulations incorrectly state that these jurisdictions must meet the requirements of Article 3 and Article 4 of the Board's requirements. (Mountain View does not share this view).

3. We feel that some of the objectives of the Board's regulations are incorrectly interpreted with respect to Health and Safety Code 25286-25288. As example:

   i. The objective of detecting past histories of leaks is not specifically stated in AB 1362.

   ii. The objective of conducting a statewide ground water quality survey is not a stated objective of AB 1362. The intent is to ensure equipment integrity rather than a ground water survey.

4. The construction and monitoring standards described in the regulations require a certain level of technology based on present operating methods. We feel that the regulations should be more performance oriented versus method oriented. Future technological development which may be superior to today's methods would be severly restricted with these standards. More flexibility and exemption/variance language should be added. For example:

   a. **Article 4** - The requirements for additive layers of testing i.e., tank testing, soil testing, vapor monitoring, groundwater monitoring, and groundwater assurance monitoring is too extensive. All of these are not necessary to detect leaking. Options of combining or deleting some leak detection methods should be given instead of requiring all.

Received DTS OCT 25 1984

b. Section 2646 required 3 wells per tank to be installed. The number of wells should be dependent on tank size and geologic factors. Three wells per tank is not necessary to detect a leak.

c. Section 2635(h) requires monitoring on a once per week basis. This is not necessary and prohibitively expensive.

d. Section 2635 cathodic protection is not required for tanks in vaults. Variance language for this should be included. We support your position that wrapped asphalt tanks not be considered "corrosion resistant."

Specific Comments

1. **Article 8** – The fees required for a variance applications are extremely expensive and will adversely affect new or different technology development. No precedence has been establish for charging for this service, and it should not be started at this time.

2. Section 2712. Local jurisdictions allow provisional permits to be issued for six months. The regulations allow for a 3 month permit only. This time frame seems too restrictive.

3. Section 2646. Best available technology should be the criteria to use in choosing the most appropriate monitoring system for a facility. There seems to be no data base to support same if the specific methodologies stated, such as the arbitrary selection of 5 feet as the depth below which both vadose and ground water monitoring must be conducted.

4. Section 2671. The time limitation for temporary closure is in conflict with the National Fire Code. The Fire Code allows a 1 year temporary closure limit vs. a 2 year temporary closure limit imposed by the Board regulations.

5. Section 2711. If a local jurisdiction has an established permit form, this form should be sufficient to meet the State's needs. If additional information is needed or different forms are needed, the Board should contact the company directly.

6. Section 2633f (8/23/84 draft). Pressure loss detectors used for pressurized piping systems should meet a performance goal which can be tested on site to insure the detector senses the leak and activates the alarm. We suggest a 1/16 inch diameter "test hole" be placed furthermost from the detector-on the tank to dispenser line system. The test hole would be on a line the same diameter size as those at the specific location and a valve installed on the detector side of the test hole. Turning on the valve would release product through the test hole to an approved container and the detector should detect the leak after "X" volume of product loss. The Board should determine "X" volume.

   If the Board decides to establish a performance goal, which a product may obtain a "listing" from an independent testing agency and not require the on site test, then the device should be tamperproof once installed. The device should be tested at least annually by a third party. All negative tests should be reported to the enforcing jurisdiction.

   If the performance test can not be achieved then double containment for the piping system should be required.

7. Section 2635f. In addition to overflow protection, we feel existing and new underground tank locations should provide "spill protection". Surface spills which may contaminate the aquafer occur when tanker supply piping is improperly disconected from the tank fill pipe. There are many devices on the market which provide secondary containment for petroleum product yet allow surface water to flow through the pipe fill area.

8. We agree with the Board's position on requiring suction piping to be double contained.

9. Section 2643f. A single day's loss of 50 gallons through inventory control may be a little strict for an operator to be required to implement control measures.

10. Definitions. Please define "invert."

11. Please clarify "continuous" as it applies to monitoring. We feel a permanently installed device which monitors once a day meets the intent.

12. Vapor recovery lines should be double contained.

13. We would support any action the Board would take to have tank system testing contractors and third party consultants registered by the State Department of Consumers Affairs.

We appreciate the work put forth in developing the draft guidelines. Thank you for your consideration of these comments in your comment review period.

Sincerely,

Dan Heiser

DAN HEISER,
Chairperson

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Mike St. John, Central

cc: Assemblyman Sher
Assemblyman Cortese
Northern Cal Fire Chiefs' Association
Santa Clara Fire Chiefs' Association

DH:msc

#116

Santa Clara County Fire Chiefs' Association

A Chapter Of California Fire Chiefs' Association

HAZARDOUS MATERIALS SUB COMMITTEE

October 19, 1984

Mr. Edward C. Anton, Chief
Division of Technical Service
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Dear Mr. Anton:

The following are comments to the draft regulations on Underground Tanks dated August 13, 1984. These comments reflect the concerns of the Santa Clara Fire Chiefs Association Hazardous Materials Sub Committee (the members of which are listed at the end of this letter).

General Comments

1. Referencing the City of San Jose's comments dated August 30, 1984, we concur and reiterate all of the comments expressed. A copy is attached.

2. Local jurisdictions who have adopted ordinances prior to January 1, 1984 are exempt from the Board's regulations. In Section 2611(a)(1) regulations incorrectly state that these jurisdictions must meet the requirements of Article 3 and Article 4 of the Board's requirements. (Mountain View does not share this view).

3. We feel that some of the objectives of the Board's regulations are incorrectly interpreted with respect to Health and Safety Code 25286-25288. As example:

   i. The objective of detecting past histories of leaks is not specifically stated in AB 1362.

   ii. The objective of conducting a statewide ground water quality survey is not a stated objective of AB 1362. The intent is to ensure equipment integrity rather than a ground water survey.

4. The construction and monitoring standards described in the regulations require a certain level of technology based on present operating methods. We feel that the regulations should be more performance oriented versus method oriented. Future technological development which may be superior to today's methods would be severly restricted with these standards. More flexibility and exemption/variance language should be added. For example:

   a. **Article 4** - The requirements for additive layers of testing i.e., tank testing, soil testing, vapor monitoring, groundwater monitoring, and groundwater assurance monitoring is too extensive. All of these are not necessary to detect leaking. Options of combining or deleting some leak detection methods should be given instead of requiring all.

b. Section 2646 required 3 wells per tank to be installed. The number of wells should be dependent on tank size and geologic factors. Three wells per tank is not necessary to detect a leak.

c. Section ~~2635(h)~~ 2646(f) and 2645(h) requires monitoring on a once per week basis. This is not necessary and prohibitively expensive.

d. Section 2635 cathodic protection is not required for tanks in vaults. Variance language for this should be included. We support your position that wrapped asphalt tanks not be considered "corrosion resistant."

Specific Comments

1. **Article 8** - The fees required for a variance applications are extremely expensive and will adversely affect new or different technology development. No precedence has been establish for charging for this service, and it should not be started at this time.

2. Section 2712. Local jurisdictions allow provisional permits to be issued for six months. The regulations allow for a 3 month permit only. This time frame seems too restrictive.

3. Section 2646. Best available technology should be the criteria to use in choosing the most appropriate monitoring system for a facility. There seems to be no data base to support same if the specific methodologies stated, such as the arbitrary selection of 5 feet as the depth below which both vadose and ground water monitoring must be conducted.

4. Section 2671. The time limitation for temporary closure is in conflict with the National Fire Code. The Fire Code allows a 1 year temporary closure limit vs. a 2 year temporary closure limit imposed by the Board regulations.

5. Section 2711. If a local jurisdiction has an established permit form, this form should be sufficient to meet the State's needs. If additional information is needed or different forms are needed, the Board should contact the company directly.

6. Section 2633f (8/23/84 draft). Pressure loss detectors used for pressurized piping systems should meet a performance goal which can be tested on site to insure the detector senses the leak and activates the alarm. We suggest a 1/16 inch diameter "test hole" be placed furthermost from the detector-on the tank to dispenser line system. The test hole would be on a line the same diameter size as those at the specific location and a valve installed on the detector side of the test hole. Turning on the valve would release product through the test hole to an approved container and the detector should detect the leak after "X" volume of product loss. The Board should determine "X" volume.

   If the Board decides to establish a performance goal, which a product may obtain a "listing" from an independent testing agency and not require the on site test, then the device should be tamperproof once installed. The device should be tested at least annually by a third party. All negative tests should be reported to the enforcing jurisdiction.

   If the performance test can not be achieved then double containment for the piping system should be required.

7. Section 2635f. In addition to overflow protection, we feel existing and new underground tank locations should provide "spill protection". Surface spills which may contaminate the aquafer occur when tanker supply piping is improperly disconected from the tank fill pipe. There are many devices on the market which provide secondary containment for petroleum product yet allow surface water to flow through the pipe fill area.

8. We agree with the Board's position on requiring suction piping to be double contained.

9. Section 2643f. A single day's loss of 50 gallons through inventory control may be a little strict for an operator to be required to implement control measures.

10. Definitions. Please define "invert."

11. Please clarify "continuous" as it applies to monitoring. We feel a permanently installed device which monitors once a day meets the intent.

12. Vapor recovery lines should be double contained.

13. We would support any action the Board would take to have tank system testing contractors and third party consultants registered by the State Department of Consumers Affairs.

We appreciate the work put forth in developing the draft guidelines. Thank you for your consideration of these comments in your comment review period.

Sincerely,

Dan Heiser

DAN HEISER,
Chairperson

Hazardous Materials Sub Committee Members

Joe Afong, San Jose Fire Department
Jill Cornwell, Santa Clara County Health Department
Wes Gibb, Mountain View Fire Department
Larry Hankinson, Sunnyvale Department of Public Safety
Reinhard Hanselka, Campbell Fire Department
Dan Heiser, Palo Alto Fire Department
Kate Jackson, Milpitas Fire Department
Peter Jones, D. Phil, San Jose Fire Department
Chris Knoblock, Hayward Fire Department
Sharon Kohlmannslehner, Morgan Hill Fire Department
Ilse Kolbus, Gilroy Fire Department
Larry Manette, Santa Clara Fire Department
Mike St. John, Central Fire Department

cc: Assemblyman Sher
Assemblyman Cortese
Northern Cal Fire Chiefs' Association
Santa Clara Fire Chiefs' Association

DH:msc

#116-B

Santa Clara County Fire Chiefs' Association

A Chapter Of California Fire Chiefs' Association

FIRE PREVENTION OFFICERS SECTION

HAZARDOUS MATERIALS SUB-COMMITTEE

November 26, 1984

The following comments are provided by members of the Hazardous Materials Sub-Committee who attended the meeting of November 20, 1984, for response to the Water Quality Control Board Regulations Draft of November 9, 1984.

Members in Attendance:

Peter Jones	San Jose Fire Department
Joseph Afong	San Jose Fire Department
Michael Randolph	San Jose Fire Department
Larry Manette	Santa Clara Fire Department
Reinhard Hanselka	Campbell Fire Department
Ken Walduagel	Central Fire District

We appreciate the impact our comments made on this revised set of draft regulations.

There are several major areas of concern that need to be addressed. In general, we feel that the regulations should be performance oriented not methodology oriented. The regulations should not stifle new technology.

Exprience has demonstrated that inventory reconciliation lacks sufficient credibility to adequately safegaurd the environment. Inventory control has been used for the past 50-years and has failed to prevent major and minor leaks.

Example: Experience at a retail gas station has shown that it may take up to 6-months to detect losses of 500-gallons per month.

Water sampling wells should be used with discretion as a method of monitoring underground tanks. Unless properly constructed and safeguarded they can become conduits of potential contamination to the aquifer they monitor. We strongly recommend that the Santa Clara County guidelines for well installations be followed. These guidelines have been adopted by all cities in Santa Clara County, and are being systematically adopted in adjacent counties.

With regard to small business exemptions, we contend that the present limits far exceed the practical definition of a small business.

Example: A retail gasoline stations annual dollar volume will almost always be less than the small business exemption in the current draft.

We strongly recommend that Section 2641.C 8 be deleted from the regulations.

Finally regarding Section 2633-6 we feel that a leak detector that only provides for a 50% flow reduction upon the detection of a leak is not adequate. We recommend that any leak detector totally restrict the flow of all product.

L.B. Hankinson

L.B. Hankinson, Secretary

/4

#116-C

Santa Clara County Fire Chiefs' Association

A Chapter Of California Fire Chiefs' Association

Hazardous Material Subcommittee

Underground Tank Regulations "Draft" Comments

January 17, 1985

To The S.W.R.C.B.,

The following comments represent those members of the Santa Clara County Fire Chiefs Assoc. Hazardous Materials Subcommittee who fear we eventually will not be exempt from your monitoring regulations.

Specific Comments:

1. 2611(B)(2) -- (a) We do not support the exemption for underground tanks which are granted an interim status permit by DOHS. (b) Clarification -- if the waste tank is under the jurisdiction of the DOHS, who regulates the tanks which service the waste tank (i.e., the sodium hydroxide and sulferic acid tanks)?

2. 2633(G) & 2634 -- (a) We disagree with the exemption for the pressurized piping system not belonging within the leak interception system. (b) If you insist the piping not be included then why are there no provisions mentioned throughout the monitoring sections to test the leak detector? We have always taken the position--testing the detector should be a part of the monitoring plan.

3. 2648(b) -- We could not agree more. The objective of the monitoring program is to detect unauthorized releases "before" ground water is affected. But how did you come up with the listed monitoring options from the above premise? (See below)

4. 2641 Monitoring alternatives.

Santa Clara County and probably most of the Bay area will only be able to use alternatives #1 and #2 for non motor fuels. #1 is extremely expensive with present technologies which leaves alternative #2.

As stated in comment 3 we agree monitoring should detect leaks before they effect the ground water (your objective). Why do you require the excessive number of wells? Wells do **not** detect leaks before the water is affected. We do not support the inclusion of more than one down gradient monitoring well until contamination has been detected by the vadose monitor or groundwater well. We feel under certain conditions -- groundwater wells are not necessary with the proper placement of probes serving a continuous vapor monitoring device.

You also assume the size of the tank presents a higher risk by requiring more monitoring wells. We would agree with you if dip sticking were the method of monitoring (small leaks are more difficult to detect in a large tank). Disagreement -- a vadose zone monitor is not effected by the size of the tank (the number of locations for the monitor may be). If additional safeguards for "high risk" tanks are needed then high risk should

be defined. We have defined a "high risk" tank as "any tank over the age of 17 years, and not cathodically protected, and in a soil with a resistance of 10,000 OHMS or less". If a soil premoted electrolysis and the tank is not cathodically protected -- it is truely a high risk tank.

Motor Fuels

Alternative 5: We do not feel the "allowable measurement error" figures can be achieved by "dip sticking". A permanently installed liquid level detector -- approved device -- should be required. (Note: our membership is not unified in accepting a monitoring system without an external device. We resolve the dispute by limiting internal monitoring for 5 years and requiring the tank test 2 times per year.)

Alternative 6: We approve of this system even for our "high risk" catagory. Again we feel the number of ground water wells is excessive.

Alternative 7: The size tank does play a part in this alternative. We have limited this option to tanks under 1001 gallons. For tanks with minimal thru put ((101 gal/yr) we do not agree with the annual tank test (unless the tank is a "high risk").

We disagree with the "up to 5 day" measurement (7(B)ii). This alternative was developed for emergency fuel generators which are generally tested once a week. A reading should be taken after the test and before the next text the following week. Please take the operator into consideration. The length of time would also increase the accuracy of the dip stick reading.

Alternative 8: We had decided to provide the same exemption only for 2 years. We approve your consideration to provide an incentive for replacement by providing this option.

5. Page 4.18(D) How is suction piping monitored daily?

6. Please change the wording for alternative 6 (F) concerning laboratory analysis shall be required if visual or field analysis are less accurate. Section 2641 (C) is better -- lab verification may be required at periodic intervals.

7. Page 4.35(d) who will "list" or "certify" the test methods?

8. Page 4.44(e) Please develope a "standard" state form for the quarterly report. If you do not then each jurisdiction will be different which is not necessary or wise.

9. Question: If we have a non motor fuel tank greater than 1000 gallons in a non benificial use aquafer less than 100 feet and vapor detection will not work (i.e., motor oil -- waste or virgin). (a) is our only

option alternative #1? (b) can we optain a categorical variance for motor oils?

We feel you have attempted to protect the waters of the State and provide viable options for the motor fuel industry. Please consider our comments for those who have not lobbied effectively. The Stoddard solvents, waste oil tanks, and caustic tanks have been given excessive monitoring standards.

Thank you for taking our comments.

Sincerely,

Dan Heiser
Chairperson

#117

STEPHEN J. KOONCE
COUNTY ENGINEER

HIAM BARMACK
CHIEF DEPUTY

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER-FACILITIES
550 SOUTH VERMONT, LOS ANGELES, CA 90020

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BOARD OF SUPERVISORS
PETER F. SCHABARUM
KENNETH HAHN
EDMUND D. EDELMAN
DEANE DANA
MICHAEL D. ANTONOVICH

October 22, 1984

State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Attention Mr. Harold Singer
Division of Technical Services

Gentlemen:

PROPOSED REGULATIONS GOVERNING
UNDERGROUND STORAGE OF
HAZARDOUS SUBSTANCES

This office has reviewed the proposed regulations to be codified in Subchapter 16, Chapter 3, Title 23, California Administrative Code, and we offer the comments herein. The County of Los Angeles is exempt from most provisions of the proposed regulations by virtue of adoption of Los Angeles County Code, Title 11, Division 4, prior to January 1, 1984, pursuant to Section 25288 of Chapter 6.7 of Division 20 of the Health and Safety Code. The adoption of the County Ordinance was the result of nearly two years of discussion by the Los Angeles County Hazardous Materials Coordinating Committee and the need to begin the budgetary, staffing, and administrative processes in a jurisdiction as large as Los Angeles County. To this end, the County Engineer published guidelines for the Underground Storage of Hazardous Materials earlier this month, copies of which were forwarded earlier to your office.

It is, however, our desire to work toward uniform regulations and procedures since some of the 75 cities in Los Angeles County that did not adopt their own ordinances prior to January 1, 1984, may wish to establish a program in the future.

Our comments are intended to deal with general areas where there is a major difference with the Los Angeles County program and are given by section number as they appear in the draft regulations:

2611 (a), (1), and (A)--These sections are inconsistent with Health and Safety Code (H & SC) 25288 in that the only requirement for exemption by a local ordinance adopted prior to January 1, 1984, is continuous compliance with H & SC 25284 and 25284.1, not regulations adopted under those sections.

2620-Definitions--We suggest the following definition be added: "Groundwater"--The first producible aquifer beneath an underground storage tank regardless of beneficial uses, if any.

In the definition of "new underground tank" and other places in the draft regulations, the term ...city and county... is used with regard to adoption of ordinances. It is not normal for cities and counties to adopt joint ordinances and it is further not possible for any city in Los Angeles County to adopt the County Ordinance by reference since they cannot adopt such an ordinance pursuant to H & SC 25288.1. We suggest this term be dropped and only county <u>or</u> city be used.

"Substantially beneath the surface of the ground". The regulations are very restricted in some ways particularly with regard to visual monitoring. Yet by this definition, many tanks with a significant potential for groundwater contamination are excluded. We suggest that the tanks regulated be those that "are constructed in such a manner that an unauthorized discharge may pass unobserved and unimpeded to the ground subsurface".

2632 (e) and (f)--These sections are overly restrictive to certain specific devices and would not allow the use of a system that monitors a fluid in the interstitial space of a double-walled tank as has been proposed by one major manufacturer. Monitoring of pressure or vaccuum in double-walled tanks should be permitted only if the tank has been certified for such service by UL or other nationally recognized testing authority.

2633 (e)--These requirements place an unreasonable burden on the local agency to "second guess" the ability of a less-than-full secondary containment system and response plan to accomplish the desired groundwater protection. The system should meet the volume requirements of 2631 (d), (e), and (f) even if "open topped".

2633 (f)--The monitoring devices proposed, while present systems show promise, have not been proven in actual use to an acceptable degree of reliability. Presently available mechanical flow restriction devices are able to accomplish a flow reduction much greater than 50 percent.

2635 (b) (3)--The only tank tests available in Article 4 are the precision hydrostatic tests which must be performed on tanks full of product or other fluid. These tests cannot be performed on exposed tanks or piping prior to backfill. Present fire codes require a low pressure air test of exposed tanks which when accompanied by soap testing of the exterior joints should establish the integrity of new installations.

2635 (c) (2)--As built plans are important but of even greater importance is the submittal of an engineered proposal prior to construction for approval by the local agency so that all the devices and construction features called for in the regulations are provided.

2640 (a) and (g)--These sections are included in comments on Section 2647.

2641 Visual monitoring is only a viable option on a very small percentage of existing tanks and in spite of H & SC 25284.1, may not be the best or most practical method. It is felt that the "exemption" procedure provided is unnecessary and that visual monitoring merely be a monitoring option where the conditions of 2641 (c) (1) can be met.

2641 (d)--If liquid is observed, it is an unauthorized release and should be dealt with in accordance with Article 5. Laboratory testing would seem unnecessary.

2642 (b) (2)--Since existing tanks must be periodically tested, it is not unreasonable to require the owner to make whatever excavations are necessary and to retrofit facilities to allow additional future testing.

2642 (c)--The tests specified are not appropriate for tanks designed to be buried prior to backfilling. Section 2635 (b) (3) above.

2643 (b)--Metering techniques are not particularly successful for waste materials such as drain oil.

2643 (d) (3)--The requirement of owners or management personnel to take quantity measurements is unenforceable.

2644 (c)--The term "close as possible" is not consistent with the requirement to slant drill the intersect a point 50 feet below the invert of the tank. The procedures do not provide for multi-tank installations. It would seem desireable to get as close as possible to the tank invert, not an arbitrary 50 feet. Slant drilling significantly increases the risk of tank puncture.

2644 (e)--The soil sampling proposed is excessive for a leak detection program where only the presence of the suspected substances need be detected. Should it be found, then a precise site assessment investigation will be required. Tank owners should be allowed the option of compositing samples within a given boring for the purpose of leak detection.

2644 (3) (4)--Logging of boring should be allowed under the supervision of a registered civil engineer or registered geologist.

2645 (f)--Introduction of a tracer or other substance into a site may contaminate the site and prevent vapor monitoring. Vapors within the soil move by diffusion in the direction of a concentration gradient. The lack of vapor concentration in an atmospheric vadose monitoring well will cause mitigation toward the well.

2646 (a) (b)--No limit is specified as to how far we must go to find groundwater. We suggest groundwater monitoring, as used in this section, be limited to those situations where the historic high groundwater is 40 feet below the surface or less.

2646 (e)--The proposed well location requirements are difficult to apply. Since tanks in plan view are rectangular as are most tank clusters, the use of a circular locating scheme seems inappropriate.

2646 (f)--The monitoring requirement seems excessive and costly. It is doubted that enough laboratory capacity exists within the State to satisfy this requirement. Section 2648 does not specify analysis methods. Further, these regulations only require that records of this sampling effort be kept by the permittee for three years, not that it be reported anywhere.

2647 The requirement for assurance groundwater monitoring seems to be based on the lack of confidence in monitoring methods required by the rest of the regulations. The concept seems dangerous to the protection of usable groundwaters in that there are no provisions to protect aquifers that are beneath an aquiclude. Further, this program would generate complex groundwater basin data which most local agencies are not equipped or qualified to analyze, particularly if their jurisdiction does not cover the entire groundwater basin.

Article 10 does not require this data to be reported anyway, only to be maintained by the tank owner for at least three years. It is not reasonable that an inspector is going to be able to analyze a mass of data at each tank site on his tri-annual inspection.

A positive test result in an assurance well for a facility located in a heavy industrial area does not mean the owner has a leak unless the stored material is very unique. These tests would be meaningless in areas where groundwater contamination has already been established.

The vast number of wells that would result from this section presents a very real problem of security of the well and accidental or deliberate contamination of groundwater through these wells. The level of inspection mandated by H & SC 25283:4 is not sufficient to provide well security nor is it mandated.

While a facility owner should not be excluded from including an assurance well as a part of an approved monitoring program, it should be permitted under carefully controlled conditions. Area-wide groundwater monitoring programs should be performed under the authority of regional agencies such as the Regional Boards that have qualified staff to analyze the data.

2711 and 2713--Because of the large number of facilities that will fall under the jurisdiction of this office, and the need for additional information required by the County Code, it is our intent to transmit all application data and reports required by these sections by electronic means or magnetic tape in a format approved by the State Board. The regulations should provide for this option.

Thank you for the opportunity to comment on the draft regulations. Please contact Mr. Carl Sjoberg at (213) 738-2527 if you have any questions on the above.

Very truly yours,

STEPHEN J. KOONCE
County Engineer

David Yamahara

for Kenneth R. Kvammen
Assistant Deputy County Engineer
Sanitation Division

KRK:CWS:npk 41

#117

County of Los Angeles
Underground Storage of Hazardous Materials Guidelines

Errata - October 22, 1984

1) Chapter II, Section G.3.b. is changed to:

b. Suction Delivery and Gravity Flow Systems

Suction delivery and gravity flow piping systems may be exempted from secondary containment requirements provided the following conditions are met:

2) Chapter III, Sections C.9.b and c. are changed as follows:

The units of gal/hr referred to in Sections b. and c. are changed to gal/min.

3) Chapter VI, Section A.6.a. is changed to:

a. All tanks proposed for closure in place shall comply with Appendix E, Parts B or C.

4) Chapter VI, Section A.6.c. is changed to:

c. A determination of site integrity shall comply with Chapter III, Section B.4.b.

5) Chapter VI, Section A.7 is retitled as follows:

7. Permanent Closure of Tanks by Removal (Motor Vehicle Fuels, Fuel Oils and Waste Oil)

6) Chapter VI, Section A.7.a. is changed to:

a. All tank removals shall be carried out as indicated in Appendix E, Parts D-F.

7) Chapter VI, Section A.7.f. is added:

f. To make a more exact determination of the site integrity, the County Engineer may require soil sampling and analysis to be carried out pursuant to Chapter III, Section B.4.b.

8) Chapter VI, Section A.8 is added:

8. Permanent Closure of Tanks by Removal (Non-Motor Vehicle Fuel, Fuel Oil and Waste Oil)

In addition to the requirements of Section A.7, tanks regulated under this Section shall be subject to the soil sampling and analysis requirements of Chapter III, Section B.4.b.

9) Appendix C and E shall be superseded with the enclosed Inspection Guides dated January 1, 1983.

LOS ANGELES COUNTY FIRE DEPARTMENT

FIRE PREVENTION

INSPECTION GUIDE #6 January 1, 1983

FLAMMABLE LIQUID UNDERGROUND INSTALLATIONS

The following regulations are Department policy and extracts from the Fire Code. Requests for inspections shall be made 48 hours in advance.

Prior to issuing a permit for underground tanks, the Department of County Engineer, 550 S. Vermont, Los Angeles, (213) 738-2463, must be contacted for approval.

TANKS

New: Shall be constructed according to Section 15.213 or bear the label of the Underwriters Laboratory, the ASME Code stamp, or the API monogram.

Used: Will be permitted if they comply with the above and the following:

A. Must be inspected and approved for installation by a Fire Prevention Division inspector from this Department. Only tanks to be installed within the area served by this Department shall be inspected. All inspections shall be conducted within the County of Los Angeles. Tank approval shall be valid for a period of 90 days.

B. Tank shall be identified by:

- name of manufacturer
- date of manufacture
- capacity
- gauge of shell
- Underwriters Laboratory number
- L.A. Fire Department number, if available

C. Tank must be sufficiently cleaned to enable the inspector to examine all portions of the outer shell. At the discretion of the inspector, sand-blasting may be required. All equipment necessary to perform any and all phases of the tests shall be supplied by the installer.

D. Pits and corrosion shall not exceed 10% depth of the original shell thickness. Pitted areas may be built up by welding to return shell to the original thickness. If more than 10% of the surface area of the tank requires welding, the tank shall be deemed unfit for installation.

E. Prior to excavation, transportation, or welding, tank shall have dump tube removed and then shall be purged of flammable vapors. NFPA No. 327 "Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers" provides information on safe procedures for such operations.

NOTE: INSERT THIS INSPECTION GUIDE IN FIRE PREVENTION MANUAL. DESTROY PREVIOUS INSPECTION GUIDE NO. 6 DATED MARCH 21, 1978.

F. Tank must have a five-pound pressure test for 30 minutes to be witnessed by an inspector, at which time tank seams, welds, and pitted and corroded areas shall be wetted with a soap and water solution. The tank shall be rotated to allow examination of the entire tank. The tanks shall then be depressurized and the gauge shall return to 0 pounds.

G. The tank must be retarred, reasphalted, or otherwise properly coated or be protected by a properly installed and maintained cathodic protection system.

TANK LOCATION

For Class I liquids, Section 15.210(a)

a. Must be one foot from the nearest wall of any basement, pit, or cellar.

b. Must be three feet from any property line that may be built upon.

c. Must be one foot from any other tank.

d. Must be far enough away from any building foundation or support that the building load will not be transmitted to the tank.

NOTE: The Building Code requires a permit and plot plan for an underground tank. Apply through the Building and Safety Department.

For Class II and III Liquids

Requirements are the same as above except they may not be closer than one foot from a property line that may be built upon.

TANK COVER

a. Must have a minimum of two feet of earth or one foot of earth and four inches of reinforced concrete. Section 15.210(b).

b. Must be backfilled with soft earth, sand or gravel well tamped in place. Section 15.210(b).

c. Where subject to traffic must have a minimum of three feet of earth or 18 inches of earth and six inches of reinforced concrete or eight inches of asphaltic concrete. Where asphaltic or reinforced concrete paving is used, it shall extend at least one foot beyond the outlines of the tank in all directions. Section 15.210(b).

d. Tank may be covered to two-thirds height of tank to secure it in place prior to inspection of depth of bury.

PIPING

a. Shall be of steel, approved plastic, approved fiberglass, galvanized iron of standard weight, copper tubing, or of a material suitable to the product being used. Section 15.301.

b. Couplings may be of the screw thread type, welded joints, or flanged styles. Copper tubing may be soldered. All flanged couplings must remain exposed for inspection at all times.

c. Shall be at least 12 inches below the finished grade of surface material.

d. Before being covered or placed in use, tanks and piping connected to underground tanks shall be tested for tightness. No portion of the system shall be covered until it has been approved. Section 15.216.

The pipe system between the pump and dispenser, but not including the pump, tank, or dispenser, shall be tested as follows:

Both pressure and suction systems shall be pneumatically tested for 30 minutes to 150% of the shutoff pressure of the pump or 75 pounds per square inch gauge, whichever is greater. Joints and connections shall not be wrapped or coated during test and shall be wetted with a soap and water solution while under pressure.

SYSTEMS DEFINED

a. Pressure System: Generally a system that utilizes a turbine pump submerged within the underground tank. The turbine delivers product to the dispenser under pressure.

b. Suction System: Generally a system that utilizes a pump that is above ground, at or within the dispenser delivering product to the dispenser by means of suction.

VENT PIPES

a. The outlet shall not discharge into any building openings or be trapped under eaves or other obstructions. Section 15.215(a-1).

b. Shall discharge either horizontally or vertically (not downward). Section 15.215(a-1).

c. Must be a minimum of one-one-fourth inches inside diameter. Section 15.215(a-3).

d. Shall drain toward tank. Section 15.215(a-4).

e. Shall be equipped with an approved swing joint at the tank and at the base of the discharge outlet. Section 15.215(a-5).

f. Must terminate at least 12 feet above the ground. Section 15.215(a-1).

FILL PIPES

a. Must not be over four inches inside diameter except under special permit. Section 15.215(c).

b. For Class I, II, and III liquids, must be outside of any building and not less than five feet from any door or cellar opening. Section 15.215(c).

SUCTION OR PRESSURE LINES

b. Must have a swing joint at the tank and at the base of any dispenser. Section 15.305.

c. A 90 degree flanged coupling will be permitted at the base of a dispenser provided the line is laid horizontally.

RETURN LINES

Must drain toward the tank.

SWING JOINTS

An approved swing joint will consist of one of the following:

a. Extractor-type foot valve housing with either a street elbow or a nipple and an elbow.

b. An elbow and a street elbow.

c. Two elbows and a nipple not over six inches long.

PIPE JOINT COMPOUND

All threaded joints or connections shall be made up tight with the use of an approved pipe joint sealing compound. Section 15.305.

NOTE: Due to structural weakness, a "close" nipple should not be permitted. A "close" nipple is one that has less than 3/8-inch unthreaded piping between threaded ends.

UNION

Unions are not required except at the base of a dispenser. A flanged coupling may be used at this point.

WASTE OIL LINES

Draining lines terminating inside a building shall have a suitable trap or check valve. Section 15.708(b).

DISPENSER LOCATIONS

Must be ten feet from property lines and so located that all parts of a vehicle being serviced will be on private property. Section 15.704(c).

CORROSION PROTECTION

Corrosion protection for the tank and its piping shall be provided by one or more of the following methods. Section 15.214.

a. Use of protective coatings.

b. Use of cold-applied, pipe-wrapping tape with a 50% overlap, spiral wrap to 40 mil thickness.

c. Cathodic protection.

d. Corrosion-resistant materials of construction, i.e., approved fiberglass, galvanized pipe, except threaded fitting shall be coated or wrapped.

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LOS ANGELES COUNTY FIRE DEPARTMENT

FIRE PREVENTION

SUPPLEMENT #A - INSPECTION GUIDE #6 January 1, 1983

ABANDONMENT OR REMOVAL OF UNDERGROUND TANKS

The following procedures shall be complied with when underground tanks are removed, abandoned or temporarily taken out of service.

Prior to the abandonment or removal of any underground tank, the Department of County Engineer, 550 S. Vermont, Los Angeles, (213) 738-2463, must be contacted for approval.

Whenever any tank is taken out of service or shall not have been used for a period of ninety (90) days, such tanks shall be properly safeguarded. All tanks shall be abandoned or removed after one year.

A. Tanks Temporarily Out of Service

1. Cap the fill line, gauge opening and pump suction; secure against tampering.

2. Leave the vent line open.

3. Tank may be placed "temporarily out of service" only when it is planned that it will be returned to active service at that location or pending removal within one year.

B. Abandoning Underground Tanks in Place

1. Remove all flammable or combustible liquid from the tank and from all connecting lines.

2. Disconnect the suction, inlet, gauge and vent lines.

3. Fill the tank and any remaining stubs completely with an approved non-shrinking inert solid material and cap all tank inlets and outlets.

C. Abandoning Underground Tanks in Place (Sand pumping method)

1. Remove all flammable or combustible liquid from the tank and from all connecting lines.

2. Cut off vent lines approximately three feet above grade. (This establishes an increased head on sand being pumped into the tank, insuring complete filling of tank). Do not use cutting torch.

3. Disconnect and cap off extraction (suction) lines at dispenser.

4. Make liquid tight threaded connections between fill lines of tank and the discharge line from sand pump. On tanks equipped with fill pipes extending below tank top, it is necessary to remove the extension piping within tank.

5. Attach a drain hose to end of vent line, by means of a tight or threaded connection, and direct it into a reservoir (55 gallon drum may be used) to hold any residual flammable liquids which might be left in tank.

6. Proceed to pump sand into tank until dense suspension of sand in water discharges from vent lines. (At this point caps may be removed from extraction lines for observation.) Sand should be present here before pumping is stopped.

7. Caution should be observed in the area of the vent lines due to emission of flammable vapors. If necessary conduct vapors to a more remote or less hazardous area.

8. An inspector should be present to witness completion of abandonment. Call (213) 267-2461 for inspection appointment at least 24 hours in advance of proposed completion.

D. Removal of Underground Tanks

1. Remove all flammable or combustible liquids from tank and from connecting lines.

2. Disconnect the suction, inlet, gauge, and vent lines; remove sections of connecting lines which are not to be used further and cap or plug inlets, outlets and leaks, if any.

E. The Chief shall be notified at least 24 hours prior to the removal or abandonment of any underground tank.

F. Disposal of Tanks

Tanks to be disposed of as junk shall be rendered free of flammable vapors. No cutting torch or other flame or spark producing equipment shall be used until the tank has been completely purged or otherwise rendered safe.

Note: NFPA No. 327, "Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers" provides information on safe procedures for such operations.

G. Re-Use of Underground Tanks

Used tanks shall not be reinstalled until they are made to substantially comply with Article 15, Division 2 of the Fire Code. Refer to Inspection Guide #6 for used tank testing information.

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#117

UNDERGROUND STORAGE OF HAZARDOUS MATERIALS

GUIDELINES

OCTOBER 1984

County of Los Angeles
Department of County Engineer-Facilities
Sanitation Division

GUIDELINES FOR THE UNDERGROUND STORAGE OF HAZARDOUS MATERIALS

COUNTY OF LOS ANGELES

DEPARTMENT OF COUNTY ENGINEER-FACILITIES

SANITATION DIVISION

OCTOBER 1984

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CHAPTER I

GENERAL PROVISIONS

A. APPLICABILITY

1. These guidelines shall be considered minimum performance standards for the purposes of Title 11, Div 4 of the Los Angeles County Code, included as Appendix A.

2. The County Engineer has established these guidelines pursuant to Title 11, Div 4, Section 11.88.020 of the Los Angeles County Code, and serve as an interpretation of Div 4.

3. The County Engineer may revise these guidelines from time to time as necessary to accomplish the purpose of Division 4 and to comply with the requirements of other laws and ordinances.

4. These guidelines are not intended to preclude alternative designs or technological advances; however, proposals that deviate significantly will be evaluated by the County Engineer to determine if the purposes of Title 11, Div 4 are served.

5. These guidelines are applicable to all facilities located in the unincorporated territory of the County of Los Angeles and may be applied in cities that have not established a local program pursuant to Section 25282 of the California Health and Safety Code and so notified the County Engineer. The current status of local programs is indicated in Appendix B.

6. These guidelines do not supersede any applicable local regulations not included herein.

B. FACILITIES REGULATED

For the purposes of these guidelines, an underground storage facility regulated under these guidelines shall be any tank or combination of tanks that:

1. Are constructed in such a manner that an unauthorized discharge may pass unobserved and unimpeded to the ground subsurface and,

2. At any time stores a liquid material at standard temperature and pressure that is defined as hazardous per Los Angeles County Code, Title 11, Section 11.74.010 or stores liquid waste material that must be manifested pursuant to Title 22, California Administrative Code when transported to a legal disposal point.

3. Facilities that fall under 1 and 2 above that are required to have an Industrial Waste Disposal Permit pursuant to Title 20, Division 2 of the Los Angeles

County Code, an Industrial Wastewater Discharge Permit pursuant to the Wastewater Ordinance of the Sanitation Districts of Los Angeles County, or an industrial waste disposal permit from any other sewering agency as part of an industrial waste pretreatment system may be exempt from the permitting requirements of Title 11, Div 4 if the industrial waste disposal permit contains conditions and limitations that reflect compliance with these guidelines.

4. Facilities that will not be regulated by these guidelines include final interceptors in industrial waste pretreatment systems, catch basins, refinery pipelines transporting between process vessels, interstate and intrastate pipelines, lagoons, storm drains, oil field gathering lines, well cellars, above ground storage tank spill containment, unlined pits or sumps, and piping not directly associated with a permitted facility.

4. PERMITS

1. Owners or operators of facilities used for the underground storage of hazardous materials located within the unincorporated territory of Los Angeles County or within a city without a local program, shall apply for a Hazardous Materials Underground Storage Permit (HMUSP) from the Los Angeles County Department of County Engineer-Facilities as provided for in Chapter VII of these guidelines. Such a permit will be issued only after all applicable requirements of the County Engineer have been met, and any approvals for construction or operation required by other agencies have been obtained.

2. A HMUSP issued for a facility may be either provisional or operational and shall include conditions and limitations applicable to that facility. Such conditions and limitations shall include but are not limited to:

   a. Monitoring requirements.

   b. Testing frequency and requirements.

   c. Annual reporting.

   d. Storage and capacity requirements.

   e. Inspections required by permittee.

3. Provisional permits, valid for six months, will initially be issued for existing facilities that are providing safe underground storage. Once a provisional permit has been issued for a facility, the owners/operators shall have six months to bring the

facility within full compliance with Los Angeles County Code, Section 11.74.040.

4. The combined provisional and operational permits for the underground storage of hazardous materials shall be valid for a maximum period of (5) years from the date of first issuance. However, if the County Engineer finds that the life expectancy of a facility is less than 5 years, the County Engineer may adjust the term of the permit to reflect such a condition, or require further testing.

5. Failure to adhere to all applicable conditions and limitations of a permit shall constitute a willful violation of Title 11, Div 4, of the Los Angeles County Code and may result in civil or criminal penalties, revocation of a permit, or both.

D. MONITORING OF FACILITIES

1. Facilities operated under a HMUSP shall be continuously monitored as stated in the conditions and limitations of the permit. The type and frequency of monitoring shall be compatible with the facility, and shall be based on:

   a. Hazard potential of the stored contents.

   b. Type of monitoring system and/or devices.

   c. Degree of secondary containment provided.

   d. Local geology and geohydrology.

2. Monitoring records shall be maintained by the permittee and made available for inspection for a period of time not less than three (3) years from the date of the required annual report for the year during which the tests were performed.

E. TESTING OF FACILITIES

1. Integrity tests shall be performed on all devices or components of storage facilities at time intervals and in a manner prescribed by the County Engineer and included within the conditions and limitations of the permit.

2. Such testing applies, but is not limited to, tanks, associated piping, leak detection devices, monitoring and overfill prevention devices.

3. Tests shall be carried out by personnel trained or licensed by the proper testing representatives as appropriate.

4. Testing methods and the administering personnel may be subject to the approval of the County Engineer.

F. ANNUAL REPORTING

1. A report shall be submitted at least annually to the County Engineer by a date specified in the permit conditions and limitations. Information to be contained within the report shall include, but is not necessarily limited to:

   a. Any changes in the type of hazardous materials stored within the facility.

   b. Any changes in the uses of the underground facility.

   c. Changes or modifications to monitoring procedure.

   d. A detailed account of any unauthorized discharges, and the remedial measures employed.

   e. Any modifications to the facility except for routine required maintenance.

2. In the event there has been no change of operation or unauthorized release, a negative declaration to that effect may be submitted.

3. The report or negative declaration shall be certified by the permittee or an authorized representative who is responsible for operations at the facility

4. This report is required by local agencies to satisfy Section 25286(c) of the State of California Health and Safety Code. A report form will be made available to owners and operators to comply with this requirement.

G. UNAUTHORIZED RELEASE

1. Any owner or operator that has knowledge of a confirmed unauthorized release shall immediately notify the County Engineer.

2. Within the jurisdiction of the Los Angeles County Fire Department, shown in Appendix B, an unauthorized release shall also be reported to the Los Angeles County Forester and Fire Warden, Fire Prevention and Conservation Bureau.

3. A confirmed unauthorized release shall be the known escape of a stored material from a primary container to a secondary container or the environment.

4. The owner or operator shall supply information to the County Engineer indicating how the unauthorized release is to be contained and disposed of.

5. The County Engineer shall assume the responsibility of notifying other interested agencies.

6. If an unauthorized release has entered or has the potential to enter usable groundwater, the County Engineer shall immediately notify the appropriate California Regional Water Quality Control Board and may request the Regional Board to assume lead agency status for the investigation of the release.

7. If an inventory balance or any other monitoring technique indicates a loss of hazardous materials, the owner or operator shall have 10 days to perform tests necessary to determine the accuracy of such an indication.

8. If an unauthorized release is confirmed the owner or operator shall proceed in accordance with Section G.1 of this Chapter.

9. If an unauthorized release is not confirmed, an entry into the monitoring records shall be made explaining the occurrence.

CHAPTER II

NEW FACILITY REQUIREMENTS

A. PERMIT APPLICATION REQUIREMENTS

Owners or operators of new facilities proposed for the underground storage of hazardous materials shall apply for an operational Hazardous Materials Underground Storage Permit (HMUSP) prior to initiating construction. Instructions for obtaining a HMUSP are contained within Chapter VII of these guidelines.

B. UNDERGROUND STORAGE REQUIREMENTS

1. Construction Standards

a. All tanks designed for the underground storage of hazardous materials shall carry an approval of design standards from Underwriters Laboratories (UL) or other recognized national testing organizations.

b. All steel tanks proposed for the storage of flammable or combustible materials shall be installed in accordance with all applicable standards contained in the National Fire Protection Association (NFPA) 30, Flammable and Combustible Liquids Code.

c. All fiberglass reinforced plastic tanks proposed for the storage of hazardous materials shall be installed in strict accordance with the manufacturers recommended installation procedures and UL Standard 1316, Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, and tested for compatibility in accordance with applicable sections of ASTM D4021-81.

d. All tanks proposed for the underground storage of flammable liquids in the unincorporated territory of Los Angeles County shall be installed in accordance with the Los Angeles County Fire Department Inspection Guide No. 6, Flammable Liquid Underground Installations included as Appendix C of these guidelines.

2. Secondary Containment Standards

a. All underground storage tanks proposed for the storage of hazardous materials to be installed on or after the effective date of these guidelines shall provide for secondary containment and monitoring. The type of secondary containment proposed shall be approved by the County Engineer and shall depend on:

1) Potential magnitude of an unauthorized release.

2) Ability to detect and recover an unauthorized release.

3) Local geology and geohydrology.

4) Hazard potential of stored contents.

5) Location of storage facility within the site.

b. For all single tank installations, the secondary containment shall be large enough to contain 100% of the volume of the primary containment.

c. Multiple primary containments within a common secondary containment shall be provided with secondary containment large enough to contain 150% of the volume of the largest primary containment or 10% of the aggregate internal volume of all primary containments, whichever greater.

d. If the secondary containment is subject to rainfall intrusion, then the additional required volume shall be that of a twenty-four (24) hour rainfall as determined by a one-hundred (100) year storm history.

e. All secondary containment shall be constructed of materials of sufficient thickness, density and composition so as not to be structurally weakened as the result of contact with any discharged hazardous materials and shall be capable of containing the materials discharged for a period of time equal to or longer than the maximum anticipated time needed to recover the discharged hazardous material.

C. SECONDARY CONTAINMENT REQUIREMENTS

1. Vaulted Tanks

a. Vaulting may be used for secondary containment where the proposed monitoring consists of visual inspection and the use of a vault is not in conflict with other laws and ordinances.

b. The vault must be sufficient in volume to enable visual inspection of the tank(s) on all sides, including the bottom. The frequency of inspection shall be stated in the HMUSP.

c. If the stored material is incompatible with the vault interior, a coating or lining shall be

required for the vault to protect it from chemical attack.

d. Chemical compatibility between the coating or lining and the stored product must be documented and included in the construction proposal.

e. If flammable or combustible materials are to be stored within this type of proposed facility, provisions must be made for the control of vapors.

f. All applicable Fire Prevention regulations shall be addressed.

2. Double-Walled Tanks

a. All double-walled tanks proposed for the underground storage of hazardous materials shall be approved by UL or other nationally recognized testing organizations for such underground storage.

b. The design of double-walled tanks shall allow for monitoring of the annular space.

c. Monitoring methods may include leak detection due to a loss of pressure or vacuum within a pressurized annular space, where such a practice is authorized by the testing organization, or monitoring based on the properities of the stored contents, such as conductivity, thermal conductivity or other detectable properties.

d. The tank shall be so designed and installed such that product losses from the primary containment drain to a central location within the annular space, to be detected by a monitoring device or method.

e. Any devices not inherent within the initial tank design to be used within the storage system shall bear an approval from a nationally recognized testing organization, or a demonstration of such integrity will be required by County Engineer. This requirement applies to, but is not limited to, special accessories, fittings, coatings or linings, monitoring systems, level controls or other devices.

3. Synthetic Membrane Liners

The use of synthetic membrane liners for secondary containment may be approved provided the following conditions are met:

a. Complete compatibility between the liner and stored product must be demonstrated to the satisfaction of the County Engineer.

b. Acceptable documentation to determine liner integrity and compatibility with product shall consist of laboratory testing results performed by the liner manufacturer or a qualified testing laboratory. All testing must be carried out in accordance with the American Society for Testing Materials (ASTM) or Federal Standard Methods procedures as appropriate.

c. As a minimum, the type of tests to be performed shall be:

Test	Testing Method
Permeability	ASTM D-814
Chemical Resistance	---------
Tear Strength	Method 5134 Fed Std 191a
Breaking Strength	ASTM D-751
Puncture Resistance	Method 5120 Fed Std 191a
Water Absorption	ASTM D-471 (7 days)
Seam Tensile Strength	ASTM D-751

d. The contractor must possess the expertise necessary to install a liner system. Contractors lacking direct experience shall provide documentation that formal training has been provided by the manufacturer of the liner system or his authorized representative, or another contractor with direct experience.

e. In areas where the depth of groundwater falls within the confines of the excavation a liner system shall be operated as a wet hole.

f. In areas where groundwater is below the low point of excavation, the approval of a wet hole system shall be at the discretion of the County Engineer.

g. Wet hole liner systems shall be provided with a means of monitoring water added to or removed from within the secondary containment and shall provide an approved means of disposal for all excess wastewater.

h. The excavation base and walls shall be prepared to the liner manufacturers specifications and shall be firm, smooth and free of any sharp objects or protrusions.

i. All liner systems shall have the excavation base sloped to a central location enabling all unauthorized releases to be directed toward a monitoring well.

j. Written quality control measures shall be developed to insure that the system is installed per specifications and shall be available at the job site at all times during the liner and tank installation.

k. Field fabrication of a liner system will not be permitted unless the manufacturer has tested and certified all proposed procedures and has obtained approval from the County Engineer.

l. The tank and the piping shall be considered separate systems, and each shall require independent secondary containment and monitoring.

m. Testing of the liner after installation will be required to establish system integrity.

D. CORROSION PROTECTION

1. All underground hazardous material storage tanks, piping and other appurtenances shall be protected against corrosion. The amount of corrosion protection required shall depend upon the soil type, resistivity, moisture content, and pH. All corrosion protection systems shall comply with either Section 2 or 3 below.

2. Cathodic Protection System

The minimum requirements for a cathodic protection system shall consist of the following:

a. Cathodic protection using sacrificial galvanic anodes or impressed current.

b. An exterior epoxy coating.

c. Electrical isolation of the tank from the piping system using nylon bushings and flanges or insulation kits at all piping connections.

d. A monitoring plan or maintenance schedule to ensure the effectiveness of the cathodic protection system.

3. Corrosion resistant materials of construction such as fiberglass, fiberglass reinforced plastic, and fiberglass reinforced plastic materials-composite may be used in place of a cathodic protection system.

4. A -0.85 volt potential, tank to soil, as measured by a $Cu-CuSO_4$ half cell shall be required to ensure continued cathodic protection.

5. All proposed methods of corrosion protection shall be designed by a registered corrosion engineer to be approved by the County Engineer.

E. OVERFILL PROTECTION

1. General Provisions

a. The County Engineer shall require an appropriate overfill prevention system unless it can be demonstrated that an equivalent degree of protection exists within the proposed underground storage facility.

b. Primary filling operations which are only visually monitored do not satisfy the requirements of this section unless:

1) The operator is continuously present and is in control during all filling operations.

2) Visual observation can be made without causing an actual unauthorized discharge.

3) Delivery is accomplished by gravity flow with a head of not more than 4 feet above the fill pipe.

4) The means of visual observation shall allow termination of flow prior to intrusion of stored material into any vent or delivery pipe unless such piping is fitted with secondary containment.

c. Appropriate overfill protection shall provide a mean(s) to prevent continual spillage occurring as a direct result of filling operations.

2. Required Overfill Prevention Systems/Devices

a. Sections E.2.b and c of this Chapter shall be considered the minimum requirements for the overfill protection of underground storage systems.

b. A float vent valve shall be installed for all storage systems utilizing Phase II vapor recovery as required by the California Air Resources Board (CARB). The following requirements also apply:

1) The working diameter of the float vent valve shall be the same as that of the Phase II vapor recovery piping.

2) If the vent piping is isolated from the Phase II vapor recovery piping, an additional float vent valve shall be installed for the vent piping.

3) The float vent valve shall be installed into an extractor assembly that provides at grade access.

c. In addition to Section E.2.b above, all underground storage systems regulated under these guidelines shall install either:

1) A product tight fill box as specified in Section E.2.e or,

2) A high level alarm system installed in compliance with Section E.2.f.

d. An exemption from the requirements of Section E.2.c of this Chapter shall be granted for the following conditions:

1) The storage facility stores waste material only;

2) The storage facility shall not store more than 500 gallons;

3) The fill opening is located inside a structure; and,

4) No environmental contact results through an overfill.

e. If a product tight fill box is to be installed, the following standards shall apply:

1) The volume of a fill box to surround a single fill opening shall be limited to 5 gallons.

2) The volume of a fill box to surround a fill opening and a vapor return line shall be limited to 10 gallons.

3) The design of the fill box shall preclude the transmission of any loads to the fill pipe or tank and shall possess flexibility in all directions.

4) Provisions for drainage of spilled product into the primary tank or other approved container shall be included in the design.

5) All materials of construction shall be compatible with the stored product.

6) The fill box shall be designed as to prevent the intrusion of rainwater.

f. If a high level alarm system is to be installed, the following standards shall apply:

1) The alarm shall be audible or visual.

2) If an audible alarm is employed at a facility subject to nighttime deliveries, the system shall possess the ability to be shut down once activated.

3) If a visual alarm is employed, the alarm panel shall be located within visual distance of the filling area.

4) All alarms shall be preset to activate at a high level of not more than 95% of the permitted tank capacity.

3. Optional Overfill Prevention Systems/Devices

Other overfill prevention methods that may be employed upon review by the County Engineer include:

a. Capacitance sensors.

b. Automatic shut-off controls.

c. Tape float guages.

F. MONITORING REQUIREMENTS

1. General Provisions

a. All new facilities for the underground storage of hazardous materials shall at the time of construction be equipped with a continuous monitoring system capable of detecting an unauthorized release of the stored material and shall maintain this capability during the life of the facility.

b. Any monitoring device within an underground storage system shall be compatible with the stored contents and the environment within which the device is situated.

c. Monitoring devices to be operated within a storage system shall carry an approval of design standards from UL or other nationally recognized testing organizations.

d. Monitoring capabilities shall include the ability to detect product leaks from the primary containment and intrusion of groundwater into the secondary containment.

e. Inventory control may be required by the County Engineer as part of a monitoring system where appropriate for the type of material stored and the volume of usage.

f. If the stored product is a motor vehicle fuel, monitoring shall be accomplished by a combination of inventory control <u>and</u> a method of detecting long term slow leakage from the tank system.

g. All electronic monitoring devices used to monitor flammable and combustible materials must be explosion proof, and approved by the state Fire Marshall.

h. Monitoring systems within new facilities that do not provide daily visual inspection shall include an audio and visual alarm operational 24 hours per day.

2. Visual Inspection

a. Visual inspection is only acceptable where tanks are situated in a vaulted area or the escape of product or intrusion of groundwater into the secondary containment is immediately visible in an observation well, collection sump or monitoring port.

b. Facilities must be operational 360 days of the calender year to qualify for a visual monitoring program.

c. Facilities located in isolated or remote areas that are unmanned for periods of time may not use visual inspection solely as a monitoring method.

d. Monitoring shall be performed 360 times a year as a minimum, on a daily basis.

e. Sticking the annular space of a double-walled tank as a visual monitoring method shall not be allowed unless a strike plate or other approved devices used to protect the tank are located directly under the monitoring opening.

f. Visual inspection shall not be used as a monitoring method for piping systems.

3. Inventory Control

a. All retail motor vehicle fuel facilities shall use inventory control as a monitoring technique.

b. Tanks located within facilities not included in 3.a above that receive deliveries or dispense product at an amount equal or greater than 1,000 gallons per week shall require inventory control in accordance with this section.

c. An inventory control program shall include the following minimum information:

1) A record of all inflows.

2) A record of all outflows.

3) A daily reconciliation between inflows, outflows, and volume on hand.

4) Written daily entries of any unusual occurrences that might effect the inflow, outflow or volume on hand.

5) Written entries explaining in detail any adjustment to the records.

d. Facilities required to utilize inventory control as a monitoring method shall maintain accurate records; and if such record keeping indicates a discrepency of 1% or more of the total volume stored in any one tank, as a minimum, on a weekly basis, owners or operators shall proceed in accordance with Chapter I, Section G.6.-9.

e. Inventory control shall not be used as an indication of tank integrity. Its use shall be limited to a preliminary indication of a possible leak.

4. Tank Monitoring

a. These requirements apply to all new double-walled tanks proposed for the underground storage of hazardous materials.

b. The design of all double-walled tanks shall include provision(s) for monitoring of the secondary containment.

c. The annular space shall be free of restrictions that will preclude the drainage of a release to a monitoring point.

d. These provisions shall allow for monitoring that may consist of visual inspection and/or continuous electronic surveillance.

e. Monitoring systems shall be accessable at grade level for any required maintenance and/or testing of devices.

f. Access at grade level must be water tight.

g. An approved monitoring device per Section F.6.c or a visual inspection program per Section F.2 of this Chapter shall be employed as a monitoring technique.

5. Backfill Monitoring

a. This type of monitoring is required to detect leaks and spills or the intrusion of groundwater into secondary containment consisting of backfill material between the primary and secondary containers, such as a liner system. Monitoring shall be achieved through the installation of monitoring wells, U-tubes, collection sumps, or an equivalent system within the backfill material.

b. Monitoring and recovery wells shall be installed within the backfill material as follows:

1) Monitoring Wells

a) One monitoring well shall be installed at the one central low point of the secondary containment.

b) Monitoring wells shall consist of a 4 inch Schedule 40 PVC pipe, or equivalent material compatible with the stored contents, that extends to the bottom of the secondary containment.

c) The well shall be perforated or slotted to within 5 feet of grade level in such a manner that precludes the infiltration of backfill material.

d) Perforations shall not exceed 1/4 of an inch in diameter. Eight perforations per row evenly spaced along the perimeter of the pipe shall be required, each row separated by no more than 2 inches.

e) Slots shall not exceed 1/4 of an inch in width and 4 inches in length. Eight slots per row evenly spaced along the perimeter of the pipe shall be required, each row of slots separated by no more than 2 inches.

f) The specifications in d) and e) above are included in this section as a guide only. Other alternatives to perforation/slot requrements may be approved by the County Engineer.

g) If necessary to comply with 3 above, filter fabric may be wrapped around the well.

h) The well must be securable at grade level.

i) Grade level access to the well shall be water tight.

j) An approved monitoring device per Section F.6.c of this Chapter shall be employed as a monitoring technique.

2) Recovery Wells

a) A recovery well shall be installed within the secondary containment for all facilities using backfill monitoring.

b) The recovery well shall be used to recover any unauthorized releases, groundwater or surface water infiltration.

c) The recovery well shall be located within the low point area of the secondary containment.

d) The diameter of the recovery well shall be 12 inches as a minimum.

e) The installation of recovery wells shall also comply with Sections F.5.b.1)h) and i) above.

6. Monitoring Devices

a. All facilities proposed for the underground storage of hazardous materials shall be monitored.

b. Any facility not to be visually monitored per Section F.2 of this Chapter shall be provided with an approved monitoring device.

c. The type of monitoring devices required shall be as follows:

Storage Facility	Stored Product	Devices Approved
Liner System(Dry)	Volatiles	1,2 or 4
Liner System(Dry)	Non-Volatiles	1 or 4
Liner System(Wet)	Volatiles	1,2 or 4
Liner System(Wet)	Non-Volatiles	1 or 4
Double-Walled Tanks	Volatiles	1,2 or 3
Double-Walled Tanks	Non-Volatiles	1 or 3
Piping Systems	Volatiles	1,2 or 3
Piping Systems	Non-Volatiles	1 or 3

1-Conductive/Conductivity Sensors 2-Vapor Monitors 3-Pressure Sensors 4-Suction Lysimeter

G. PIPING SYSTEMS

1. General Provisions

a. The design, fabrication, assembly and testing of piping systems transporting flammable and combustible liquids shall be in conformance with the applicable sections of ANSI B31, American National Standard Code for Pressure Piping and NFPA 30, Flammable and Combustible Liquids Code.

b. All pressure delivery systems shall be provided with a mechanical flow restricting leak detector, or approved equivalent, regardless of the type of secondary containment provided.

c. All piping systems appurtenant to underground storage facilities shall provide for secondary containment and monitoring.

d. Such monitoring shall be separate from that of the primary containment.

e. New construction consisting of the installation of piping systems only shall comply with all applicable requirements of Sections C and F for secondary containment and monitoring.

2. Requirements

a. Secondary Containment

1) Double-Walled Pipes

Double-walled piping systems shall comply with the performance requirements of Section C.2.

2) Liner Systems

Liner systems for piping shall conform to the performance standards of Section C.3 of this Chapter.

3) Concrete Trenching

Trenching containment of piping systems are acceptable provided the performance standards of Section C.1 are complied with.

b. Monitoring

1) Secondary containment of piping systems shall contain provisions for monitoring.

2) Visual monitoring shall not satisfy the requirements of this Section.

3) Monitoring of piping systems shall comply with Sections F.1 and F.6 of this Chapter.

3. Variances

a. Pressure Delivery Systems

Pressure delivery systems may be exempted from the secondary containment requirement provided the following conditions are met:

1) The system shall shut down any portion of the delivery system that develops a leak.

2) The system shall not be reset by the operator until such time as the piping system has been tested and the leak repaired.

3) Such a system shall be installed in a tamper-proof enclosure and shall be provided with visual and/or audible alarms as defined by Section E.2.f.

4) The system must allow for thermal contraction of product to minimize the possibility of a false shut-down

5) Provide overfill protection that complies with Section E.2.b of this Chapter.

b. Suction Delivery Systems

Suction delivery systems may be exempted from secondary containment requirements provided the following conditions are met:

1) Vent and vapor recovery piping shall run directly toward the tank, installed without sag or trap, and with 1/4 inch fall per foor of horizontal run.

2) Provide overfill protection that complies with Section E.2.b of this Chapter.

CHAPTER III

EXISTING FACILITY REQUIREMENTS

A. PERMITS REQUIRED

1. Permit Application

All owners/operators of existing facilities currently storing hazardous materials underground shall be required to apply for an operational Hazardous Materials Underground Storage Permit (HMUSP) by January 28, 1985. In addition, a Leak Detection Program (LDP) and a Tank Monitoring Program (TMP) shall be submitted for approval and incorporation into the facility HMUSP. Instructions for obtaining an HMUSP for existing facilities are contained within Chapter VII of these guidelines.

2. Provisional Permit

If at the time of application the facility is providing suitable underground storage, a provisional HMUSP will be issued. Such a permit will allow continued operations at the facility while the County Engineer reviews and approves submitted proposals, approved proposals are implemented, and full compliance with these guidelines is achieved. The term of a provisional HMUSP shall be six months and may be extended by the County Engineer up to a total term of one year.

3. Operational Permit

When all of the applicable requirements of these guidelines have been complied with, the provisional HMUSP shall be replaced with an operational HMUSP.

B. LEAK DETECTION PROGRAM (LDP)

1. LDP General Requirements

These leak detection guidelines are presented as the minimum acceptable procedures for determining the integrity of existing underground storage tanks. If methods and procedures described in this section are used, the test results will generally be accepted as an indication of that facility's integrity. However, if a different alternative is preferred for carrying out the LDP, that alternative shall be reviewed by the County Engineer to determine if the purposes of the LDP are served.

A LDP shall consist of a report establishing the current and past integrity of the tank and any associated piping. This report shall be submitted to the County Engineer for review, and shall consist of:

a. Tank integrity test results to determine if the tank is currently providing suitable storage.

b. A leak detection investigation (LDI) consisting of soil and, where applicable, groundwater analyses to determine the adequacy of past storage and to verify the current tank integrity.

2. Application of LDP

a. The tank integrity test shall be in accordance with requirements of Section B.3 of this Chapter.

b. To determine the adequacy of past storage in areas of deep groundwater, as defined in Section B.4.a.1) of this Chapter, soil samples shall be obtained and analyzed.

c. To accomplish b. above, test borings shall be established and soil samples retrieved pursuant to Sections B.4.b.1) and 2) of this Chapter.

d. To determine the adequacy of past storage in areas of shallow groundwater, as defined in Section B.4.a.2) of this Chapter, soil and groundwater samples shall be obtained and analyzed.

e. To accomplish d. above, test wells shall be set pursuant to Sections B.4.c.1) and 2) of this Chapter, and soil and groundwater samples shall be obtained pursuant to Sections B.4.c.3) and 4) respectivly.

3. Tank Integrity Test

a. Requirements

1) Tank integrity tests applied to tanks and piping must, as a minimum, be able to detect a leak rate of .05 gal/hr or less, adjusting for the following variables:

a) Temperature compensation.

b) Temperature stratification.

c) Tank expansion/deflection.

d) Vapor pockets.

e) Evaporation.

f) High groundwater.

g) Tank and piping characteristics.

2) The test performed shall be a total system test, to include all tanks and piping containing the hazardous material. The methods used must possess the ability to distinguish between piping and tank leaks.

3) Air pressure tests are not acceptable for tank integrity testing. Such tests may only be used to establish tank integrity of new installations under the supervision and approval of the Fire Department.

4) Hydrostatic tests unable to detect a leak rate of 0.05 gal/hr may only be used to verify suspect leaks, and will not be accepted as a true indication of tank integrity.

b. Acceptable Tank Integrity Tests

1) The following tank integrity tests shall be accepted by the County Engineer as fulfilling the requirements of this section when used in full compliance with the manufacturers procedures:

a) Petro Tite Tank Tester, Heath Inc. (formerly the Kent-Moore Test).

b) Horner Ezy-Check Leak Detector, Horner Creative Metals.

c) Leak Lokator, Hunter Environmental Services (formerly the Sunmark test).

2) Other tank integrity testing methods able to detect a leak rate of .05 gal/hr, adjusting for variables, may be authorized by the County Engineer upon review of technical data.

c. Tank Integrity Test Results

1) Underground storage tanks shall be classified according to leak rates for the purposes of remedial measures.

2) The following leak rate classifications shall be applied to all existing underground storage tanks following a tank integrity test:

a) No leak rate detectable

An underground storage tank may achieve a no leak rate classification only if

there is absolutely no loss of product. These tanks shall be classified as providing suitable underground storage, and no additional tests are required.

b) Detectable leaks less than 0.05 gal/hr

(1) The County Engineer shall determine on a case-by-case basis what form of remedial measures shall be required for tanks with detectable leak rates. The determination will consider:

(a) The calculated leak rate.

(b) The accuracy of the integrity test.

(c) Physical characteristics and hazard potential of stored contents.

(d) Material makeup of storage tank.

(e) Geohydrology of local area.

(f) Explanations by the owners or operators to account for the detected leak rate.

(2) The County Engineer may require the owners or operators to proceed in accordance with Section B.6.b.

c) 0.05 gal/hr and greater

(1) Owners or operators of tanks with confirmed leak rates of 0.05 gal/hr or greater shall immediately evacuate the contents of the tank.

(2) The County Engineer shall be notified immediately of such a finding.

(3) The County Engineer shall determine if a repair is allowable. All repairs shall comply with Section D.

4. Leak Detection Investigation (LDI)

a. LDI Applications

1) A deep groundwater site shall be considered an area where the historical high groundwater level is deeper than 40 feet below grade level.

2) A shallow groundwater site shall be considered an area where the historical high groundwater level is between 20 and 40 feet below grade level.

3) A high groundwater site shall be considered an area where the historical high groundwater level is less than 20 feet below grade level, and may come into contact with the primary or secondary containment.

4) It shall be the responsibility of a California registered engineering geologist or a California certified geologist to determine if a tank is located within a deep, shallow, or high groundwater area.

5) The results of such a determination shall be documented and included within the LDI proposal.

6) All LDI proposals shall be consistent with such a determination.

7) Alternative methods to the use of borings in a LDI may be approved by the County Engineer upon review of technical data and the proposed procedure. Such data shall specifically demonstrate effectivness in detecting substances stored or previously stored in the underground storage tank.

b. Deep Groundwater Areas

1) Test Boring and Soil Sampling Standards

a) All test borings shall be slant drilled to intercept a point beneath the center of the tank, if possible. If slant drilling is not feasible, the test borings may be drilled vertically and the reason shall be stated in the proposal.

b) Soil samples shall be taken at depths of 5, 10, 20, 30 and 40 feet below grade level.

c) A Shelby Tube or a Modified California Sampler shall be utilized for taking all soil samples.

d) Soil samples shall be capped immediately with teflon or aluminum.

e) Soil samples shall not be extruded in the field but are to be immediately placed in a refrigerated ice chest and transported to a state certified laboratory for analysis.

2) Number and Location of Test Borings

a) Single Tanks - A minimum of two test borings will be required, each located on opposite sides of the tank along the major axis of the tank.

b) Multiple Tanks - The appropriate number and location of test borings for multiple tanks will vary from facility to facility due to the various tank configurations in existence. As a minimum, borings shall be placed at 20 foot intervals around the tank cluster. The actual number and location of borings for multiple tanks shall be evaluated on a case-by-case basis. Tanks separated by twenty (20) feet or more shall be considered single tanks for the purposes of test boring location and placement.

3) Soil Analysis

The analysis of all soil samples shall be carried out pursuant to Chapter IV, Section B.2.

c. Shallow Groundwater

1) Test Boring and Soil Sampling Standards

a) All test borings shall be drilled in accordance with Section B.4.b.1).

b) If slant drilling is not possible, soil samples may be retrieved during test well construction operations.

2) *Number and Location of Test Borings*

The number and location of test borings shall comply with Section B.4.b.2.

3) Test Well Construction Standards

All test wells shall be constructed pursuant to the monitoring well construction standards contained in Section C.5.b.2) of this Chapter.

4) Number and Location of Test Wells

a) Single Tanks - Where the groundwater gradient is known, one test well installed on the downgradient side of the tank will be required. If the gradient is not known, a minimum of two wells located on opposite sides of the tank are required.

b) Multiple Tanks - The number and placement of test wells for multiple tanks shall be evaluated per Section B.4.b.2)b) of this Chapter.

5) Groundwater Sampling

a) Water sampling shall be accomplished with a teflon or stainless bailer or submersible pump. Teflon shall be used for pump tubing.

b) Water samples shall be handled and preserved according to the EPA methods described in the Federal Register (Volume 44, No. 244, Tuesday December 18, 1979, page 75050, Table II) for the type of analysis to be performed.

6) Soil and Groundwater Analysis

All soil and groundwater analysis shall be carried out pursuant to Chapter IV, Sections B.1. and 2.

d. High Groundwater

The provisions of Section B.4.c apply to all tanks located within high groundwater areas with the exception that soil sampling required per Section B.4.c.3) is not necessary within the saturated zone.

5. LDP Results

a. If any levels of hazardous materials known to be stored in an underground storage tank are detected in the soil or groundwater samples, such a facility shall be suspected of a past unauthorized

release, and owners or operators shall proceed in accordance with Section B.6.b below.

b. These levels of hazardous materials shall be considered above background if the constituent occurs naturally at the site or is demonstrated to have occured from other sources.

c. If the tank integrity test indicates an existing leak rate, such a tank shall be suspected of an unconfirmed unauthorized discharge, and facility owners may retest within five (5) working days.

d. If the results of the initial test and the retest do not confirm an unauthorized discharge, owners or operators may proceed in accordance with Section B.6.a below.

e. If the results of initial test and/or the retest confirm an unauthorized discharge, owners or operators shall proceed in accordance with Section B.6.b below.

6. LDP Reporting Requirements

All owners or operators who carry out an approved LDP shall proceed as follows:

a. Non-Contaminated Facilities

A non-contaminated facility shall be a facility containing tanks that have no detectable leak rates per Section B.3.c.2)a) of this Chapter, and from which all soil and/or groundwater analysis show no detectable contaminants above any established background levels. Owners or operators of tanks located on such facilities shall prepare a report that contains the following:

1) Tank integrity test results issued and signed by the test administrator.

2) Tank integrity test results shall indicate an assigned numerical leak rate, the lower detectable limit of the test employed, and any errors associated with test procedures to include equipment calibration and data interpretation errors.

3) If a tank was retested, and an unauthorized discharge was not confirmed, documentation of both test results shall be included.

4) Soil and/or groundwater analysis issued and signed by the approved laboratory.

5) Tank owners or operators, upon notification of County Engineer review and approval, shall implement a TMP.

b. Facilities Suspect of Contamination

Owners or operators of facilities suspect of a past unauthorized discharge or a current confirmed unauthorized discharge shall initiate a site investigation pursuant to Chapter V, proceed in accordance with Section C of this Chapter, and submit a report to the County Engineer that contains the following:

1) The information required pursuant to Sections B.6.a.1)-4).

2) Further site investigation results carried out as required by Chapter V that satisfy the provisions of Section B of said Chapter.

C. TANK MONITORING PROGRAM (TMP)

1. Owners or operators that demonstrate tank and site integrity shall initiate a TMP upon approval by the County Engineer.

2. Approved programs shall provide continuous monitoring of the facility. Visual monitoring to qualify as continuous must comply with Chapter II, Section F.2.

3. A TMP may be a combination of systems and/or devices associated with the tank and piping that will monitor the storage facility for any type of unauthorized release and give an early warning of such a release. Early detection shall enable timely remedial measures to be employed, thereby reducing the chances of major soil or groundwater contamination taking place.

4. A TMP shall include, but is not limited to:

a. Monitoring Wells

b. Monitoring Devices

c. Overfill Protection

d. Inventory Control (where applicable)

e. Flow Restriction Devices

5. Monitoring Wells

a. Requirements

1) All existing tanks currently storing hazardous materials located within areas of deep or shallow groundwater, shall require the installation of vadose zone monitoring wells exterior to such tanks, for the purposes of continuous monitoring. Such wells shall be located and installed pursuant to Sections C.5.c. and C.5.b.1.b)-f).

2) Existing tanks located within areas of shallow groundwater only shall also comply with Section C.6.h.

3) Existing tanks located within areas of high groundwater shall require the installation of groundwater monitoring wells for the purposes of continuous monitoring. The test wells installed as part of the LDI shall be used to comply with this section.

b. Construction Standards

1) Deep Groundwater

a) Test borings drilled under a LDP to obtain soil samples and explore for groundwater may be converted to monitoring wells by filling with concrete up to a depth equal to the bottom of the tank backfill.

b) All monitoring wells shall have a final minimum diameter of 8 inches.

c) A 4 inch PVC perforated/slotted casing shall be installed to extend from grade to either 1 foot below the tank or to the bottom of the tank backfill, whichever greater.

d) The perforations/slots shall preclude the infiltration of any gravel pack envelope material, and the interval shall extend from the bottom of the well casing to either 5 feet below grade or to a height equal to the midpoint of the tank, whichever more shallow.

e) An annular seal shall be provided from grade to a depth of 5 feet or to the midpoint of the tank, whichever applicable per d) above. The remaining interval shall have a gravel pack envelope surrounding the perforated/slotted section of PVC casing.

f) The requirements of Section C.5.b.2)i)-k) also apply.

2) Shallow Groundwater

a) Each monitoring well shall be bored to a depth of 20 feet below the upper limit of the zone of saturation. However, monitoring wells shall not penetrate a competent (5 feet thick) clay layer below the zone of saturation.

b) Drilling with a hollow-stem, continuous-flight auger is preferable. A solid stem, continuous-flight auger may be used for depths of less than 30 feet. If conditions do not permit the use of an auger, an air rotary drill with casing hammer can be used. Monitoring wells shall be logged under the supervision of a California registered engineering geologist or a California state certified geologist.

c) Monitoring wells will be drilled to accept a casing of four-inch minimum diameter.

d) The width of the annular space shall be a minimum of two inches.

e) Monitoring wells shall be cased with clean PVC casing. Cleaning shall be accomplished with trisodium phosphate (TSP) and water followed by thorough rinsing with water. The use of threaded joints is preferable; however, slip joints may be used without solvent glue.

f) PVC screened casing shall be installed within the entire saturated zone considering the historical high water table level.

g) The entire perforated zone shall be gravel-packed with clean, washed pea gravel. The casing shall be cemented from the top of the perforated zone to the ground surface and an appropriate surface grout seal installed.

h) The well shall be developed by pumping or bailing.

i) The surface of each monitoring well shall be protected from fluid entry,

accidental damage, unauthorized access and vandalism. Wellheads may be secured above or below the ground surface, depending on local conditions. In all cases, a watertight cap shall be installed on the wellhead. If not otherwise secured, the cap shall also be locked.

j) Wellheads secured below the ground surface shall be completed in a concrete vault with a locking cover. The well shall be installed with provisions for drainage to prevent accumulation of rainfall or surface runoff.

k) Each well shall be identified with appurtenant information to include well owner, well number, type of monitoring device installed, depth of well, hole and casing diameters, and location of screened or perforated intervals.

l) Such information shall be located on a corrosion resistant metal tag affixed to the underside of the vault cover.

3) High Groundwater

Construction standards for wells located in areas of high groundwater shall be the same as those for shallow groundwater.

c. Number and Location of Monitoring Wells

1) The number and location of final vadose zone monitoring wells located exterior to tanks located within areas of deep or shallow groundwater shall comply with Section B.4.b.2).

2) The number and location of final saturated zone monitoring wells located exterior to tanks located within high groundwater areas shall comply with Section B.4.c.4).

6. Monitoring Devices

Monitoring wells installed exterior to existing underground tanks shall have an approved monitoring device installed in compliance with the following requirements:

a. Carry an approval of design standards from UL or other nationally recognized testing organizations.

b. Operate on an electronic and continuous basis.

c. Interface with audible and/or visual alarms.

d. All monitoring devices used to monitor flammable or combustible materials shall be intrinsically safe, and must be approved by the state Fire Marshall.

e. All monitoring devices shall be compatible with the stored contents, local geohydrology, and the type of facility.

f. The type of devices required are as follows:

Groundwater Classification	Stored Materials	Devices Allowed
Deep	V	1
Deep	NV	2
Shallow	V	1
Shallow	NV	2
High	V	1 or 3
High	NV	2 or 3

V=Voliatle 1-Vapor Monitors 2-Lysimeters
N=Non-Voliatle 3-Thermal Conductivity Sensors

g. For tanks located within deep groundwater areas, the monitoring devices shall be installed at a depth equal to the bottom of the tank.

h. For tanks located within shallow groundwater areas, the monitoring devices shall be installed at a depth equal to the bottom of the tank. The following also applies:

1) The monitoring device may be installed into the test well(s) established to obtain groundwater samples provided:

a) A packer is installed at a depth below the monitoring device to preclude the transportation of hazardous materials through the open conduit.

b) The final vadose zone well located in the interval above the packer shall comply with the construction standards of Section C.5.b.1.

c) A five (5) foot minimum annular seal between the vadose zone slotted/perforated interval and the

saturated slotted/perforated interval shall be required.

d) Owners or operators unable to comply with a)-c) above shall install independent vadose zone monitoring wells that comply with the construction standards of Section C.5.b.1.

i. For tanks located within high groundwater areas the monitoring devices shall be located at a depth equal with the saturated-unsaturated zone interface.

7. Overfill Protection

a. All existing underground storage tanks currently storing hazardous materials shall, as a minimum, retrofit with a product tight fill box that complies with Chapter II, Section E.2.e.

b. A variance from requirement 7.a above may be granted if a storage facility qualifies for such a variance pursuant to Chapter II, Section E.2.d.

c. Other overfill prevention systems/devices that comply with Chapter II, Section E.2.f or E.3 may be used in place of a liquid tight fill box upon approval by the County Engineer.

8. Inventory Control

The inventory control requirements for all existing tanks shall be those contained in Chapter II, Section F.3.

9. Flow Restriction Devices

a. All pressure delivery systems shall be required to retrofit with an approved flow restriction device.

b. Such a device shall be capable of restricting the flow to a rate of 1.5 gal/hr if a leak develops anywhere in the piping system.

c. Flow restriction devices at existing installations that are currently operating at a rate of 3.0 gal/hr, and are in good operating condition, may remain in service but may not be repaired or replaced by a device that restricts at a rate greater than 1.5 gal/hr.

D. <u>REPAIR OF UNDERGROUND STORAGE TANKS</u>

1. Existing underground storage tanks currently storing hazardous materials and having failed a tank integrity

test may be considered for repair where basic structural integrity of the tank remains.

2. The approval for repair of tanks classified in Sections B.3.c.2)b) or c) shall be at the discretion of the County Engineer upon review of the information contained in Section B.3.c.2)b)(1).

3. Tank repairs approved by the County Engineer shall be carried out in strict accordance with Uniform Fire Code Standard No. 79-6 (Draft), Interior Lining of Underground Steel Storage Tanks. Standard 79-6 is included in Appendix D of these guidelines.

4. The herein contained leak rate/tank repair criteria does not apply to the piping or any appurtenance to underground storage tanks.

6. A permit shall be obtained prior to any tank repairs taking place. Instructions for obtaining a permit for tank repair are contained in Chapter VII, Section D.

7. Emergency repairs necessary to contain an unauthorized discharge, protect the integrity of a facility or to the environment may be carried out prior to obtaining a permit.

8. Five (5) days after initiating such emergency repairs, application shall be made for a permit, and the provisions of Chapter VII, Section D shall apply.

CHAPTER IV

LABORATORY ANALYSIS

A. GENERAL REQUIREMENTS

1. All samples shall be analyzed by a laboratory approved by the County Engineer for the type of analysis to be performed.

2. Samples shall be analyzed using suitable methods described in:

   a. The latest edition of EPA "Methods for Chemical Analysis of Water and Waste," or

   b. The latest edition of EPA "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," or

   c. The latest edition of "Standard Methods for the Examination of Water and Wastewater," or

   d. Appropriate EPA methods.

3. Analysis shall be performed for all materials stored in the tank, both present and past. The constituents analyzed for shall account for compounds that break down or degrade in the soil or groundwater.

4. If the nature of all constituents ever stored in the tank cannot be determined, then the analysis of samples shall include a complete priority pollutant scan in which all peaks detected are identified.

5. Such a pollutant scan shall include volatile organics, base/neutral extractables, pesticides, PCB's, metals, and cyanide.

6. If specific groups of constituents can be accurately documented to never have been stored in the tank, analysis for these groups may be eliminated.

B. LDI SAMPLES AND ANALYSIS

1. Water samples shall be analyzed according to methods described in A.2. above for the constituents determined in A.3. above. The following information shall be provided:

   a) List of materials previously and presently stored in the tank.

   b) List of constituents being analyzed for.

   c) Methods used.

   d) Limits of detection.

2. Soil samples obtained shall be analyzed as described in Section B.1. above, and in addition:

   a. Samples from the same bore hole may be composited on an equal volume basis prior to analysis.

   b. If analysis for volatile constituents is to be performed, the compositing shall occur by taking equal volumes directly from each sample with a cork bore and placing these volumes directly into purge and trap apparatus.

C. SITE INVESTIGATION ANALYSIS

1. Water samples shall be analyzed for the appropriate constituents pursuant to Section B.1. above.

2. Soil samples obtained shall be analyzed pursuant to Section B.1. above, except that samples shall not be composited. Samples must be analyzed individually.

CHAPTER V

SITE INVESTIGATION

A. APPLICABILITY

The County Engineer shall require a site investigation to be performed at a facility whenever any of the following occur:

1. Soil or groundwater analysis carried out at such a facility indicates the presence of contaminants.

2. A tank integrity test confirms the presence of a leak in either the tank or piping.

3. Inventory control or other monitoring methods confirm that an unauthorized release to the environment has occurred.

B. REQUIREMENTS

Any site investigation carried out shall as a minimum produce the following information:

1. Define the geology and geohydrology of the area.

2. Define the vertical and lateral extent of contamination, if any.

3. Establish the rate of migration toward groundwater or establish the potential for migration of the contaminant if not presently moving, where applicable.

4. Develop clean-up and mitigation measures and/or demonstrate to a satisfactory degree that no hazards due to leaks exist.

C. REPORTS

The results of all site investigations shall be documented in a report to be submitted to and reviewed by the County Engineer. The contents of such a report shall include:

1. Site History

   a. A brief description of the type of business and associated activities that take place at the site.

   b. Previous businesses at the site.

   c. Complete list of the hazardous materials stored in all tanks located within the facility.

2. Site Geology

   a. The geologic area shall be defined in such a manner that all limits of contamination are known.

b. Borings established to characterize the geologic area shall include the depth and description of each stratum to a minimum depth of 40 feet, or beyond the vertical limit of contamination, whichever greater.

c. Stratum data shall include a soil description, soil pH, and moisture content.

3. Site Geohydrology

a. Depth to usable groundwater.

b. Indication of perched water zones, if any.

c. Water level in local wells, if available.

d. Depth of aquifer.

4. Borings

a. Borings shall be established in such a number and location as to completely define the vertical and lateral extent of contamination.

b. Borings shall be established up to and beyond the plume edge to verify the limits of contamination.

c. The sampling range shall extend from the upper limit of contamination or the tank bottom, whichever shallower , to the lower limit of contamination or 40 feet, whichever deeper.

d. Soil samples shall be obtained and handled as indicated in Chapter III, Section B.4.b.1)c)-e).

e. If the required lower sampling depth falls within the saturated zone, a groundwater sample shall also be obtained pursuant to Chapter III, Section B.4.c.5).

5. Analysis

The analysis of all soil or groundwater samples shall be carried out in accordance with Chapter IV, Sections A. and C.

6. Results

Soil sample analyses shall be interpreted to produce the following correlations:

a. Vertical and lateral plume maps of all identified contaminants.

b. Graphical or tabular representations of critical contaminants compared to existing background levels, if applicable.

7. Remedial Measures

Proposals for remedial measures shall be included in the report. Remedial goals shall be:

a. To remove all contaminated soil or reduce the level of contaminants that occur naturally at the site to that of background.

b. To remove from the subsurface as much escaped hazardous material as possible prior to entry into an aquifer.

c. If a hazardous material has entered an aquifer, one or both of the following may be required:

1) Hazardous material recovery proposal.

2) Groundwater treatment proposal.

CHAPTER VI

CLOSURE OF UNDERGROUND STORAGE TANKS

A. CLOSURE REQUIREMENTS

1. Underground storage tanks or piping containing hazardous materials shall not be abandoned, closed or temporarily ceased to be operated until certain conditions set forth in this section are met. Acceptable procedures for facility closure include:

   a. Temporary closure.

   b. Permanent closure (abandonment) of tank in place.

   c. Removal of tank.

2. Closures shall be carried out such that all applicable regulations from the following agencies are complied with:

   a. Los Angeles County, Department of County Engineer-Facilities.

   b. Los Angeles County Fire Department, Fire Prevention Division.

   c. South Coast Air Quality Management District.

   d. Los Angeles County Department of Health Services.

3. Notice of Closure

   The agencies included in Section 2.a and 2.b above shall be notified in advance of any closure in accordance with the following:

   a. Removal of tank shall require a seventy-two (72) hour advance notification.

   b. Permanent or temporary closures shall require a thirty (30) day written notification.

4. Permits

   Prior to any permanent or temporary closures being initiated, a HMUSP application form for closure, an additional approval fee, and any appropriate supporting information shall be filed with the County Engineer.

5. Temporary Closure

   a. All temporary closures shall be carried out as indicated in Los Angeles County Fire Department Supplement #A - Inspection Guide #6, Part A, included as Appendix E of these guidelines.

b. A temporary closure shall not exceed ninety (90) days.

6. Permanent Closure of Tanks in Place

a. All tanks proposed for abandonment shall comply with Appendix E, Part B.

b. In conjunction with Section A.6.a above, owners/operators of such tanks shall demonstrate past site integrity.

c. A determination of site integrity shall comply with Chapter V, Sections C.4 and 5.

d. A report shall be submitted to the County Engineer containing the results of the site investigation.

7. Permanent Closure of Tanks by Removal

a. All tank removals shall be carried out as indicated in Appendix E, Part C.

b. Removed tanks shall not be transported away from the site until an inspection is carried out by the County Engineer.

c. The inspection shall be performed to establish site integrity.

d. After inspection, tanks shall be transported to a legal disposal point.

e. The site shall be backfilled and recompacted to a relative compaction of 90%.

B WELL ABANDONMENT

1. All abandoned wells shall be destroyed in such a way that they will not produce water or act as a channel for interchange of water, when such interchange may result in deterioration of the quality of water in any or all water bearing formations penetrated, or present a hazard to the safety and well-being of people and animals.

2. A well destruction permit issued by the Los Angeles Department of Health Services shall be required for all wells requiring permit for their initial construction.

3. Well destruction shall be accomplished according to methods described in the latest "Water Well Standards: State of California" by the Departmemt of Water Resources, contained in Bulletin 74-81, December 1981, or any other methods that will provide equivalent or better protection.

C. SITE DECONTAMINATION

1. Plans for the decontamination of a facility shall be submitted to the County Engineer for approval no later than 30 days before the commencement of such operations. Other agencies having jurisdiction shall also be notified. These agencies include the California Regional Water Quality Control Board, Los Angeles County Department of Health Services, and the South Coast Air Quality Management District.

2. As a minimum requirement:

   a. Cleaning operation shall be done under the supervision of persons who understand the hazardous potential of the original liquid stored and its components.

   b. The personnel shall be sufficiently skilled to safely carry out such operation.

   c. Contaminated materials removed from such facility shall be disposed of at legal point of discharge.

   d. The operation shall be carried out in a manner that will not endanger the health of the public and the environment.

CHAPTER VII

PERMITTING REQUIREMENTS

A. GENERAL REQUIREMENTS

1. Hazardous Materials Underground Storage Permit (HMUSP) Application

   a. A HMUSP application form shall be filed for each site accompanied by a Tank Assessment Statement (TAS) for each tank existing at a facility or proposed for installation, the proper permit application fee and construction plans that describe the activities to take place at the facility. These materials shall constitute a valid HMUSP application.

   b. The submittal of a HMUSP application shall occur prior to plan clearance.

   c. If the owner of the tank(s) is not the operator of the tanks, then the operator shall enter into a written agreement with the owner requiring the operator to: monitor the tank(s), maintain required records, comply with all conditions and limitations of the permit, and properly close the tank(s).

2. Fees

   a. The proper HMUSP application fee amount shall accompany each HMUSP application.

   b. Such a fee shall not be refundable.

Permit Application Fee Schedule

Primary Containers Within Facility	Facility Permit Class	Application Fee
1 - 5	A	$ 76
6 - 20	B	$152
21 or more	C	$228

3. Tank Assessment Statement (TAS)

A TAS shall be considered a supplemental form containing information pertinent to the storage facility, such as materials of construction, age, stored materials, and other technical data that is necessary to evaluate a storage facility, and is included as part of a permit application package. The following forms shall be accepted as a TAS:

   a. L.A. County, Department of County Engineer, Tank Assessment Statement (TAS)

A TAS form supplied by the County Engineer may be filed.

b. Hazardous Substance Storage Statement (HSSS)

Owners of existing underground storage tanks storing hazardous materials who have previously filed the California Water Resources Control Board HSSS as required by state law, and have retained a copy of such, may submit the HSSS for a TAS.

c. State Water Resources Control Board Permit Application

The Permit Application form supplied by the Board (Part IV - VIII) will be accepted as a TAS.

4. Plan Standards

a. A complete set of plans shall consist of a plot plan, typical tank cross-sections, and the appropriate detail drawings and additional information necessary to fully describe and substantiate each proposal.

b. Four (4) complete sets of plans shall be submitted at the time of HMUSP application.

c. All plans shall be neat and legible, and the minimum size submitted shall be 11 X 17. Original tracings shall not be submitted, and detail drawings shall be placed on 8.5 X 11 paper.

d. Plot Plans

Plot plans shall be scaled and as a minimum indicate:

1) Facility and/or business name, and the site address located at the right hand corner of the plan.

2) Nearest cross-streets and north arrow.

3) Property boundaries.

4) Location of all structures on property.

5) Location of all existing and proposed tanks and piping runs.

6) Existing tanks to be removed.

7) Dispensing points.

e. Tank Cross-Sections

Detailed cross-sectional views through the major axis are required for all typical tanks. Separate drawings shall be required for all tanks that differ in design. These sectional drawings shall indicate:

1) Manufacturer and model of tank.

2) Manufacturer and model of any devices used within the storage system to include monitoring, overfill protection, etc.

3) Capacity of tank(s).

4) Materials of construction for tanks and piping.

5) Type of pump used to dispense product.

6) Location of monitoring devices.

7) Overfill protection devices/systems.

8) Piping run slopes.

9) Location and purpose of all tank openings.

f. Additional Detail Drawings

Additional detail drawings may be required to adequately describe various aspects of the underground storage system, such as:

1) Monitoring systems.

2) Overfill protection devices/systems.

3) Liner connection details.

4) Alternatives to secondary containment and monitoring not contained within these guidelines.

g. Additional Information

Due to the wide regulatory range of application associated with hazardous materials storage, a variety of additional information may be requested to enable the County Engineer to properly evaluate proposals. Such additional information may include, but is not limited to:

1) UL documentation.

2) Material Safety Data Sheets for materials proposed for storage.

3) Engineering reports.

4) Technical specifications.

5) Brochures.

5. Plan Clearance and Permit Issuance

a. When all of the applicable requirements of L.A.C.C., Title 11, Div 4 have been met, plans will be cleared by the County Engineer enabling construction of the facility or continued operations, followed by the issuance of an operational HMUSP within 30 days of plan clearance.

b. A permit package shall consist of:

1) Operational HMUSP.

2) An approved tank monitoring program.

3) Annual reporting requirements.

4) Conditions and limitations applicable to the facility.

c. The Hazardous Materials Underground Storage Permit (HMUSP) shall contain the following information:

1) The name and address of the permittee.

2) The address of the facility for which the permit is issued.

3) Authorization of operation of the underground storage tank(s) approved under the permit, and the storage quantity limits.

4) The date the permit is effective.

5) Where applicable, a designation that the permit is provisional.

B. NEW INSTALLATIONS

1. In addition to the requirements of Section A of this chapter, all proposals for new tank installations shall:

a. Indicate a method of secondary containment for all tanks and appurtenant piping.

b. Piping systems utilizing suction as a dispensing method are exempt from the secondary containment requirement provided Chapter II, Section G.3.b is complied with.

c. Show the location of the required monitoring control panel(s) and associated conduit.

d. Include detailed drawings or information describing the overfill protection system required per Chapter II, Sections E.2.b. and c. unless a variance is granted pursuant to Section E.2.d.

C. EXISTING FACILITIES

In addition to the requirements of Section A of this chapter, a HMUSP application for existing tanks shall include the following information:

1. Leak Detection Program (LDP)

An LDP consistent with Chapter III, Section B shall be submitted for approval by the County Engineer at the time of HMUSP application. The following information shall be included:

a. A proposed tank integrity test that complies with Chapter III, Section B.3. If the test proposed is not included in Chapter III, Section B.3.b, The following information must be included:

1) A procedure manual prepared by the manufacturer or administrator of the test that contains:

a) Principles of test.

b) Methods used to account for the variables listed in Chapter III, Section B.3.a.

c) Description of all equipment used.

d) Guide for a typical test.

2) Qualifications of personnel to administer test.

3) Description of training program (if any) administered by test owners.

b. Geological documentation that classifies the tank as being located within a deep, shallow, or high groundwater area. Such documentation may originate from:

1) Soil boring logs developed by a registered engineering geologist.

2) Records of existing wells located within 500 feet of the facility.

c. If the facility is located within a shallow or high groundwater area, a monitoring well permit issued by the Los Angeles County Department of Health Services shall be submitted. A copy of the Department of Health Services Water Well Permit Policy is included as Appendix H.

d. A plot plan indicating the number and location of test borings or test wells pursuant to Chapter III, Sections B.4.b.2) or B.4.c.2.

e. Detailed cross sectional views of all typical test borings or test wells.

2. Tank Monitoring Program (TMP)

TMP information to be submitted for review by the County Engineer shall include:

a. Type of monitoring devices to be installed in the monitoring wells, consistent with Chapter III, Section C.6.f.

b. Manufacturer and model of monitoring device(s).

c. Manufacturer and model of the flow restriction devices required for pressurized piping systems.

d. The details of an inventory program if required per Chapter II, Section F.3.

3. Provisional Permit Issuance

a. A provisional HMUSP shall be issued upon plan clearance and approval of the LDP and TMP.

b. The term of a provisional HMUSP shall not exceed six (6) months.

c. A provisional HMUSP shall only be issued to facilities providing suitable storage while the LDP is carried out and the TMP is implemented.

d. Upon full compliance with Chapter III, Sections A-C, the provisional HMUSP shall be replaced by an operational HMUSP.

e. The term of the provisional and operational HMUSP together shall not exceed 5 years.

f. The County Engineer may restrict the term of a HMUSP to less than 5 years when the data submitted does not support a life expectancy of 5 years for an existing facility.

D. ADDITIONAL APPROVALS

1. Additional approvals shall be required for any of the following actions:

   a. Tank closure.

   b. Tank repair.

   c. Modifications.

   d. Addition of one tank to an existing facility.

   e. Change or addition of hazardous materials stored.

2. When a request for an additional approval is filed per D.1 above, the procedures set forth in these guidelines for obtaining a permit shall apply.

3. Each application for an additional approval shall be accompanied by the proper application fee and supporting information.

4. All additional approval application fees shall be $38 per tank.

5. If the additional approval request is for the closure of a facility, the applicant shall comply with Chapter VI of these guidelines.

6. If the additional approval request is to repair a tank, a permit may be issued provided the provisions of Chapter III, Section D are complied with.

7. Any modifications to a storage facility that involve the installation of systems or devices shall require an additional approval.

8. Replacement of tanks at an existing facility shall be considered a closure of the tanks to be replaced and a new installation of tanks, and all fees shall be assessed accordingly.

E. PERMIT TRANSFER

A HMUSP may be transferred to a new owner of the same business subject to an additional approval, provided:

a. The new owners accept full responsibility for all obligations under these guidelines at the time of the transfer of the business.

b. Such a transfer shall be documented on a form provided by the County Engineer within thirty (30) days of transfer of ownership of the business.

c. A required fee of $76 is paid.

F. PERMIT RENEWAL

If the additional approval is to extend or renew a permit, such application shall be made and a required fee of $76 paid at least thirty (30) days prior to the expiration date of such permit, and the permit shall remain in effect until the County Engineer has made the decision pursuant to Section H below.

G. NON-PERMITTED TANKS

A fee of $38 dollars shall be required to obtain a permit allowing the closure of unpermitted tanks that previously stored hazardous materials. All closures shall be carried out in accordance with Chapter VI.

H. DECISIONS BY THE COUNTY ENGINEER

1. The following provisions apply to all permit applications and additional approval requests.

   a. The County Engineer shall grant or deny a permit application or an additional approval request within ninety (90) days after the application has been filed, all fees have been paid, and the California Environmental Quality Act (CEQA) has been complied with.

   b. This time limit may be extended by mutual agreement between the County Engineer and the applicant.

   c. A permit shall be denied if the applicant fails to demonstrate compliance with these guidelines.

2. Appeal to Hazardous Materials Storage Appeals Board

   a. Any person dissatisfied with the decision of the County Engineer may appeal the decision in writing to the Appeals Board, setting forth the grounds for appeal.

   b. The County Engineer shall be an ex officio non-voting member of the appeals board and shall act as secretary. All appeals shall be filed with the secretary of the Appeals Board.

   c. Such an appeal shall be submitted within thirty (30) days after notice of denial.

d. The Appeals Board shall set a time and place for the hearing on the appeal, and shall notify the appellant, applicant or permittee of such time and date not less than ten (10) days prior to the hearing.

3. Hearing by Appeal Board

a. The Appeals Board may adopt reasonable rules and regulations for the conduct of its hearings and is not bound by formal rules of evidence.

b. At the hearing, the Appeals Board shall consider all competent evidence offered by any person pertaining to the decision being appealed.

c. The hearing may be continued by the Appeals Board for a reasonable time for the convenience of a party or a witness, and no further notice shall be required.

d. After the hearing on the appeal, the Appeals Board may refer the matter back to the County Engineer for a new investigation and decision, may affirm the decision of the County Engineer, may approve a provisional permit, or may approve the application with or without conditions.

e. The decision of the Appeals Board shall be final.

CHAPTER VIII

DEFINITION OF TERMS

Definition of Terms

"Annular Seal" means that impermeable material that fills the space between the borehole and the well casing.

"Annular Space" means that separation distance between the primary and secondary levels of containment in a double-walled tank.

"Annular Thickness" means that distance between the borehole and the outside casing wall.

"Boring" means a hole created by a drilling device.

"Casing" means the conduit placed in a boring to establish a monitoring well.

"Continuous Monitoring" means either daily visual monitoring or on-going electronic monitoring.

"County Engineer" means the County Engineer of the County of Los Angeles, or his authorized deputy, agent, representative or inspector.

"Facility" means any one, or combination of, underground storage tanks used, or designed to be used, by a single business entity at a single location or site.

"Filter Pack" means that select uniformly graded material used to backfill the annular space around a well screen or perforated casing.

"Geohydrology" means conditions relating to the behavior of groundwater.

"Gravel Pack Envelope" means that properly graded material surrounding the annular space around a well screen or perforated casing.

"HMUSP" means Hazardous Materials Underground Storage Permit.

"LDI" meams Leak Detection Investigation.

"LDP" means Leak Detection Program.

"Monitoring Well" means a groundwater or vadose zone monitoring well established to perform continuous monitoring of a tank after a LDP has been completed.

"Perforated Casing" means well casing with holes or slots permitting the passage of fluids or vapors.

"Product Tight" means impervious to the hazardous material which is contained, or is to be contained, so as to prevent the seepage of hazardous material from the primary containment.

"Saturated Zone" means those geologic strata containing extractable groundwater.

"Secondary Containment" means the level of containment external to and separate from the primary containment.

"Stratum" means a mass of rock or earth of known type and depth lying between the beds of others.

"Suction Lysimeter" means a device for extracting liquid samples from the unsaturated zone.

"TAS" means Tank Assessment Statement.

"Test Boring" means borings established to obtain soil samples under the LDI.

"Test Well" means a groundwater monitoring well established to obtain groundwater samples under the LDI.

"TMP" means Tank Monitoring Program.

"Unsaturated Zone" means those underlying strata that are above the water table.

"Vadose Zone" means the unsaturated zone.

APPENDIX A

LOS ANGELES COUNTY CODE

TITLE 11, DIVISION 4

UNDERGROUND STORAGE OF HAZARDOUS MATERIALS

Chapter 11.70

Definitions

11.70.010 Definitions applicable to Division 4. The definitions in this chapter shall govern the construction of this Division 4 of Title 11 and any permits issued thereunder unless otherwise apparent from the context.

11.70.020 Abandoned. "Abandoned," when referring to a facility, means out of service and not safeguarded in compliance with this Division.

11.70.030 Appeals Board. "Appeals Board" means the Hazardous Materials Storage Appeals Board as established by Section 11.72.070 of this Division.

11.70.040 Board. "Board" means the Board of Supervisors of the County of Los Angeles.

11.70.050 County. "County" means the County of Los Angeles.

11.70.060 County Engineer. "County Engineer" means the County Engineer of the County of Los Angeles, or his authorized deputy, agent, representative or inspector.

11.70.070 County Health Officer. "County Health Officer" means the Director of Health Services of the County of Los Angeles, or his authorized deputy, agent, representative or inspector.

11.70.080 Facility. "Facility" means any one, or combination of, underground storage tanks used, or designed to be used, by a single business entity at a single location or site.

11.70.090 Forester and Fire Warden. "Forester and Fire Warden" means the Forester and Fire Warden and the Chief of the Fire Department of the County of Los Angeles, or his authorized deputy, agent, representative or inspector.

11.70.100 Hazardous material. "Hazardous material" means any material or substance which is subject to regulation pursuant to Section 11.74.010 of this Division. A mixture shall be deemed to be a hazardous material if it either is a waste and contains any material regulated pursuant to Section 11.74.010 of this Division, or is a nonwaste and contains one percent (1%) by volume or more of any material regulated pursuant to Section 11.74.010 of this Division.

11.70.110 Ordinance. "Ordinance" means an ordinance of the County of Los Angeles.

11.70.120 Permit. "Permit" means any Hazardous Materials Underground Storage Permit issued pursuant to this Division, as well as any additional approvals thereto.

11.70.130 Permit quantity limit. "Permit quantity limit" means the maximum amount of hazardous material that can be stored in a facility. Separate permit quantity limits will be set for each underground storage tank for which a permit is obtained in accordance with the requirements of this Division.

11.70.140 Permittee. "Permittee" means any person, firm, or corporation to whom a permit is issued pursuant to this Division and any authorized representative, agent or designee of such person, firm, or corporation.

11.70.150 Pipes. "Pipes" means pipeline systems which are used in connection with the storage of hazardous materials exclusively within the confines of a facility and which are not intended to transport hazardous materials in interstate or intrastate commerce or to transfer hazardous materials in bulk to or from a marine vessel.

11.70.160 Primary containment. "Primary containment" means the first level of containment, i.e. the inside portion of that container which comes into immediate contact on its inner surface with the hazardous material being contained.

11.70.170 Product-tight. "Product-tight" means impervious to the hazardous material which is contained, or is to be contained, so as to prevent the seepage of the hazardous material from the primary containment. To be product-tight, the container shall be made of a material that is not subject to physical or chemical deterioration by the hazadous material being contained.

11.70.180 Secondary containment. "Secondary containment" means the level of containment external to and separate from the primary containment.

11.70.190 Single-walled. "Single-walled" means construction with walls made of but one thickness of material. Laminated, coated, or clad materials shall be considered as single-walled.

11.70.195 Tank. "Tank" means any stationary device designed to contain an accumulation of hazardous materials where the primary containment is constructed of nonearthen materials.

11.70.200 Storage. "Storage" means the containment, handling or treatment of hazardous substances, either on a temporary basis or for a period of years. "Storage" does not mean the storage of hazardous wastes in an underground storage

tank if the person operating the tank has been issued a hazardous waste facilities permit by the California Department of Health Services pursuant to Health and Safety Code Section 25200 or granted interim status under Section 25200.5.

11.70.210 Trade Secret. "Trade secret" may include, but is not limited to, any formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information which is not patented, which is known only to certain individuals within a commercial concern who are using it to fabricate, produce, or compound an article of trade or a service having commercial value, and which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.

11.70.220 Unauthorized discharge. "Unauthorized discharge" means any release or emission of any hazardous material which does not conform to the provisions of this Division, unless such release is in accordance with the release regulations of the South Coast Air Quality Management District and California Air Resources Board, with a National Pollutant Discharge Elimination System Permit, with waste discharge requirements established by a Regional Water Quality Control Board pursuant to the Porter Cologne Water Quality Act, or with Title 20, Division 2 of this Code.

11.70.230 Underground storage tank. "Underground storage tank" means any tank, including pipes connected thereto, which is used for the storage of hazardous materials or substances and which is substantially or totally beneath the surface of the ground.

Chapter 11.72

General Provisions

11.72.010 Title for citation. The ordinance codified in Division 4 of Title 11 of this Code shall be known as the "Underground Storage of Hazardous Materials Ordinance," and may be referred to as such.

11.72.020 Purpose. The purpose of this Division is the protection of health, life, resources and property and the prevention of short and long term health hazards or environmental degradation through prevention and control of unauthorized discharges of hazardous materials from underground storage tanks.

11.72.030 General obligation - safety and care. A. No person, firm or corporation shall cause, suffer, or permit the storage of hazardous materials in underground storage tanks:

1. In a manner which violates a provision of this Division or any other local, federal, or state statute,

code, rule or regulation relating to hazardous materials; or

2. In a manner which causes an unauthorized discharge of hazardous materials or poses a significant risk of such unauthorized discharge.

B. The County Engineer shall have discretion to exempt an applicant from any specific requirement of this Division, other than the requirement for secondary containment and monitoring in underground storage facilities, except as provided in Section 11.74.030(C)(4), or to require applicant to meet additional or modified requirements, where such action would be appropriate and consistent with achieving the general obligation of this Division for protecting public health, safety, and welfare.

11.72.040 Specific obligation. A. Any person, firm, or corporation which stores in underground tanks any material regulated by Section 11.74.010 which is not excluded by Section 11.74.030(C)(4) shall obtain and keep current a Hazardous Materials Underground Storage Permit.

B. All such hazardous materials shall be contained in conformity with Chapter 11.74 of this Division.

C. The storage of such hazardous materials shall be in conformance with the conditions and limitations of a Hazardous Materials Underground Storage Permit.

11.72.050 Enforcement - County Engineer powers. The County Engineer shall enforce all the provisions of this Division 4, and for such purpose shall have the powers of a peace officer. Such powers shall not limit or otherwise affect the powers and duties of the County Health Officer or the Forester and Fire Warden.

11.72.060 Professional assistance for County Engineer determinations. Whenever the approval or satisfaction of the County Engineer may be required in this Division for a design, monitoring, testing or other technical submittal by an applicant or permittee, the County Engineer may, in his discretion, require such applicant or permittee, at the applicant's or permittee's sole cost and expense, to retain a suitable qualified independent engineer, or chemist, or other appropriate professional consultant, acceptable to the County Engineer, for the purpose of evaluating and rendering a professional opinion respecting the adequacy of such submittal to achieve the purposes of this Division. The County Engineer shall be entitled to rely on such evaluation and/or opinion of such engineer, chemist or professional consultant in making the relevant determinations provided for in this Division.

11.72.070 Appeals Board. In order to hear appeals provided for in this Division, there shall be and is hereby created an Appeals Board consisting of five members who are qualified to

pass on matters pertaining to underground storage of hazardous materials. The members of the Appeals Board shall be appointed by and hold office at the pleasure of the Board of Supervisors and may recommend such new legislation as deemed necessary. The Appeals Board shall adopt reasonable rules and regulations for conducting its investigations. The County Engineer shall be an ex officio nonvoting member and act as secretary. He shall keep a record of all proceedings and notify all parties concerned of the findings and decisions of the Appeals Board.

Chapter 11.74

Standards

11.74.010 Materials regulated. The materials regulated by this Division shall consist of the following:

A. Any material listed as a hazardous and/or extremely hazardous material or hazardous and/or extremely hazardous waste in Sections 66680 and 66685 of Title 22 of the California Administrative Code, as amended, whether such material is stored or handled in waste or nonwaste form; or

B. Any material which is listed on the list of Environmental Protection Agency (EPA) pollutants, 40 Code of Federal Regulations, Section 401.15, as amended; or

C. Any material which is classified by the National Fire Protection Association (NFPA) as either a flammable liquid, a Class II combustible liquid or a Class IIIA combustible liquid; or

D. Any material which is listed by the Director of the Department of Industrial Relations pursuant to Section 6382 of the California Labor Code; or

E. Any material which has been determined to be hazardous based upon any appraisal or assessment by or on behalf of the party storing this material in compliance with the requirements of the EPA or the California Department of Health Services, or which should have been, but was not, determined to be hazardous due to the deliberate failure of the party storing the material to comply with the requirements of the EPA and/or the California Department of Health Services; or

F. Any material which has been determined by the party storing it, through testing or other objective means, to be likely to create a significant potential or actual hazard to public, safety or welfare. This subsection shall not establish a requirement to test for the purposes of this Division.

11.74.020 Containment of hazardous materials. A. No person, firm or corporation shall store any hazardous materials regulated by this Division in underground storage tanks until a permit has been issued pursuant to this Division. No permit

shall be granted pursuant to this Division unless the applicant demonstrates to the satisfaction of the County Engineer, by the submission of appropriate plans and other information, that the design and construction of the facility will result in a suitable manner of underground storage for the hazardous material or materials to be contained therein.

B. All installation, construction, repair or modification, closure, and removal shall be to the satisfaction of the County Engineer. The County Engineer shall have the discretion to exempt an applicant from any secific requirement, other than the requirement of secondary containment for underground storage facilities and monitoring except as provided in Section 11.74.030(C)(4), or to impose reasonable additional or different requirements in order to better secure the purpose and general obligation of this Division for protection of public health, safety and welfare and prevention of short or long term health hazards or environmental degradation.

11.74.030 *New facilities*. A. *New underground storage* tanks. No person, firm or corporation shall construct or install any new underground storage tank or facility until a permit has been issued pursuant to this Division, unless a building permit for such new underground storage tank or facility was issued prior to the effective date of this Division.

B. Monitoring capability. All new facilities intended for the underground storage of hazardous materials shall be designed and constructed with a monitoring system capable of detecting that the hazardous material stored in the primary containment has entered the secondary containment. Visual inspection of the primary containment is the perferred method; however, other means of monitoring may be required by the County Engineer. Where secondary containment may be subject to the intrusion of water, a means of monitoring for such water shall be provided. Whenever monitoring devices are provided, they shall, where applicable, be connected to attention-getting visual and/or audible alarms.

C. Containment requirements. Primary and secondary levels of containment shall be required for all new facilities intended for the underground storage of hazardous materials unless exempted by the County Engineer.

1. All primary containment shall be product-tight.

2. Secondary containment.

a. All secondary containment shall be constructed of materials of sufficient thickness, density, and composition so as not to be structurally weakened as a result of contact with the discharged hazardous materials and so as to be capable of containing hazardous materials discharged from a primary containment for a period of time equal to or longer than the maximum anticipated time sufficient to

allow recovery of the discharged hazardous material.

b. In the case of installation with one primary containment, the secondary containment shall be large enough to contain at least 100% of the volume of the primary containment.

c. In the case of a facility with multiple primary containments, the secondary containment shall be large enough to contain 150% of the volume of the largest primary containment placed in it, or 10% of the aggregate internal volume of all primary containments in the facility, whichever is greater.

d. If the facility is open to rainfall, then the secondary containment must be able to additionally accommodate the volume of a twenty-four (24) hour rainfall as determined by a one-hundred (100) year storm history.

3. Laminated, coated, or clad materials shall be considered single-walled and shall not be construed to fullfull the requirements of both primary and secondary containment.

4. A variance from the requirement for secondary containment for an underground storage tank or facility may be granted by the County Engineer upon a written finding that, based on the special circumstances:

a. The requirement of secondary containment creates an unusual and particular hardship; and

b. An equivalent degree of protection is provided by the proposed alternative; and

c. If guidelines or standards have been established pursuant to Section 11.88.020, the proposed alternative has been specified as potentially appropriate for a variance in the guidelines or standards.

D. Overfill protection. Means of overfill protection may be required for any primary containment. This may be an overfill prevention device and/or an attention-getting high level alarm.

E. Separation of materials. Materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of a primary or secondary containment shall be separated in both the primary and secondary containment so as to avoid intermixing.

F. Drainage system. Drainage of precipitation from within a storage facility containing hazardous materials which shall be controlled in a manner approved by the County Engineer so as to

prevent hazardous materials from being discharged. No drainage system will be approved unless the flow of the drain can be controlled. Disposal of drainage shall comply with the requirements of Title 20, Division 2 of this Code.

11.74.040 Existing facilities. Any facility in existence as of the effective date of this Division, or any underground storage tank or facility for which a building permit or permit pursuant to Title 23 of this Code was issued prior to the effective date of this Division, which does not meet the standards of Section 11.74.030, may be issued a provisional permit pursuant to this Division as long as it is providing suitable underground storage for hazardous materials. In addition, such facility must be monitored in accordance with a plan approved by the County Engineer as set forth in this section. Such facility shall have one (1) year from the effective date of this ordinance to file a complete application for a permit including a monitoring plan.

A. A monitoring plan for each such facility shall be submitted to the County Engineer as part of the permit application.

B. Monitoring under such plan shall include visual inspection of the primary containment wherever practical; however, if the visual inspection is not practical, an alternative method of monitoring each facility on a semiannual or more frequent basis may be approved by the County Engineer.

C. Alternative method(s) of monitoring may include but are not limited to: pressure testing of piping systems, groundwater monitoring well(s) which are downgradient and adjacent to the storage facility; vapor analysis within the well(s) where appropriate; and analysis of the soil boring(s) at the time of initial installation of the well(s). The number of well(s), depth of well(s), and sampling frequency shall be approved by the County Engineer.

D. Such monitoring devices and methods, as approved by the County Engineer, shall be installed and operating within six (6) months of the issuance of a provisional permit in accordance with Section 11.80.050. The County Engineer may grant an extension of this compliance date; however, such extension shall not exceed one (1) additional year. The full term permit may be issued when compliance with this subsection has been achieved.

E. The continued use of, and permit approval for, existing facilities is subject to review and modification or termination by the County Engineer whenever there has been any unauthorized discharge. In determining whether continued underground storage in such facility is suitable, the County Engineer shall consider the age of the facility, the methods of containment, the methods of monitoring, the feasibility of the required retrofit, the concentration of the hazardous materials contained, the severity of potential unauthorized discharge, and the suitability of other long term preventive measures which meet the intent of this Division.

F. Existing facilities which are not approved in accordance with this section must be upgraded to comply with this Division or be closed in accordance with Section 11.80.070 within one (1) year of a decision not to issue a full term permit. An extension of time for compliance with this subsection, not to exceed one (1) additional year, may be granted by the County Engineer.

11.74.050 Out of service facilities. A. No facility shall be abandoned.

B. Facilities which are temporarily out of service, and are intended to be returned to use, must continue to be monitored and inspected.

C. Any facility which is not being monitored and inspected in accordance with this Division must be closed or removed in a manner pproved by the County Engineer in accordance with Section 11.80.070.

D. Any person, firm or corporation having an interest, including a leasehold interest, in real property and having reason to believe that an abandoned facility is located upon such property shall make a reasonable effort to locate such facility within six (6) months of the effective date of this Division.

E. Whenever an abandoned facility is located, a plan for the closing or removing or the upgrading and permitting of such facility shall be filed within ninety (90) days of its discovery. A closure plan shall conform to the standards specified in Section 11.80.070.

11.74.060 Monitoring, testing and inspection. Every permittee under this Division shall provide testing, monitoring (if applicable), and inspections in compliance with the permit and shall maintain records adequate to demonstrate compliance therewith.

11.74.070 Maintenance, repair or replacement. A. Permittee will carry out maintenance, ordinary upkeep, and minor repairs in a careful and safe manner. No permit will be required for such maintenance and upkeep.

B. Any substantial modification or repair of a facility other than minor repairs or emergency repairs shall be in accordance with plans to be submitted to the County Engineer and approved in accordance with Section 11.80.070(A) prior to the initiation of such work.

C. Permittee may make emergency repairs to a facility in advance of seeking an additional permit approval whenever an immediate repair is required to prevent or contain an unauthorized discharge or to protect the integrity of the containment. However, within five (5) working days after such emergency repairs have been started, permittee shall seek approval pursuant to Section 11.80.070(A) by submitting drawings or other information adequate to describe the repairs to the County Engineer.

D. Replacement of any facility must be in accordance with the new installation standards of Section 11.74.030.

11.74.080 Emergency equipment. Emergency equipment as may be required by the Forester and Fire Warden shall be provided. Such equipment shall be regularly tested and adequately maintained.

11.74.090 Labeling and posting of facilities. All underground storage tanks within a facility shall be labeled in accordance with California Administrative Code, Title 8, Article 112.

Chapter 11.76

Unauthorized Discharge of Hazardous Materials

11.76.010 Responsibility for unauthorized discharge. As soon as any person in charge of a facility or responsible for emergency response for a facility has knowledge of any confirmed or unconfirmed unauthorized discharge of a hazardous material, such person shall take all necessary steps to ensure the discovery and containment and cleanup of such discharge and shall notify the County Health Officer of the occurrence as required by this section.

A. Confirmed unauthorized disharge.

1. Recordable unauthorized discharge. Any recordable unauthorized discharge shall be contained and safely disposed of in an appropriate manner by permittee and such occurrence and the response thereto shall be recorded in the permittee's monitoring records. A recordable unauthorized discharge is any unauthorized the following criteria:

a. The discharge is from a primary containment to a secondary containment or to a rigid above ground surface covering capable of containing the discharge until cleanup of the hazardous material is completed; and

b. The permittee is able to adequately clean up the discharge before it escapes from such secondary containment or such above ground surface, except that if the cleanup requires more than eight (8) hours, it becomes a reportable discharge in accordance with subsection 2 below.

c. There is no increase in the hazard of fire or explosion, nor is there any production of a flammable or poisonous gas, nor is there any deterioration of such secondary containment or such regid above ground surface covering.

2. Reportable unauthorized discharge. Any unauthorized discharge which escapes from the secondary containment, increases the hazard of fire or explosion, or causes any deterioration of the secondary containment of the underground storage tank must be reported to the County Health Officer immediately. The reporting party shall provide information to the County Health Officer relating to the ability of the permittee to contain and dispose of the hazardous material, the estimated time it will take to complete containment and disposal, and the degree of hazard created. The County Health Officer may verify that the hazardous material is being contained and appropriately disposed of. The County Health Officer, at any time upon a determination that the permittee is not adequately containing and disposing of such hazardous material, shall have the power and authority to undertake and direct an emergency response in order to protect the public health and/or safety.

B. *Unconfirmed unauthorized discharge.*

1. Indication of loss in inventory records. Whenever a material balance or other inventory record, employed as a monitoring technique under the permit, indicates a loss of hazardous material, and no unauthorized discharge has been confirmed by other means, permittee shall have five (5) working days to determine whether or not there has been an unauthorized discharge. If before the end of such period, it is determined that there has been no unauthorized discharge, an entry explaining the occurrence shall be made in permittee's monitoring records. Where permittee has not been able, within such period, to determine that there is deemed no unauthorized discharge, an unauthorized discharge is deemed confirmed and permittee shall proceed in accordance with subsection 11.76.010(A)(2) above.

2. Test results. Whenever any test results suggest a possible unauthorized discharge, and no unauthorized discharge has been confirmed by other means, the permittee shall have five (5) working days to retest. If second test results obtained within that period establish that there has been no unauthorized discharge, the results of both tests shall be recorded in permittee's monitoring records. If it has not been established within such period that there has been no unauthorized discharge, an unauthorized discharge is deemed confirmed and permittee shall proceed in accordance with subsection 11.76.010(A)(2) above.

11.76.020 Cleanup responsibility. Any person, firm or corporation responsible for storing the hazardous material shall institute and complete all actions necessary to remedy the effects of any unauthorized discharge, whether sudden or gradual. The County shall undertake actions to remedy the effects of such

unauthorized discharge itself only if it determines that it is reasonably necessary under the circumstances for the County to do so. The responsible party shall be liable to reimburse the County for all costs incurred by the County in remedying the effects of such unauthorized discharge, including the costs of fighting fires, to the extent allowed by law. This responsibility is not conditioned upon evidence of willfulness or negligence of the party storing the hazardous material(s) in causing or allowing such discharge.

11.76.030 Idemnification. The permittee shall indemnify, hold harmless and defend the County against any claim, cause of action, disability, loss, liability, damage, cost or expense, howsoever arising, which occurs by reason of an unauthorized discharge or containment and cleanup of an unauthorized discharge in connection with pemittee's operations under this permit, except as arises from the County's sole willful act or sole active negligence.

Chapter 11.78

Inspections and Records

11.78.010 Inspections by the County Engineer. The County Engineer may conduct inspections, at his discretion, for the purpose of ascertaining compliance with this Division and causing to be corrected any conditions which would constitute any violation of this Division or of any other statute, code, rule or regulation affecting the underground storage of hazardous materials.

11.78.020 Right of entry. Whenever necessary for the purpose of investigating or enforcing the provisions of this Division, or whenever the County Engineer, County Health Officer or Forester and Fire Warden has reasonable cause to believe that there exists in any structure or upon any premises, any condition which constitutes a violation of this Division, said officer may enter such structure or premises at all reasonable times to inspect the same, or to perform any duty imposed upon him by law; provided that if such structure or premises be occupied, the officer shall first present proper credentials and request entry, and further provided, that if such structure or premises is unoccupied, the officer shall first make a reasonable attempt to contact a responsible person from such a firm or corporation and request entry, except in emergency circumstances. If such entry is refused, the officer seeking entry shall have recourse to every remedy provided by law to secure entry.

11.78.030 Inspections by permittee. The permittee shall conduct regular inspections of its own facilities as specified in its permit to assure compliance with this Division and shall maintain logs or file reports in accordance with its permit. In no event shall the permittee inspect its facility less than once every three (3) years. The person conducting such inspections shall be qualified to conduct such inspections.

11.78.040 Special inspections. In addition to the inspections specified above, the County Engineer may require the periodic employment of special inspectors to conduct an audit or assessment of permittee's facility to make a hazardous material safety evaluation and to determine compliance with the provisions of this Division.

A. The special inspector shall be a qualified person or firm who shall demonstrate expertise to the satisfaction of the County Engineer.

B. The special inspection report shall include an evaluation of the facilities and recommendations consistent with the provisions of this Division where appropriate. A copy of the report shall be filed with the County Engineer at the same time that it is submitted to the permittee.

C. Permittee shall, within thirty (30) days of said report, file with the County Engineer a plan to implement all recommendations, or shall demonstrate to the satisfaction of the County Engineer why such recommendations shall not be implemented.

11.78.045 Demonstration to County Engineer. The County Engineer may require that any regular or special inspection by the permittee pursuant to this Chapter be made in the presence of a representative of the County Engineer. The County Engineer may further require advance notice of not less than seventy-two (72) hours as to the availability of equipment, material and personnel required to conduct such inspections.

11.78.050 Maintenance of Records. All records required by this Division shall be maintained by the permittee for a period of not less than three (3) years. Said records shall be made available to the County Engineer, County Health Officer or Forester and Fire Warden during normal working hours and at any time upon reasonable notice.

Chapter 11.80

Permits

11.80.010 Permit. Any person, firm, or corporation which stores any hazardous material in underground storage tanks shall obtain and keep current a permit issued pursuant to this Division. One such permit shall be issued for a single facility. Additional approvals shall be obtained for any underground storage tank thereafter connected, installed, constructed, repaired as required by Section 11.74.070, substantially modified, replaced, closed, or removed, or for any change or addition in hazardous materials stored, not in accordance with the prior permit.

11.80.020 Application for permit. A. Application for a new, amended, or renewed permit or an additional approval shall be made to the County Engineer on the form provided by the County Engineer. The application form shall include, but not be limited to, requests for the following information:

1. A description of the construction of the underground storage tank(s).

2. A list of all the hazardous materials which are or will be stored in the underground storage tank(s), specifying the hazardous materials for each underground storage tank.

3. A description of the monitoring program for the underground storage tank(s).

4. The name and address of the person, firm, or corporation which owns the underground storage tank(s) and, if different, the name and address of the person who operates the underground storage tank(s).

5. The address of the facility at which the underground storage tank(s) are located.

6. The name of the person making the application.

7. The name and 24-hour phone number of the contact person in the event of an emergency involving the facility.

8. If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the tank.

B. In addition to the above information required by such form, applicant shall submit such additional information as may be required by the County Engineer and construction plans, if any, in conformity with Section 11.74.020. Applicant shall specify the permit quantity limit request to be permitted for each facility.

11.80.030 Investigation. Upon receipt of an application for a new or renewed permit the County Engineer may make such investigation of the applicant and the proposed facility or activity as he deems necessary to carry out the purposes of this Division.

11.80.040 Approval of permit. A permit shall not be approved until the County Engineer is satisfied that the storage approved conforms to the provisions of this Division.

11.80.050 Provisional permit. If the County Engineer finds that the proposal for an existing facility does not completely conform to the provisions of this Division, the County Engineer may approve a provisional permit, subject to conditions to be imposed by the County Engineer, when such a provisional permit is feasible and does not appear to be detrimental to the public interest. The applicant shall be informed in writing of the reasons why a full term permit was not issued.

11.80.060 Issuance of permits. A. Upon the approval of a provisional or full term permit permit by the County Engineer and upon the payment of any applicable fee, the County Engineer shall issue and deliver the permit to the applicant. Such permit shall contain the following information:

1. The name and address of the permittee;

2. The address of the facility for which the permit is issued;

3. Authorization of the underground storage tank(s) approved under the permit, and the permit quantity limit(s);

4. The date the permit is effective;

5. The date of expiration of the permit;

6. Where applicable, a designation that the permit is provisional;

7. An approved monitoring plan including the provision for a written report to the County Engineer, at least annually, which will detail any changes in the usage of any underground storage tanks, including the storage of new hazardous materials, changes in monitoring procedure and unauthorized release occurrences, as defined in this Division.

8. Any special conditions or limitations of the permit.

B. The County Engineer shall keep a record of all permits issued and all conditions attached thereto.

11.80.070 Additional approvals. A. When a request for an additional approval is filed as required by Section 11.80.010, the procedures set forth in this Division for an application for a permit shall also apply to an application for an additional approval. Each application for an additional approval shall be accompanied by appropriate supporting information.

B. If the additional approval request is for closure of a facility, the permittee shall apply for approval to close such facility not less than thirty (30) days prior to the termination of the underground storage of hazardous materials at the facility. Such closure shall be in accordance with a closure plan which describes procedures for terminating the storage of hazardous materials in each underground storage tank in a manner that:

1. Minimizes the need for further maintenance; and

2. Controls to the extent that a threat to public health or safety or to the environment from residual hazardous materials in the facility is minimized or eliminated; and

3. Demonstrates that hazardous materials that were stored in the facility and/or contaminated soils or groundwater caused by any unauthorized discharge, will be removed, disposed of, neutralized, or reused in an appropriate manner. The demonstration shall be in the form of reports by a certified laboratory, professional engineer, engineering geologist, or as required by the County Engineer. The thirty (30) day period may be waived by the County Engineer if there are special circumstances requiring such waiver.

11.80.080 Term of permit. A permit may be issued for a term not to exceed five (5) years, except that a provisional permit may be issued for any period of time up to six (6) months.

11.80.090 Permit renewal or extension. Every application for the renewal of a permit or extension of a provisional permit shall be made at least (30) days prior to the expiration date of such permit. If a timely application for renewal has been submitted, the permit shall remain in effect until the County Engineer has made his decision pursuant to Section 11.80.100 and any administrative appeal pursuant to this Chapter has been exhausted.

11.80.100 Decision by County Engineer. The County Engineer shall grant or deny a permit, additional approval, or renewal within ninety (90) days after the application has been completed, all required fees have been paid and the California Environmental Quality Act (CEQA) has been complied with. This time limit may be further extended by mutual agreement between the County Engineer and the applicant. The County Engineer shall give the applicant written notice of his decision.

11.80.110 Grounds for denial. A permit shall be denied if the applicant fails to demonstrate adequate conformity to the provisions of this Division. In addition, a permit can be denied for any of the grounds upon which the permit would be subject to revocation pursuant to Chapter 11.84.

11.80.120 Appeal to Appeals Board. Any person dissatisfied with the decision of the County Engineer may appeal the decision, in writing, to the Appeals Board, setting forth with particularity the ground or grounds for the appeal. Such appeal shall be submitted within thirty (30) days after notice of the decision has been given pursuant to Section 11.80.150.

11.80.130 Notice of Hearing. The Appeals Board shall set a time and place for the hearing on the appeal and shall notify the appellant, applicant or permittee, and any other interested persons who have requested such notice, in writing, of such date and time not less than ten (10) days prior to the hearing.

11.80.140 Hearing by Appeals Board. At the hearing, the Appeals Board shall consider all competent evidence offered by any person pertaining to the decision being appealed. The

COUNTY OF LOS ANGELES • DEPARTMENT OF HEALTH SERVICES

ENVIRONMENTAL MANAGEMENT

POLICY and OPERATIONS MANUAL

SUBJECT: WATER WELL PERMIT POLICY

NO. 510.08

PROGRAM APPLICATION: WATER, SEWERAGE AND SUBDIVISION CONTROL AND MOUNTAIN AND RURAL SANITATION PROGRAMS

PURPOSE: An objective of the County of Los Angeles Department of Health Services is to protect the safety and quality of public and consumer domestic water supplies.

In order to protect groundwater supplies, it is necessary that certain wells drilled or destroyed shall be done so under permit by this Department so as to protect the groundwater and to maintain a permanent record of well locations.

This policy specifies when well permits are required and when they are not required for the following types of wells: water wells, observation/monitoring wells, well reconstruction/renovation/conversion, well destruction, dewatering/stabilizing wells, oil and gas wells or geothermal wells, wells under the jurisdiction of the State Division of Oil and Gas, recharge, injection or air conditioning wells under the jurisdiction of Regional Water Quality Control Board.

POLICY: WELL PERMITS ARE REQUIRED FOR THE FOLLOWING:

WATER WELLS - Any well constructed for the purpose of extracting water for domestic or irrigation purposes, whether for private, public, agricultural, or industrial use shall require a well permit from the County Department of Health Services.

OBSERVATION/MONITORING WELLS - Wells constructed for the purpose of observing or monitoring groundwater conditions including: wells intended for remedial investigation of suspected/confirmed contamination

EFFECTIVE DATE: June 1, 1984

SUPERSEDES:

APPROVED:

which penetrate groundwater aquifers, wells installed for the express purpose of monitoring and sampling an underground aquifer, including monitoring wells required in connection with the County's Underground Tank Monitoring Program shall require a well permit from the County Department of Health Services.

CATHODIC PROTECTION WELLS - Any well constructed at a depth greater than 45 feet for cathodic protection of pipelines shall require a well permit from the County Department of Health Services.

RECONSTRUCTION/RENOVATION/CONVERSION OR WELLS - Reconstruction or renovation of an existing water well and including oil, gas, and geothermal wells being converted to use as water wells shall require a well permit from the County Department of Health Services. This also includes conversion of test wells to observation, monitoring wells or production wells.

WELL DESTRUCTION - Destruction of any well requiring a well permit for construction shall require a well permit for destruction of the well. Destruction of test holes or exploration holes will also require a well permit for their destruction from the County Department of Health Services. (See Test Wells, below).

TEST WELLS - Wells constructed for the purpose of obtaining the information needed to design a well prior to its construction. Such wells are not to be confused with "test holes" or "exploration holes" which are temporary in nature (i.e., uncased excavations whose purpose is the immediate determination of existing geologic and hydrologic conditions). Test wells are cased and can be converted to observation wells or monitoring wells and under certain circumstances to production wells.

WELL PERMITS ARE NOT REQUIRED FOR THE FOLLOWING:

DEWATERING/STABILIZING WELLS - Wells installed for the purpose of dewatering excavations during construction or stabilizing hillsides and earth embankments shall not require a well permit.

OBSERVATION WELLS/MONITORING - Shallow observation/monitoring wells (less than 45 feet) not intended to penetrate the water table but for vapor detection of leaking underground storage of hazardous substances in connection with the County's Underground Tank Monitoring program or remedial investigations shall not require a well permit. Should the well unexpectedly penetrate a subsurface aquifer, the County Department of Health Services shall be contacted by the contractor/driller and/or the County Engineer for a site evaluation of the observation well for the purpose of evaluating the need for standard measures to protect the aquifer and for a well permit.

OIL AND GAS WELLS OR GEOTHERMAL WELLS - Wells constructed under the jurisdiction of the Department of Conservation, Division of Oil and Gas.

RECHARGE, INJECTION OR AIR CONDITIONING WELLS - Wells constructed to introduce water into the ground as a means of replenishing groundwater basins, repelling the intrusion of seawater, disposing of wastewater, or returning to the ground water which has been used as a coolant in air conditioning processes. These wells are constructed under the jurisdiction of Regional Water Quality Control Boards under the authority of the California Water Code and California Public Resources Code. They also include "dry" wells, "drainage" wells and "sewer" wells.

REFERENCE: Water Well Standards: State of California Bulletin 74-81, December, 1981.

CROSS REFERENCE: Service Request Application and Fee Collection - Policy No. 115.01

hearing may be continued by the Appeals Board for a reasonable time for the convenience of a party or a witness and no further notice shall be required.

11.80.150 Hearing notices. All notices required by this Chapter shall be sent by first class mail to the applicant or permittee at the address given on the application or permit or delivered to the applicant or permittee personally.

11.80.160 Disposition of appeal. After the hearing on the appeal, the Appeals Board may refer the matter back to the County Engineer for a new investigation and decision, may affirm the decision of the County Engineer, may approve a provisional permit as provided in Section 11.80.050 or may approve the application with or without conditions. The decision of the Appeals Board shall be final.

11.80.170 Transfer of permit. The permit may be transferred to new owners of the same business only if the new owners accept responsibility for all obligations under this Division at the time of the transfer of the business, document such transfer on a form provided by the County Engineer within thirty (30) days of transfer of ownership of the business and pay all fees as required by Chapter 11.82. Such transfer shall be subject to the approval of the County Engineer.

11.80.180 Authority after suspension, revocation or expiration. The suspension, revocation or expiration of a permit issued under this Division shall not prevent any proceedings to investigate such permit, any remedial action against such permittee or any proceeding against such permittee.

11.80.190 Return of permit. In the event that a permit issued under the provisions of this Division is suspended or revoked, the permittee shall forward it to the County Engineer not later than the end of the third business day after notification of such suspension or revocation.

Chapter 11.82

Fees and Deposits

11.82.010 Permit application fee. The County Engineer shall collect a permit application fee as set forth in the schedule below, for each application received. Such fee shall be separate and apart from any fee or deposit collected or imposed under provisions of the Fire Code, set out in Title 23, or other County ordinance or regulation, or by reason of any license, agreement or contract between the applicant and other public agency. Such application fee shall not refundable even though the application be denied or the permittee discontinues the activity or use of a facility prior to the expiration of the term or that the permit is suspended or revoked prior to the expiration of the term.

Permit Application Fee Schedule

Primary Containers Within Facility	Facility Permit Class	Applicant Fee
1-5	A	$ 76
6-20	B	$152
21 or more	C	$228
Renewal	All	$ 76
Transfer	All	$ 76

11.82.015 Additional approval fee. The County Engineer shall collect a fee of $38 for each additional approval as required by Section 11.80.010. Such additional approval fee shall not be refundable even though the request be denied or the permittee fails to go forth with the proposed project.

11.82.020 Annual inspection and monitoring fee. A. For each full term and provisional permit issued by the County Engineer, an annual inspection and monitoring fee as set forth in the schedule below shall be due and payable to the County Engineer annually in advance, on a billing date to be determined by the County Engineer.

Annual Inspection and Monitoring Fee Schedule

Facility Permit Class	Annual Inspection and Monitoring Fee
A	$ 37
B	$ 74
C	$111

B. Immediately upon issuance of a new permit the permittee shall be billed a percentage of the inspection fee determined by the procedure above remaining in the billing period as scheduled below:

Days Remaining in Billing Period	Percent of Fee Due
1-60	0%
61-120	25%
121-210	50%
211-300	75%
301-365	100%

11.82.030 Permit and inspection and monitoring fees - payment time - penalties for delinquency. All fees required by Section 11.82.010 or Section 11.82.020 of this Code shall be due and payable on the billing date established by the County Engineer. Fees not paid within 30 calendar days from the billing date shall be considered delinquent. Delinquent fees shall be subject to a 10 percent penalty fee for each 30 day period beyond the billing

date that the fee is due. Permits for which the inspection fee is delinquent for 90 days or more are subject to suspension as provided in Section 11.84.010.

Chapter 11.84

Remedial Action

11.84.010 Grounds for remedial action. A permit may be subjected to remedial action for any of the following causes, arising from the acts or omissions of the permittee, either before or after a permit is issued:

A. Fraud, willful misrepresentation, or any willful ~~incurate~~ inaccurate or false statement in applying for a new or renewed permit;

B. Fraud, willful misrepresentation, or any willful inaccurate or false statement in any report required by this Division;

C. Failure to abate, correct or rectify any noncompliance within the time specified in the notice of noncompliance;

D. Failure to correct conditions constituting an unreasonable risk of an unauthorized discharge of hazardous materials within a reasonable time after notice from a governmental entity other than the County;

E. Failure to abide by the remedial action imposed by the County Engineer.

F. Failure to pay fees as established by Chapter 11.82.

11.84.020 Notice of noncompliance. Unless the County Engineer finds that an immediate suspension under Section 11.84.050 is necessary to protect the public health or safety from imminent danger, the County Engineer shall issue a notice of noncompliance:

A. For failure to comply with the provisions of this Division or any conditions or limitations of the permit; or

B. Before instituting remedial action pursuant to Section 11.84.010. Such notice shall be sent by first class mail to permittee. If the noncompliance is not abated, corrected, or rectified within the time specified in the notice, remedial action may be taken.

11.84.030 Rights of permittee following notice of noncompliance. Within the time specified in the notice of noncompliance, the permittee shall:

A. Correct and remedy the conditions so specified, to the satisfaction of the County Engineer; or

B. File with the Appeals Board a denial that all of the conditions so specified exist, request a public hearing, and correct the conditions which the permittee admits do exist; or

C. File with the Appeals Board a denial that any of the conditions so specified exist and request a public hearing.

11.84.040 Notice of hearing. Upon receipt of a request for hearing, a notice of hearing shall be given to the permittee by the County Engineer, in writing, setting forth the time and place of the hearing, the ground or grounds upon which the remedial action is based, the pertinent Code section or sections, and a brief statement of the factual matters in support thereof. The notice shall be given at least ten (10) days prior to the hearing date.

11.84.050 Suspension prior to hearing. Whenever the County Engineer finds that suspension of a permit prior to a hearing for remedial action is necessary to protect the public health or safety from imminent danger, the County Enginer may immediate suspend any permit pending the hearing for remedial action. The County Engineer shall immediately notify the permittee of such suspension by having a written notice of the suspension personally served on the permittee.

11.84.060 Remedial action. If the Appeals Board, after the hearing, finds that cause exists for remedial action, the Appeals Board shall impose one or more of the following:

A. A warning;

B. An order to correct the particular noncompliance specified in the notice issued pursuant to Section 11.84.020;

C. A revocation of the permit for the facility and approval of a provisional permit;

D. Suspension of the permit for the facility for a specified period not to exceed six (6) months;

E. Modification or addition of conditions of the permit;

F. Revocation of the permit with no reapplication permitted for a specified period not to exceed five (5) years. If the grounds for remedial action are based on Section 11,84.010(C), (D), or (E) and if such grounds are limited to one underground storage tank, the remedial action taken shall be limited to that underground storage tank.

11.84.070 Decision of Appeals Board. The Appeals Board shall render a written decision, stating the findings upon which the decision is based and the action taken, if any. The decision of the Appeals Board shall be final.

Chapter 11.86

Enforcement

11.86.010 Civil penalties. A. Any operator of an underground storage tank shall be liable for a civil penalty of not less than five hundred dollars ($500) or more than five thousand dollars ($5,000) per day for any of the following:

1. Operates an underground storage tank which has not been issued a permit.

2. Fails to monitor the underground storage tank, as required by the permit.

3. Fails to maintain records, as required by this Division.

4. Fails to report an unauthorized release, as required by Section 11.76.010.

5. Fails to properly close an underground storage tank in accordance with the provisions of this Division.

B. Any owner of an underground storage tank shall be liable for a civil penalty of not less than five hundred dollars ($500) or more than five thousand dollars ($5,000) per day for any of the following:

1. Failure to obtain a permit as specified by this Division.

2. Failure to repair an underground tank in accordance with the provisions of this Division.

3. Abandonment or improper closure of any underground tank subject to the provisions of this Division.

4. Knowing failure to take reasonable and necessary steps to assure compliance with this Division by the operator of an underground tank.

11.86.020 Violation a misdemeanor. A. Any person, firm, or corporation who violates any provision of this Division, or who fails to take corrective action upon becoming aware of an unauthorized discharge, or who fails to comply with a notice of noncompliance within the time specified or who continues to operate a facility upon suspension or revocation of a permit shall be guilty of a misdemeanor, and the County Engineer may cause such person, firm or corporation to be prosecuted as a violator of this Code. Each day that the conditions in this section continue to exist shall be a separate violation.

B. Any person, firm, or corporation who falsifies any monitoring records required by this Division, or knowingly fails to

report an unauthorized release, shall, upon conviction, be punished by a fine of not less than five thousand dollars ($5,000) or more than ten thousand dollars ($10,000) or by imprisonment in the County jail for not to exceed one year or by both that fine and imprisonment.

11.86.030 Penalties not exclusive. Penalties under this section are in addition to, and do not supersede or limit, any and all other penalties or remedies provided by law.

Chapter 11.88

Miscellaneous

11.88.010 Disclaimer of liability. The degree of protection required by this Division is considered resonable for regulatory purposes. The standards set forth herein are miminal standards and this Division does not imply that compliance will ensure that there will be no unauthorized discharge of hazardous material. This Division shall not create liability on the part of the County, any officer or employee thereof for any damages that result from reliance on this Division or any administrative decision lawfully made thereunder. All persons handling, storing, using, processing, and disposing of hazardous materials within the County should be and are advised to determine to their own satisfaction the level of protection in addition to that required by this Division necessary or desirable to ensure that there is no unauthorized discharge or hazardous materials.

11.88.020 Guidelines and standards. Guidelines and standards may be established by the County Engineer and shall be maintained in the office of the County Engineer and shall be available to the public. Such guidelines and standards, in the areas addressed therein, shall serve as an interpretation of this Division.

11.88.030 Trade secrets. A. If an applicant or permittee believes that a request for information made by either the application form or otherwise pursuant to this Division involves the release of a trade secret, the applicant or permittee shall so notify the County Engineer in writing. As used herein, trade secret shall have the meaning given to it by Section 6254(K) of the Government Code.

B. Subject to the provisions of this section, the County Engineer shall protect from disclosure any trade secret coming into his possession when requested to do so in writing by the applicant or permittee. Any such trade secret shall not be disclosed to anyone without the consent of the applicant or permittee except:

1. To an officer or employee of the County, the State of California, or the United States of America, in connection with the official duties of such officer or employee under any law for the protection of health, or

to contractors with the County and their employees, if in the opinion of the County Engineer such disclosure is necessary and required for the satisfactory performance of a contract for performance of work or for protection of health; or

2. To any physician where the physican determines that such information is necessary to the medical treatment of his or her patient.

C. Information certified by appropriate officials of the United States, as necessarily kept secret for national defense purposes, shall be accorded the full protections against disclosure as specified by such offical or in accordance with the laws of the United States.

D. The provisions of this section shall not permit an applicant or permittee to refuse to disclose information required pursuant to this Division to the County Engineer.

E. The confidential treatment of the identity of such trade secret disclosed to the County does not apply where there has been any unauthorized discharge related to such trade secret material which is reportable in compliance with Chapter 11.76 or where such disclosure arises out of any official emergency response relating to the facility involving such trade secret information by public safety personnel of the County.

11.88.040 Duties are discretionary. Notwithstanding any other provision of this Code, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the County, its elected or appointed officers, employees, or agents, such words establish a discretionary responsibility or duty requiring the exercise of judgment and discretion.

11.88.050 Conflict with other laws. Notwithstanding any other provision of this Division:

A. If the facility is required to have an Industrial Waste Disposal Permit pursuant to Title 20, Division 2 of this Code, an Industrial Wastewater Discharge Permit pursuant to the Wastewater Ordinance of the Sanitation Districts of Los Angeles County, or an industrial waste disposal permit from any other sewering agency within the of Los Angeles, it shall be exempted from the provisions of this Division provided the conditions and limitations of the Industrial Waste Disposal Permit satisfy the requirements of this Division and the County Engineer finds that the facility does not pose a threat to water quality.

B. No provision of this Division shall be construed to supersede any other provisions of this County Code.

APPENDIX B

LOCAL UNDERGROUND STORAGE OF HAZARDOUS MATERIALS PROGRAMS IN THE COUNTY OF LOS ANGELES

The information on Table I was compiled from notification to the County Engineer as of the date of publication of the County guidelines. Facilities located within cities that have not established a local program and so notified the County Engineer will be subject to regulation by the County. Cities may, however, establish a program at any time by Ordinance and notification to the County Engineer of their intent to regulate under the state standards.

Owners of facilities within cities that are not within the Los Angeles County Fire Department (LACFD) jurisdiction and have not notified the County Engineer (CE) of their intentions should check with their local Fire Department and Building Department to determine if a local program has been established. Contact agencies for local programs in Los Angeles County are presented in Table II.

TABLE 1

LOCAL PROGRAM STATUS
UNDERGROUND STORAGE OF HAZARDOUS MATERIALS

City	In LACFD	CE Notified No Program	Local Program	Ordinance Before 1-84
Agoura Hills	X			
Alhambra				
Arcadia				
Artesia	X			
Avalon				
Azusa	X	X		
Baldwin Park	X			
Bell	X			
Bell Gardens	X			
Bellflower	X			
Beverly Hills		Note #1		
Bradbury	X			
Burbank			Note #2	
Carson	X	Note #1		
Cerritos	X			
Claremont	X			
Commerce	X	X		
Compton		Note #1		
Covina		X		
Cudahy	X			
Culver City		X		
Downey				
Duarte	X			
El Monte		X		
El Segundo		X		
Gardena			X	X
Glendale			X	X
Glendora	X	X		
Hawaiian Gardens	X			
Hawthorne				
Hermosa Beach				
Hidden Hills	X			
Huntington Park	X	X		
Industry	X			
Inglewood				
Irwindale	X			
La Canada-Flintridge	X			
La Habra Heights				
La Mirada	X			
La Puente	X			
La Verne				
Lakewood	X			
Lancaster	X			
Lawndale	X			
Lomita	X			
Long Beach			X	X

City	In LACFD	CE Notified No Program	Local Program	Ordinance Before 1-84
Los Angeles			X	X
Lynwood				
Manhattan Beach		X		
Maywood	X			
Monrovia				
Montebello		X		
Monterey Park				
Norwalk	X			
Palmdale	X			
Palos Verdes Estates				
Paramount	X			
Pasadena			Note #2	
Pico Rivera	X			
Pomona		Note #1		
Ranch Palos Verdes	X			
Redondo Beach		X		
Rolling Hills	X			
Rolling Hills Estates	X			
Rosemead	X			
San Dimas	X			
San Fernando				
San Gabriel				
San Marino				
Santa Fe Springs		Note #1		
Santa Monica			X	X
Sierra Madre				
Signal Hill	X			
South El Monte	X			
South Gate	X		Note #2	
South Pasadena				
Temple City	X	X		
Torrance			X	X
Vernon			X	X
Walnut	X			X
West Covina				
Westlake Village	X			
Whittier	X			

Note #1. Verbal notification only.
Note #2. City has intended verbally that it may establish a program.

TABLE II
LOCAL PROGRAM AGENCIES

County of Los Angeles
Department of County Engineer-Facilities
Sanitation Division
550 South Vermont Avenue
Los Angeles, CA 90012

Telephone:	New Construction	(213) 738-2463
	Existing facilities	(213) 738-2517
	Permits & forms	(213) 738-2462
	General Information	(213) 738-2533

City of Gardena
Fire Department
1650 W. 162nd Street
Gardena, CA 90247-3732
Telephone: (213) 327-0220 - Ext. 242

City of Glendale
Fire Department
Fire Prevention Bureau
633 E. Broadway Ave., Room 303
Glendale, CA 91205
Telephone: (818) 956-4810

City of Long Beach
Department of Fire
Bureau of Fire Prevention
400 W. Broadway, Room 264
Long Beach, CA 90802
Telephone: (213) 435-2458

City of Los Angeles
Department of Fire
Bureau of Fire Prevention
200 North Main Street
Los Angeles, CA 90012
Telephone: (213) 485-5970

City of Santa Monica
Department of General Services
1685 Main Street
Santa Monica, CA 90401
Telephone: (213) 393-9975 - Ext. 224

City of Torrance
Fire Department
1701 Crenshaw Boulevard
Torrance, CA 90501
Telephone: (213) 618-2910

City of Vernon
Health and Environmental Control
4305 Santa Fe Avenue
Vernon, CA 90058
Telephone: (213) 583-8811

APPENDIX C

LOS ANGELES COUNTY FIRE DEPARTMENT

FIRE PREVENTION BUREAU

INSPECTION GUIDE NO. 6 December 18, 1980

FLAMMABLE LIQUID UNDERGROUND INSTALLATIONS

The following regulations are Department policy and extracts from the Fire Code. Requests for inspections shall be made 48 hours in advance.

TANKS

New: Shall be constructed according to Section 15.213 or bear the label of the Underwriters Laboratory, the ASME Code stamp, or the API monogram.

Used: Will be permitted if they comply with the above and the following:

A. Must be inspected and approved for installation by a Fire Prevention Bureau inspector from this Department. Only tanks to be installed within the area served by this Department shall be inspected. All inspections shall be conducted within the County of Los Angeles. Tank approval shall be valid for a period of 90 days.

B. Tank shall be identified by:

-name of manufacturer
-date of manufacture
-capacity
-gauge of shell
-Underwriters Laboratory number
-L.A. Fire Department number, if available

C. Tank must be sufficiently cleaned to enable the inspector to examine all portions of the outer shell. At the discretion of the inspector, sandblasting may be required. All equipment necessary to perform any and all phases of the tests shall be supplied by the installer.

D. Pits and corrosion shall not exceed 10% depth of the original shell thickness. Pitted areas may be built up by welding to return shell to the original thickness. If more than 10% of the surface area of the tank requires welding, the tank shall be deemed unfit for installation.

NOTE: INSERT THIS INSPECTION GUIDE IN FIRE PREVENTION MANUAL. DESTROY PREVIOUS INSPECTION GUIDE NO. 6 DATED MARCH 21, 1978.

E. Prior to excavation, transportation, or welding, tank shall have dump tube removed and then shall be purged of flammable gases by adding crushed dry ice at a ratio of one pound per 100 gallon capacity of the tank.

F. Tank must have a five-pound pressure test for 30 minutes to be witnessed by an inspector, at which time tank seams, welds, and pitted and corroded areas shall be wetted with a soap and water solution. The tank shall be rotated to allow examination of the entire tank. The tanks shall then be depressurized and the gauge shall return to 0 pounds.

G. The tank must be retarred, reasphalted, or otherwise properly coated.

TANK LOCATION

For Class I liquids , Section 15.210a -

a. Must be one foot from the nearest wall of any basement, pit, or cellar.

b. Must be three feet from any property line that may be built upon.

c. Must be one foot from any other tank.

d. Must be far enough away from any building foundation or support that the building load will not be transmitted to the tank.

NOTE: The Building Code requires a permit and plot plan for an underground tank. Apply through the Building Department.

For Class II and III Liquids -

Requirements are the same as above except they may not be closer than one foot from a property line that may be built upon.

TANK COVER

a. Must have a minimum of two feet of earth or one foot of earth and four inches of reinforced concrete (Section 15,210b).

b. Must be backfilled with soft earth or sand and compacted with water (Section 15.210b).

c. Where subject to traffic must have a minimum of three feet of earth or 18 inches of earth and six inches of reinforced concrete or eight inches of asphaltic concrete. Where asphaltic or reinforced concrete paving is used, it shall extend at least one foot beyond the outlines of the tank in all directions (Section 15.210b).

d. Tank may be covered to two-thirds height of tank to secure it in place prior to inspection of depth of bury.

PIPING

a. Shall be of steel, approved plastic, approved fiberglass, galvanized iron of standard weight, copper tubing, or of a material suitable to the product being used (Section 15.301).

b. Couplings may be of the screw thread type, welded joints, or "Dresser" couplings, style 65B, 88, or 90, up to a size of two-inch diameter. Copper tubing may be soldered.

c. Shall be at least 12 inches below the finished grade of surface material.

d. Before being covered or placed in use, tanks and piping connected to underground tanks shall be tested for tightness. No portion of the system shall be covered until it has been approved (Section 15.216).

The pipe system between the pump and dispenser, but not including the pump, tank, or dispenser, shall be tested as follows:

Both pressure and suction systems shall be pneumatically tested for 30 minutes to 150% of the shutoff pressure of the pump or 75 pounds per square inch gauge, whichever is greater. Joints and connections shall not be wrapped or coated during test and shall be wetted with a soap and water solution while under pressure.

SYSTEMS DEFINED

a. Pressure System: Generally a system that utilizes a turbine pump submerged within the underground tank. The turbine delivers product to the dispenser under pressure.

b. Suction System: Generally a system that utilizes a pump that is above ground, at or within the dispenser delivering product to the dispenser by means of suction.

VENT PIPES

a. The outlet shall not discharge into any building openings or be trapped under eaves or other obstructions (Section 15.215a-1).

b. Shall discharge either horizontally or vertically (not downward) (Section 15.215a-1).

c. Must be a minimum of 1-1/4 inches inside diameter (Section 15.215a-3).

d. Shall drain toward tank (Section 15.215a-4).

e. Shall be equipped with an approved swing joint at the tank and at the base of the discharge outlet (Section 15.215a-5).

f. Must terminate at least 12 feet above the ground (Section 15.215a-1).

FILL PIPES

a. Must not be over four inches inside diameter except under special permit (Section 15.215c).

b. For Class I, II, and III liquids, must be outside of any building and not less than ten feet from any door or cellar opening (Section 15.215c).

SUCTION OR PRESSURE LINES

a. Must not drain toward the dispenser.

b. Must have a swing joint at the tank and at the base of any dispenser (Section 15.305).

c. A 90 degree "Dresser" coupling will be permitted at the base of a dispenser provided the line is laid horizontally.

RETURN LINES

Must drain toward the tank.

SWING JOINTS

An approved swing joint will consist of one of the following:

a. Extractor-type foot valve housing with either a street elbow or a nipple and an elbow.

b. An elbow and a street elbow.

c. Two elbows and a nipple not over six inches long.

PIPE JOINT COMPOUND

All threaded joints or connections shall be made up tight with the use of an approved pipe joint sealing compound (Section 15.305).

NOTE: Due to structural weakness, a "close" nipple should not be permitted. A "close" nipple is one that has less than 3/8-inch unthreaded piping between threaded ends.

UNION

Unions are not required except at the base of a dispenser. A "Dresser" coupling may be used at this point.

WASTE OIL LINES

Draining lines terminating inside a building shall have a suitable trap or check valve (Section 15.708b).

DISPENSER LOCATIONS

a. Must be ten feet from property lines and so located that all parts of a vehicle being serviced will be on private property (Section 15.503c-1).

CORROSION PROTECTION

Corrosion protection for the tank and its piping shall be provided by one or more of the following methods (Section 15.214):

a. Use of protective coatings

b. Use of cold-applied, pipe-wrapping tape with a 50% overlap, spiral wrap to 40 mil thickness

c. Cathodic protection

d. Corrosion-resistant materials of construction (i.e. approved fiber-glass, galvanized pipe, except threaded fitting shall be coated or wrapped)

RN:jw

Date

JOSEPH ROTELLA, DEPUTY FIRE CHIEF
FIRE PREVENTION BUREAU

APPENDIX D

Draft Only

UNIFORM FIRE CODE
STANDARD No. 79-6

INTERIOR LINING OF EXISTING STEEL UNDERGROUND STORAGE TANKS

CHAPTER 1

GENERAL PROVISIONS

SCOPE:

Sec. 79.601 This standard sets forth the minimum requirements for the interior lining of existing steel underground tanks utilized for the storage of flammable and combustible liquids. Included under the scope of this standard is the repair of leaking tanks and protection of tanks from corrosion through the application of a lining material and cathodic protection. The lining itself is not intended to replace the structural strength provided by the steel tank shell or prevent future external corrosion. This standard addresses only those issues directly related to fire prevention and control. It is the intent of this standard to recognize that all applicable safety and health laws, regulations and ordinances shall be complied with in conjunction with the provisions set forth in this standard and that the contractor is knowledgeable of its content as well as the referenced material listed herein.

DEFINITIONS:

Sec. 79.602

APPROVED - SEE U.F.C.

CLASS I, DIVISION I, GROUP D - SEE ELECTRICAL CODE

COMBUSTIBLE LIQUID - SEE U.F.C.

FLAMMABLE LIQUID - SEE U.F.C.

LABELED - SEE U.F.C.

LISTED - SEE U.F.C.

LOWER FLAMMABLE LIMITS - The minimum concentration of vapor to air below which propagation of a flame will not occur in the presence of an ignition source.

NATIONALLY RECOGNIZED TESTING LABORATORY - A testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials and by whose labeling is indicated compliance with

nationally recognized standards or tests to determine suitable usage in a specific manner.

STATIC ELECTRICITY - The electrification of materials through physical contact and separation, and the various effects that result from the positive and negative charges so formed - particularly where they constitute a fire or explosion hazard.

SELF CONTAINED BREATHING APPARATUS - A portable respiratory protective device designed to protect the wearer from oxygen-deficient or a hazardous atmosphere that has its own air or oxygen supply and is approved by NIOSH (National Institute of Occupational Safety and Health).

VAPOR AREA - SEE U.F.C.

PERMITS & PLANS:

Sec. 79.603 (a) Prior to engaging in any activities relating to the alteration or repair of tanks or equipment in connection with the storage, handling, use or sale of flammable or combustible liquids regulated by the Uniform Fire Code, a permit shall be applied for from the Chief. No on-site work shall be initiated until a permit has been issued. (See Article 4, U.F.C.)

(b) At the time a permit is applied for, the applicant shall submit all certificates, specifications, licenses, certificates of insurance and such other documents required by this standard and the Chief.

MATERIALS:

Sec. 79.604 (a) Materials used for the interior lining of steel underground tanks shall be approved by the Chief.

(b) Guidelines for approval may include the following:

1) Materials listed by a nationally recognized testing laboratory for the intended use.

2) Acceptable materials shall satisfy the following requirements certified by the manufacturer and in accordance with nationally recognized and accepted standards, principles and tests.

a. Adhesion

Coatings, when applied to properly-prepared steel surfaces must maintain adhesion (bond) to the tank while in its designated service.

b. Immersion Tests

Representative coating samples shall be tested to determine compatibility of the lining material with stored products. Samples shall be immersed in the liquids listed below at either 38° C (100° F) for periods of one, three and six months, or 23° C (74° F) for periods of one, three, six and twelve months. The 23° C (74° F) exposure is more realistic and is preferred.

LIQUIDS FOR IMMERSION TESTING:

ASTM Reference Fuel C
Unleaded Gasoline
Leaded Gasoline
No. 2 Fuel Oil or Diesel Oil
Toluene
Xylene
Gasohol (50% ethanol)
Gasohol (50% methanol)
Distilled Water

Upon completion of each immersion period, samples shall be tested in accordance with the following:

TEST	PURPOSE
ANSI-N5.12-1983	Bonding Strength
ASTM D790-81	Flexural Strength
ASTM D2794-69	Impact Resistance
ASTM D2583-81 (Model 934-1) or Barber Coleman GYZJ (Model 935)	Barcol Hardness
ASTM D543-67 Procedure 1	Weight and Dimension Changes

Properties after the final immersion period shall be a minimum of 30% of the original properties before immersion in toluene, xylene, and distilled water; and 50% for immersion in all other listed liquids, with a stable trend indicating no further long-term deterioration.

NOTE: Before storage is permitted of liquids other than those listed, test results demonstrating the liner will meet the above requirements in those liquids must be submitted by the manufacturer.

CHAPTER 2

GENERAL SAFETY REQUIREMENTS

Sec. 79.605 (a) Site Preparation. Prior to excavation, the site shall be safeguarded from all sources of ignition for an area of 25 feet in all directions until vapor free. All open flame and spark producing equipment within the area shall be shut down. Barricades and warning signs reading "Flammable - No Smoking" shall be provided in accordance with the directions of the Chief.

(b) Clearance. A clearance from the Chief shall be obtained prior to proceeding with any work that may generate or produce flammable or combustible vapors.

(c) Fire Extinguishers. Two portable A:B:C type fire extinguishers each having a rating not less than 80B:C shall be provided on the site in accordance with U.F.C. Standard No. 10-1 for extra (high) hazard.

(d) Emergency Communications. A dependable method, approved by the Chief, of notifying the fire department shall be maintained.

(e) Static Electricity Control. Adequate precautions shall be taken to prevent the accumulation and discharge of static electricity.

(f) Class I, Division I Electrical Equipment. All electrical equipment used in the area must be explosion-proof (Class I, Group D, Division I) or approved for the service.

PREPARATION FOR OPENING THE TANK:

Sec. 79.606. Tank Isolation. Before any work on the exterior surface of the tank begins, tanks must be inspected to determine how the tank is to be isolated. If a tank is equipped with a manifold vent or fill line or syphon assembly, necessary measures must be taken to isolate each tank(s). All product and vapor recovery piping shall be disconnected and blanked off and the bungs of the tank plugged. The vent for the tank being lined should be isolated from vents for other tanks which may still be in service. This may require a temporary separate vent for the tank being lined. All electrical switches supplying electrical current to submerged pumps and/or other equipment connected to the tank shall be disconnected and locked.

Sec. 79.607. Removal of Liquid Product. As much product, water and sediment as possible shall be removed using explosion-proof or air driven pumps. Pump motors and suction hoses must be bonded to the tank to prevent electrostatic ignition hazards. A small quantity of water can be pumped into the tank to float the product from a low spot where it can be pumped from the tank. Also, where possible, fill (drop) tubes shall be removed to allow for maximum removal of all liquid and to provide for adequate air ventilation.

Sec. 79.608 Removal of Flammable Vapors (Gas Freeing)(a)The tank shall be thoroughly purged only with air to remove flammable vapors or residue capable of producing flammable vapors. The concentration of flammable vapors in a tank may go through the flammable range before a safe atmosphere is obtained. It therefore is necessary that precautions are taken to eliminate the possibility of the discharge of static electricity during gas freeing procedures.

Air pressure in the tank must not exceed 5 psig. To prevent excess air pressure the vent line must be checked to make certain it is free from obstruction and traps.

Ventilation of the tank can be accomplished by one of two methods which are listed below.

(1) An eductor-type air mover (see Appendix C, Figure 1) usually driven by compressed air, shall be properly bonded to prevent the possibility of static electricity generation and discharge. When using this method, the fill (drop) tube should remain in place to ensure ventilation at the bottom of the tank. Tanks equipped with fill (drop) tubes which are not removable shall be purged by this method. An extension shall be used to discharge vapors a minimum of twelve (12) feet above grade.

(2) Diffused blown-air is illustrated in Appendix C, Figure 2. When using this purging method it is imperative that the air-diffusing pipe is properly bonded to prevent the discharge of a spark. Fill (drop) tubes must be removed to allow proper diffusion of the air in the tank. Air supply shall be from a compressor, which has been checked to ensure a clean air supply, free from volatile vapors. Air pressure in the tank must not exceed 5 psig.

Sec. 79.609. Testing Flammable Vapor Concentrations. An important phase of the operation is the testing for flammability of the vapor in the excavated area and in the tank. Such tests are to be made with a combustible gas indicator which is properly calibrated on hexane in air and thoroughly checked and maintained in accordance with manufacturer's instructions. Persons responsible for testing must be completely trained and familiar with the use of the instrument and the interpretation of the instrument's readings.

The tank vapor space is to be tested by placing the combustible gas indicator probe into the fill opening with the fill (drop) tube removed. Readings shall be taken at the bottom, middle and upper portions of the tank and the instrument shall be purged with fresh air after each reading. If the tank is equipped with a non-removable fill tube, readings shall be taken through another opening. Liquid product must not enter the probe. The vapors shall be tested at the vent riser or eductor while the air mover is in operation and purging is in progress, and also in the tank itself with purge air shut off. Readings of 10 percent or less of the lower flammable limit (LFL), as indicated in the tank and at the vent riser or

eductor, must be obtained before the tank is considered safe for opening.

79.610. Opening the Tank. If no manway exists, or if an existing manway is less than 24 inches in diameter, an opening with the minimum dimension of 24" X 24" shall be cut in the top. The tank section to be removed should be marked square with chalk and a hole drilled with an explosion-proof (such as air-driven) drill at one corner of the section. After the hole is drilled, the tank vapors must again be tested by inserting the meter probe into the hole to verify that the vapor concentration does not exceed 10 percent LFL.

NOTE: It is important that the purging, air ventilation and testing continue throughout the entire lining operation. During the tank cutting operation minimal air pressure shall be maintained to prevent a blow out.

The tank shall be cut using an explosion-proof (such as air-driven) saber saw or snipper using lubricating oil to reduce friction, heat and possible sparks. Prior to the final cut, the plate shall be supported to prevent its falling into the tank.

Sec. 79.611. Tank Entry. Before entering tanks, the procedures described in API Publications 2015, "Cleaning Petroleum Storage Tanks", and 2015A, A Guide for Controlling the Lead Hazard Associated with Tank Entry and Cleaning", should be followed. This includes checking the oxygen content inside the tank with a properly calibrated oxygen monitor. At all times, personnel entering the tank shall be equipped with positive pressure air supplied equipment with full face enclosure and safety harness connected to a safety line held by an attendant outside the tank. A self-contained breathing apparatus shall be available to the attendant for rescue operations or other emergencies.

Oil and water-resistant rubber or neoprene boots and gloves shall be worn. Clothing shall cover the arms, legs, torso and head of tank entry personnel. Disposable clothing, impervious to product, is preferred. Clothing saturated with product shall be removed immediately. All personnel working inside the tank should be familiar with ANSI Z117.1, "Confined Spaces Safety".

Tests with the combustible gas indicator and oxygen monitor should be performed periodically in the tank to ascertain that the tank vapors and oxygen content are in the safe range. It should be recognized that if the tank is perforated, product or vapors which have leaked into the soil may re-enter the tank through a perforation. The vent line shall remain clear and unobstructed to allow continuous ventilation. All other lines and openings shall be plugged or capped off to insure no liquids or vapors may enter the tank during the lining operation.

79.612. Sludge Removal. Sludge accumulation on the bottom of the tank must be removed and placed in tightly sealed containers. It must be disposed of as soon as practical in accordance with local, State and Federal regulations, which may require mandatory documentation as well as safe disposal.

NOTE: Tank sludge and scale are potentially hazardous as they may contain tetraethyl lead vapors which can be inhaled, or toxic liquid tetraethyl lead which may be absorbed through the skin. If the dry internal surface of the tank is scraped, the resulting atmosphere may contain dangerous quantities of lead. The quantity of lead in the tank atmosphere should be checked using a lead-in-air analyzer.

CHAPTER 3

TANK INSPECTION AND STRUCTURAL CERTIFICATION

INTERIOR SURFACE PREPARATION FOR INSPECTION:

Sec. 79.613. Surface Preparation. All abrasive blasting personnel should be familiar with the hazards described in API Publication 2027, "Ignition Hazards Involved in Abrasive Blasting of Tanks in Service". All perforations shall be plugged with boiler plugs or hydraulic cement as necessary to permit abrasive blasting; seams may be plugged with hydraulic cement.

CAUTION: BEFORE ABRASIVE BLASTING, THE TANK SHOULD BE CHECKED AGAIN WITH THE COMBUSTIBLE GAS INDICATOR TO ENSURE THAT NO FLAMMABLE VAPORS HAVE ENTERED THE TANK.

BLAST CLEANING OPERATIONS SHALL NOT BE CONDUCTED ON SURFACES THAT WILL BE WET AFTER BLASTING AND BEFORE APPLICATION OR WHEN THE SURFACE IS LESS THAN 5° F ABOVE DEW POINT, OR WHEN THE RELATIVE HUMIDITY OF THE AIR IS GREATER THAN 85%.

The entire internal tank surface shall be abrasive blasted completely free of scale, rust and foreign matter. Abrasive blast operators shall wear approved helmets connected to sources of clean air. Bonding should be provided between the blasting nozzle and the work surface, or else the blasting nozzle should be effectively grounded to provide equivalent protection from static charges.

Sec. 79.614. Tank Inspection. During inspection, the entire surface of the tank shall be inspected using a light fixture approved for Class I, Division I, Group D hazardous locations. The structural integrity of the tank shall be determined by an approved non-destructive thickness measuring device. The entire tank interior shall be inspected using the approved wall thickness measuring device on a two foot grid pattern and also a visual inspection. All questionable tank wall areas (less than 1/8" wall thickness) will be tap tested with a ballpeenhammer to determine extent of metal loss. A lined tank's structural integrity is dependent on the steel tank shell; therefore a repairable tank will be identified by the following guidelines:

1. A tank having a single open seam or split no longer than three (3) inches in areas other than within six (6) inches of head to shell seam; or

2. A tank having a single perforation no larger than one and one-half (1-1/2) inch in diameter except under the gauging opening where the perforation may be no larger than two and one-half (2-1/2) inches in diameter; or

3. A tank with less than five (5) perforations (none larger than one-half inch in diameter) in any one square foot area; or

4. A tank with less than twenty (20) perforations (none larger than one-half inch in diameter) in a five hundred (500) square foot area.

To determine adherence to these guidelines, perforations and seams shall be brass ballpeen hammered (before and after abrasive blasting) to remove thin metal and obtain structurally sound edges. Perforations and seam splits shall be reamed until the edges of the hole or split are a minimum of 1/8" thick. Tanks that exceed any one of the above shall not be interior lined. Tanks having a leak in a joggle or lap joint shall not be repaired. The structural integrity of the tank shall be certified by a registered engineer unless waived by the Chief.

CHAPTER 4

APPLICATION OF LINING AND TANK CLOSING

Sec. 79.615. Application of Lining. Prior to the application of lining material, boiler plugs and hydraulic cement plugs shall be covered with epoxy or polyester then covered with fiberglass cloth (minimum 1½ oz./yd^2, silane treated) which overlaps all sides of the plug with a minimum of two (2) inches. If a perforation in a seam is present, the perforation shall be sealed with hydraulic cement then covered with glass cloth and resin, overlapping the perforation by six (6) inches. A 1/4" steel reinforcing plate rolled to the contour of the tank and with minimum dimensions of 8" by 8" shall be installed under the fill (drop) tube and gauging tube. This plate shall be covered with fiberglass cloth imbedded in resin. The blast-cleaned surface should be coated within eight hours after blasting and before any visible rusting occurs. Only those lining materials meeting the specifications in Section 79.604 shall be used. Manufacturer's instructions are to be followed on handling and/or preparation of the lining materials and these materials shall be applied to the entire interior surface of the tank by the manufacturer or his designated distributor following the specified method of application, to the designated thickness and at the recommended application temperature. If a heater is used to accelerate the curing process, all other work which might release flammable vapors must be halted and the heating unit must be attended whenever it is in operation. The coating shall be cured thoroughly to the manufacturer's specifications and checked for air pockets, and pinholes using an approved Holiday Detector. If any exceptions are found they shall be repaired to manufacturer's specifications. Contractor shall protect the coated surfaces from contamination by foreign matter. The coating thickness shall be checked with an Elcometer Thickness Gauge or equivalent and tested for hardness using a Barcol Hardness Tester or equivalent to ensure compliance with manufacturer's specifications.

Sec. 79.616. Tank Closing. If an opening has been cut, the tank shall be sealed as follows:

(a) A 1/4" minimum thick steel cover plate, but not less than the original size plate, rolled to the contour of the tank, shall be made to overlap the hole at least two inches on each side.

(b) The cover shall be used as a template to locate 3/4" diameter holes not exceeding five inch centers, one inch from the edge of the cover and tank opening.

(c) The cover plate shall be abrasive blasted to white metal on both sides, and also shall include the outside of the opening under tank cover, and the entire inside cover surface shall be coated with coating material to act as a gasket.

(d) Before the coating on the cover cures, the cover shall be fastened to the tank using 1/2" (minimum) diameter bolts. The bolt shafts are to be placed through the holes from the inside of the tank and held in place by spring clips, then fastened with lock washers and nuts as illustrated in Figure 3.

(e) All bare surfaces shall be coated on the interior and exterior with the coating material.

(f) After being bolted to the tank, the cover plate and surrounding tank surface shall be abrasive-blasted to white metal, coated with coating material and allowed to cure before backfilling the hole.

CHAPTER 5

TESTING

Sec. 79.617. Pressure Testing. Before backfilling, the tank shall be tightness tested in accordance with U.F.C. Sec. 79.605 (b). Particular attention should be paid to the cover plate and all exposed fittings.

Sec. 79.618. Vacuum Testing. Before backfilling, the tank shall be tightness tested at a vacuum equivalent to the burial depth of the tank times 1.05.

CHAPTER 6

EXTERNAL CORROSION PROTECTION

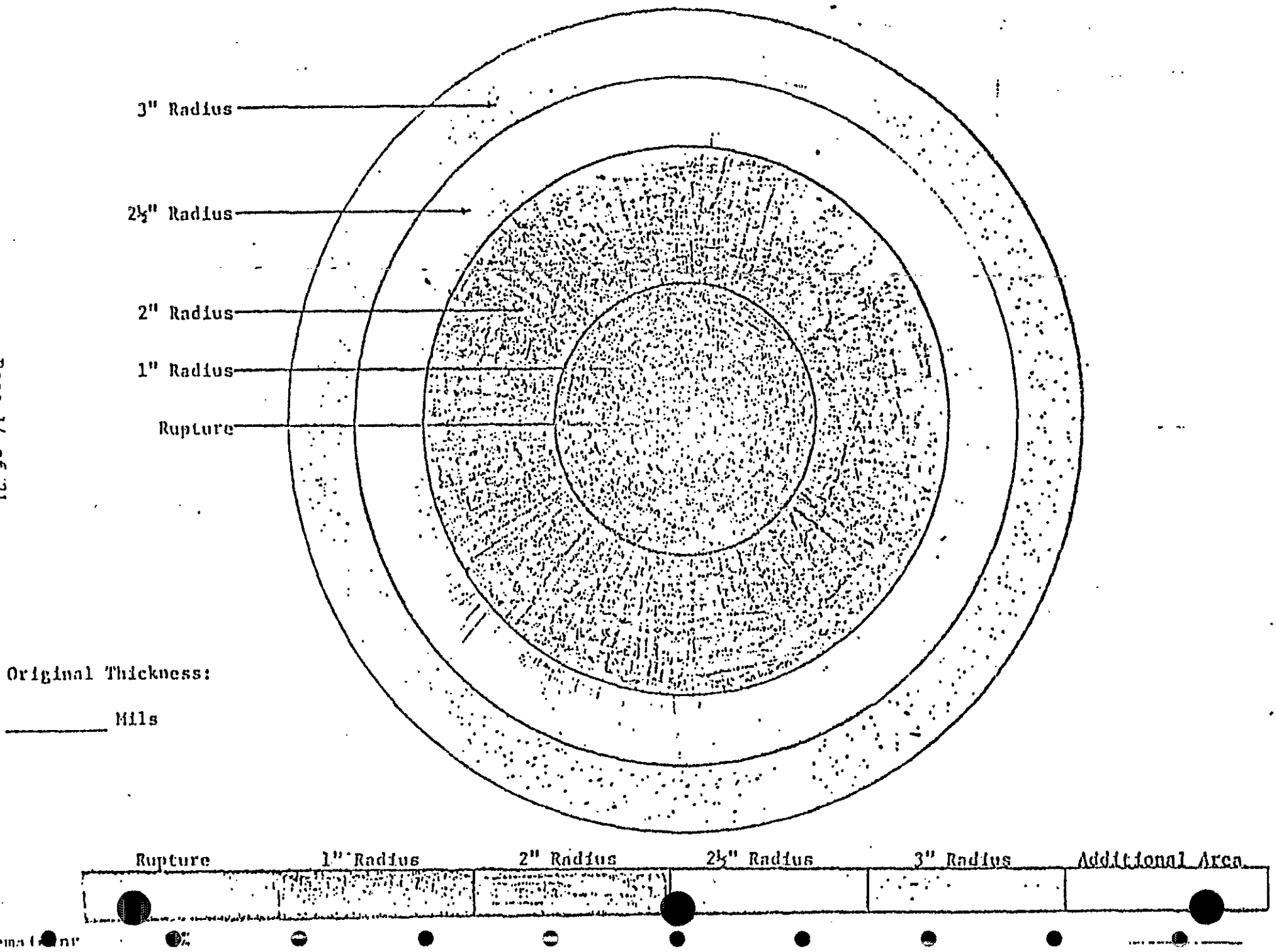
Sec. 79.619. Cathodic Protection. Interior lined underground tanks shall be cathodically protected in accordance with U.F.C. Sec. 79.603.

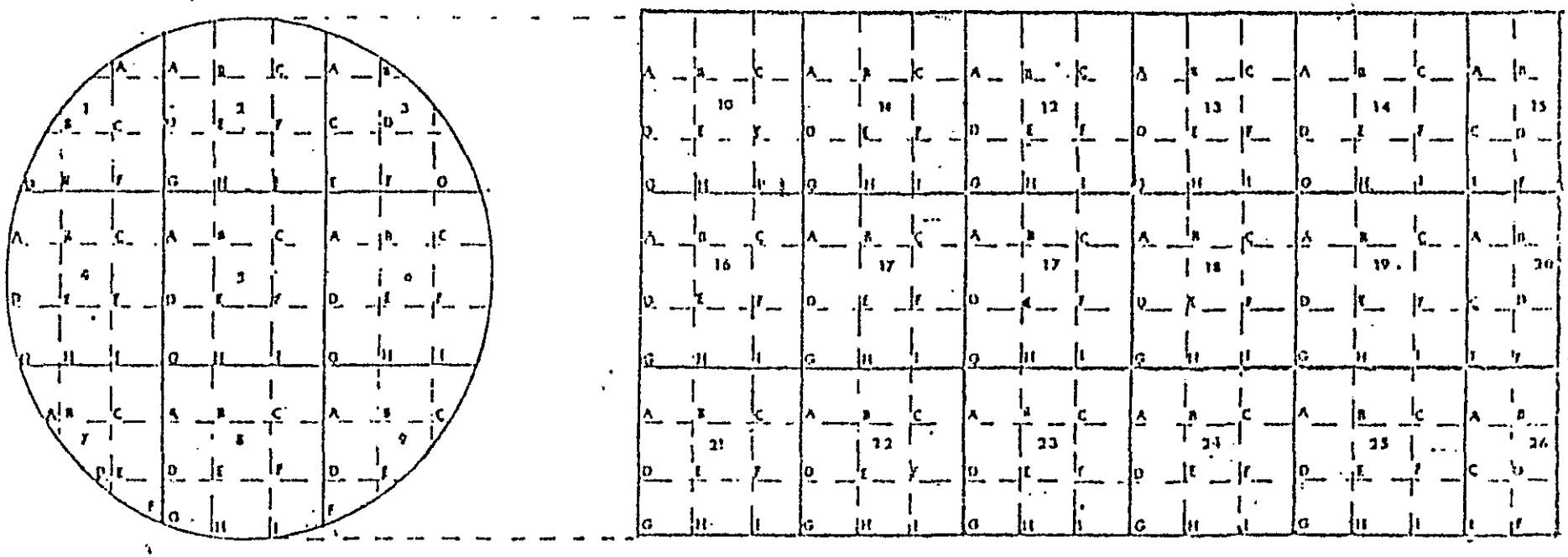
APPENDIX A

REFERENCE MATERIALS

ANSI Z117.1	Confined Spaces Safety
A.P.I. PUBLICATION 2015	Cleaning Petroleum Storage Tanks
A.P.I. PUBLICATION 2015A	A Guide for Controlling the Lead Hazard Associated with Tank Entry and Cleaning
A.P.I. R.P. 2003	Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents
A.P.I. R.P. 2027	Ignition Hazards Involved In Abrasive Blasting of Tanks In Service
N.F.P.A. Standard 77	Static Electricity
N.F.P.A. Standard 327	Cleaning Small Tanks and Containers

Percent of Retention Surrounding a Rupture in a Steel Tank





LEFT

BOTTOM

Tank should be inspected at the center point of each 3' quadrant. Quadrants under 3/16" thickness should be further inspected at the center point of each 1' quadrant within the original 3' quadrant. Indicate each test by marking the millage in the appropriate square.

Millage Conversion to inches:

31.25 = 1/32 of an inch		
62.50 = 1/16 of an inch		
187.5 = 3/16 of an inch		
250.0 = 4/16 of an inch	=	1/4
312.50 = 5/16 of an inch		
375.0 = 6/16 of an inch	=	3/8
437.50 = 7/16 of an inch		
500.0 = 8/16 of an inch	=	1/2
562.50 = 9/16 of an inch		
625.0 = 10/16 of an inch	=	5/8

Scale: 1" = 3'

Date of Inspection

CONVERSION

IN.		10/16		8/16		6/16		4/16		2/16				EAK	NSEAM
IN.		5/8	9/16	1/2	7/16	3/8	5/16	1/4	3/16	1/8	1/16	1/32			
QUADRANT NO.	A														
	B														
	C														
	D														
	E														
	F														
	G														
	H														
	I														
QUADRANT NO.	A														
	B														
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	G														
	H														
	I														

IN.		10/16		8/16		6/16		4/16		2/16				EAK	NSEAM
IN.		5/8	9/16	1/2	7/16	3/8	5/16	1/4	3/16	1/8	1/16	1/32			
QUADRANT NO.	A														
	B														
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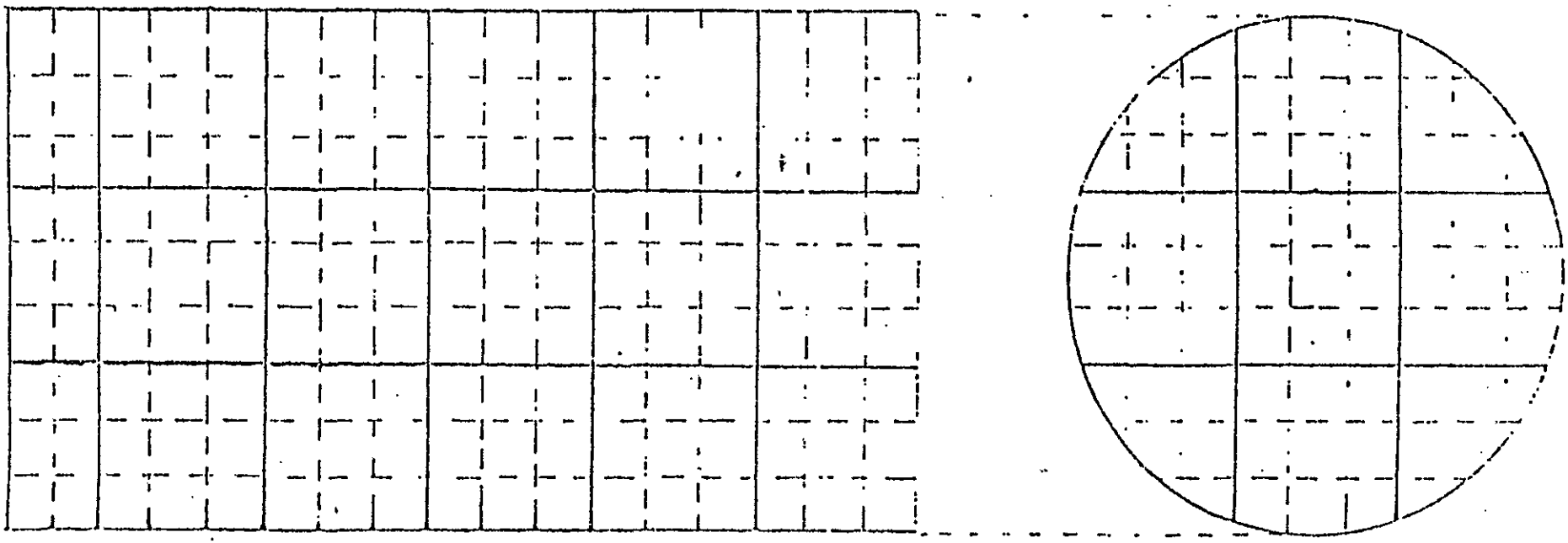
ULTRASONIC MEASUREMENT REPORT FORM



TOP RIGHT

* Scale: 1" = 3'

Tank should be inspected at the center point of each 3' quadrant. Quadrants under 3/16" thickness should be further inspected at the center point of each 1' quadrant wihtin the original 3' quadrant. Indicate each test by marking the millage in the appropriate square.

Millage Conversion to inches:

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500.0 = 8/16 of an inch = 1/2
562.50 = 9/16 of an inch
625.0 = 10/16 of an inch = 5/8

CONVERSION

MILS		625	562.5	500	437.5	375	312.5	250	187.5	125	62.5	31.25	LEAK	ENSEAM
IN.		10/16		8/16		6/16		4/16		2/16				
IN.		5/8	9/16	1/2	7/16	3/8	5/16	1/4	3/16	1/8	1/16	1/32		
QUADRANT NO.	A													
	B													
	C													
	D													
	E													
	F													
	G													
	H													
	I													
QUADRANT NO.	A													
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IN.														
IN.		5/8	9/16	1/2	7/16	3/8	5/16	1/4	3/16	1/8	1/16	1/32	EAK	NSEAM
QUADRANT NO.	A													
	B													
	C													
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INTERIOR LINING OF STEEL UNDERGROUND STORAGE TANKS

TYPES OF TANK VENTILATION AIR MOVERS

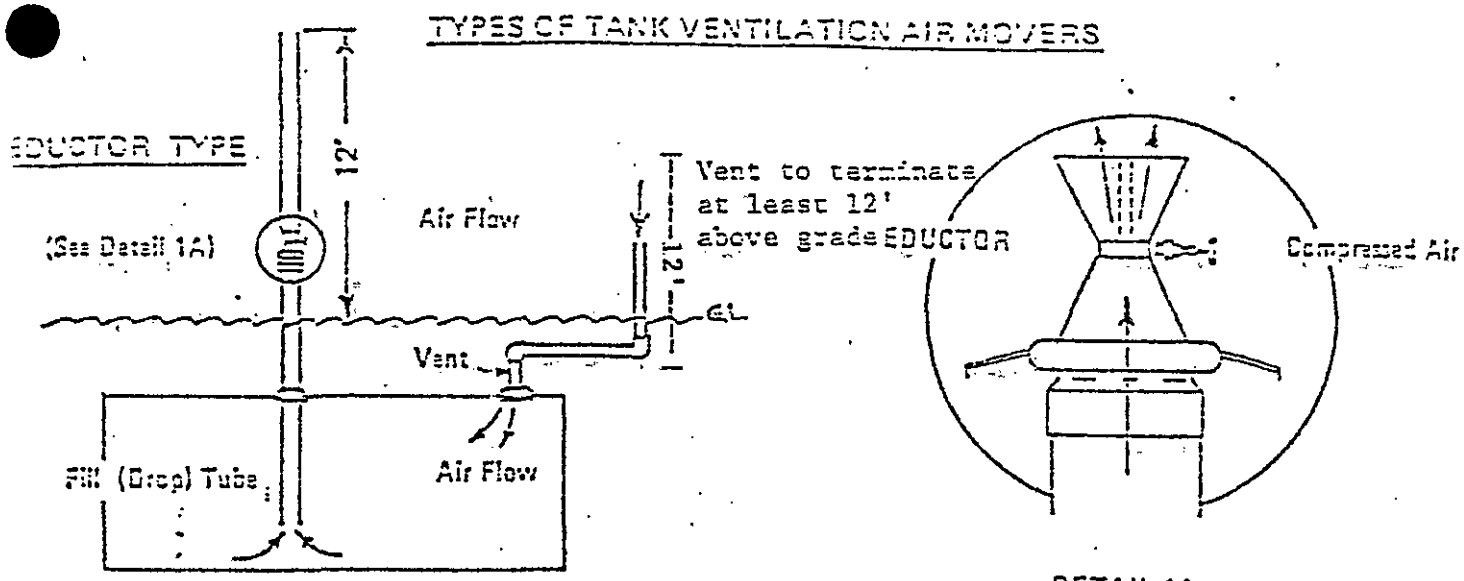


FIGURE 1

DETAIL 1A

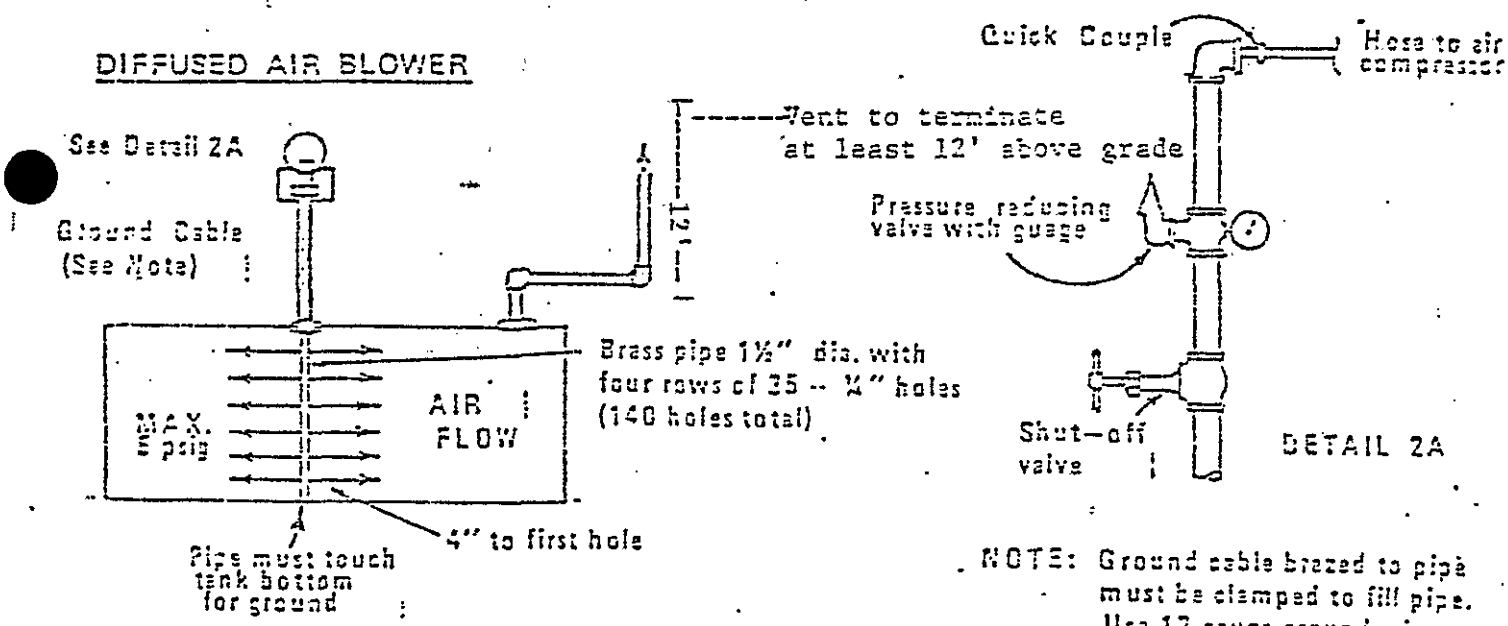


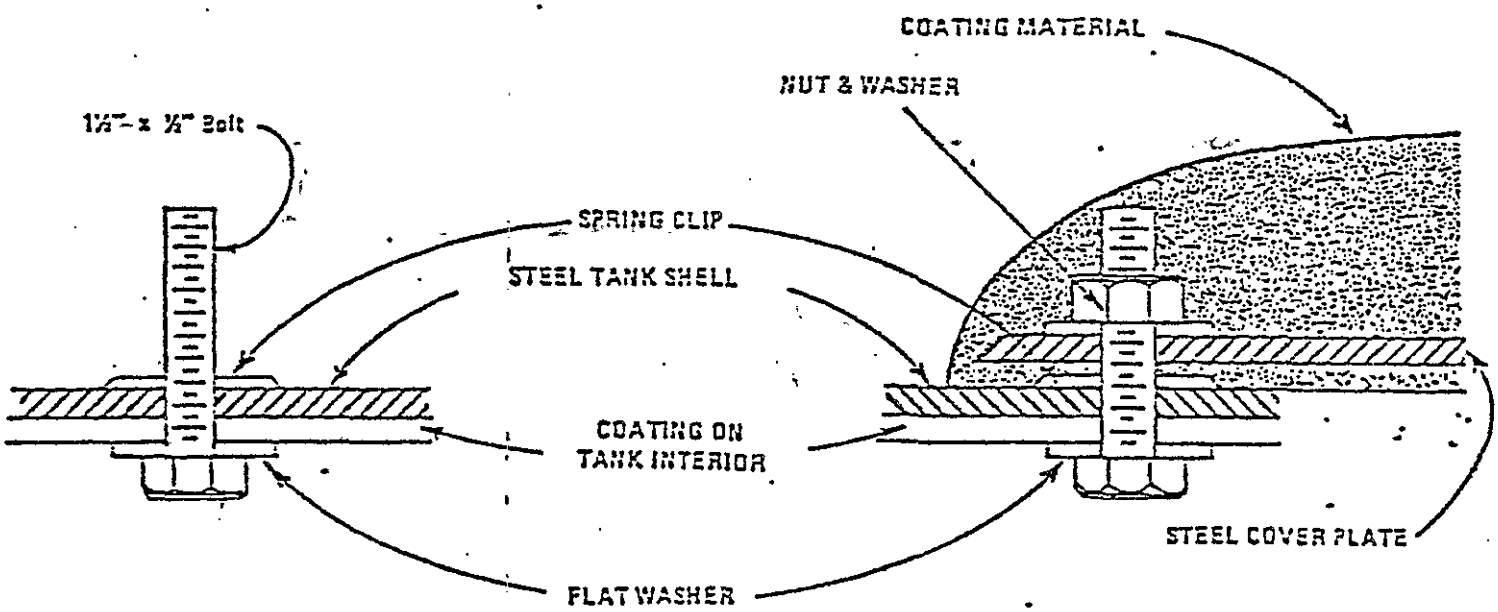
FIGURE 2

NOTE: Ground cable brazed to pipe must be clamped to fill pipe. Use 12 gauge ground wire from fill pipe to water pipe or ground rod.

INTERIOR LINING OF STEEL
UNDERGROUND STORAGE TANKS

FIGURE 3

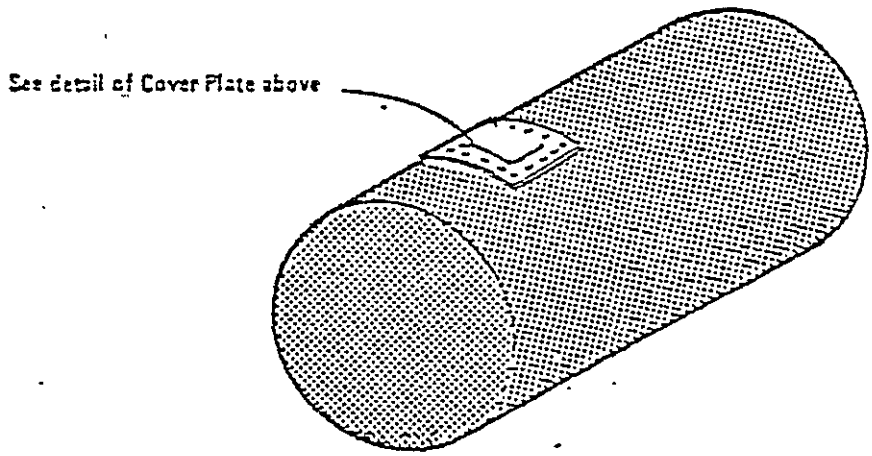
INSTALLATION OF TANK COVER PLATE



WITH BOLT IN PLACE PRIOR TO COVER INSTALLATION

WITH COVER BOLTED IN PLACE

CROSS SECTION



APPENDIX E

INSPECTOR'S CHECKLIST

DATE: _____ PERMIT NO. _____

BUSINESS NAME: _____

ADDRESS: _____ TELEPHONE NO. _____

PRODUCTS STORED: _____, _____, _____

CONTRACTOR: _____

ADDRESS: _____ TELEPHONE NO. _____

COATING MATERIAL: _____ MFG: _____

APPLICATION RATIO: _____(Gals. per Sq. Ft.) GALS. USED: _____

SAFETY:

Barricades Provided _____ "Flammable - No Smoking" Signs Posted _____

Fire Extinguishers On Site _____ Emergency Communications Approved _____

Employees Wearing Proper Attire & Footwear _____

Approved Breathing Apparatus On Site _____

Combustible Gas Indicator On Site _____ Oxygen Monitor _____

All Equipment & Electrical Appliances Approved _____

Tank & Vent Lines Isolated _____ Vent Lines Connected & Open _____

Proper Containers For Sludge Storage _____

Sand Blasting Equipment Bonded _____

TANK INSPECTION:

Sonic Testing Completed _____ Results _____

Tank Repairable _____ Tank Condemned _____ Remarks: _____

_____

Penetrations Reamed Correctly _____ Holiday Test Performed _____

Thickness & Hardness Tests Performed _____

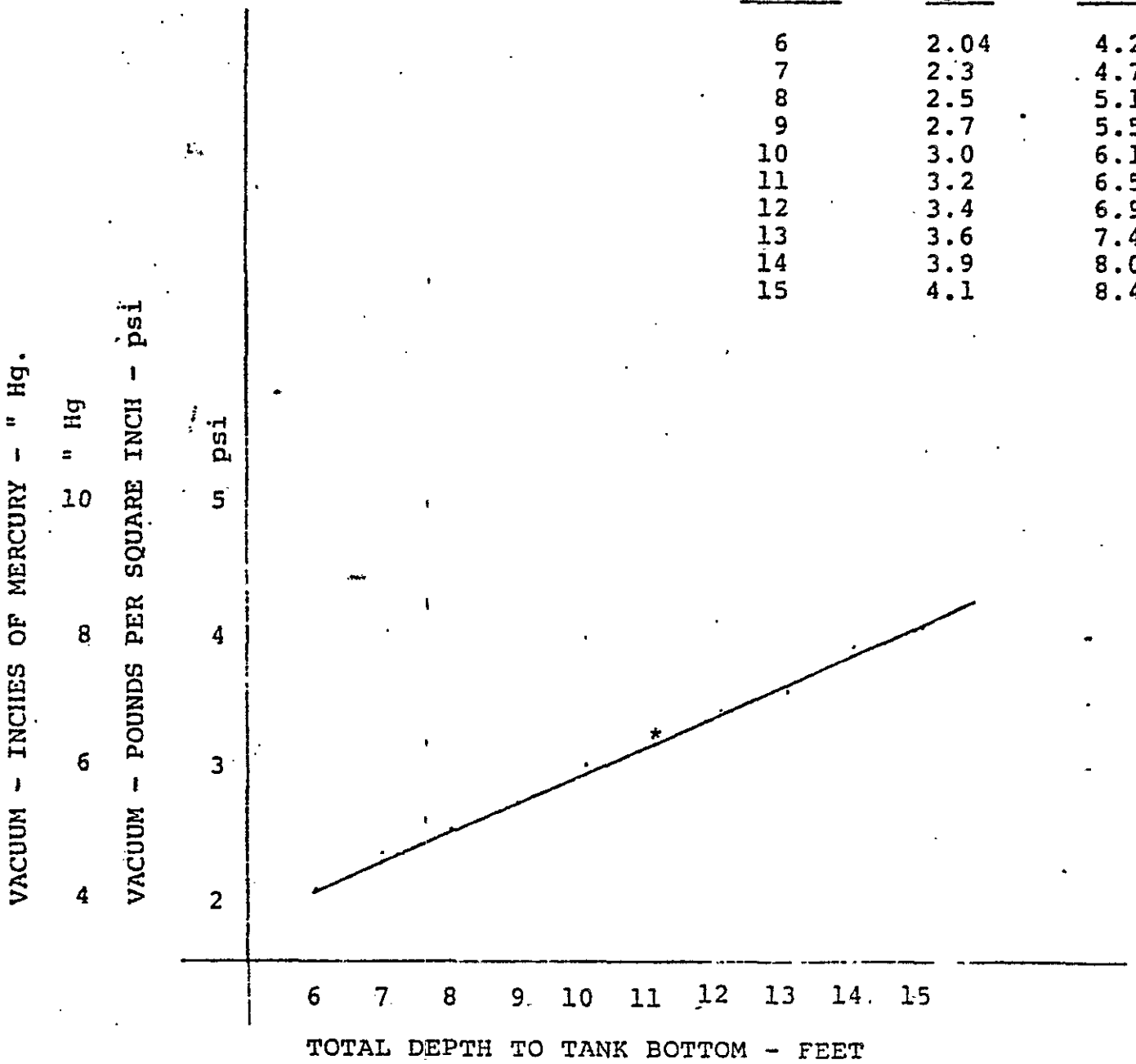
Pressure Tested _____ Vacuum Tested _____

Cathodic Protection Installed _____ Type _____

VACUUM VALUES VS TANK DEPTH

FOR VACUUM TESTING

Bottom Depth	Vpsi	V "Hg.
6	2.04	4.2
7	2.3	4.7
8	2.5	5.1
9	2.7	5.5
10	3.0	6.1
11	3.2	6.5
12	3.4	6.9
13	3.6	7.4
14	3.9	8.0
15	4.1	8.4



NOTES:

1- Values rounded to nearest 0.1

2- Vacuum values equal average depth equivalent for buried tank and brackish water

3- * = 8 foot diameter tank, 3 feet of cover

APPENDIX E

LOS ANGELES COUNTY FIRE DEPARTMENT

FIRE PREVENTION DIVISION

SUPPLEMENT #A - INSPECTION GUIDE #6 April 21, 1976

ABANDONMENT OR REMOVAL OF UNDERGROUND TANKS

The following procedures shall be complied with when underground tanks are removed, abandoned or temporarily taken out of service.

Whenever any tank is taken out of service or shall not have been used for a period of ninety (90) days, such tanks shall be properly safeguarded, abandoned, or removed in a manner approved by the Chief. (Section 15.212, Fire Code)

A. Tanks Temporarily Out of Service

(1) Cap the fill line, gauge opening and pump suction; secure against tampering.

(2) Leave the vent line open.

(3) Tank may be placed "temporarily out of service" only when it is planned that it will be returned to active service at that location or pending removal within 90 days.

B. Abandoning Underground Tanks in Place

(1) Remove all flammable or combustible liquid from the tank from all connecting lines.

(2) Disconnect the suction, inlet, gauge and vent lines.

(3) Fill the tank and any remaining stubs completely with an approved nonshrinking inert solid material and cap all tank inlets and outlets. The following materials will be acceptable for this purpose.

a. A mixture of 1/10# Cypan and 25# Bentonite per 55 gallon barrel water.

b. The slurry of 1 part cement to ten parts of sand.

c. Optional Mixture:

	Volume	Weight
Sand	1 cu. yard	1 ton
Water	47 gallons	31.2 gallon
Cement	1.5 sacks	94 pounds
DAREX AEA (Air entraining agent)	24 ounces	16 ounces
WRDA (Water wetting admix)	18 ounces	12 ounces

NOTE: INSERT THIS SUPPLEMENT IN THE FIRE PREVENTION MANUAL. DESTROY SUPPLEMENT #A TO INSPECTION GUIDE #6 DATED JUNE 29, 1972.

C. Abandoning Underground Tanks in Place (Sand pumping method)

(1) Remove all flammable or combustible liquid from the tank and from all connecting lines.

(2) Cut off vent lines approximately 3 feet above grade. (This establishes an increased head on sand being pumped into tank - insuring complete filling of tank). Do not use cutting torch.

(3) Disconnect and cap off extraction (suction) lines at dispenser.

(4) Make liquid tight threaded connections between fill lines of tank and the discharge line from sand pump. On tanks equipped with fill pipes extending below tank top, it is necessary to remove the extension piping within tank.

(5) Attach a drain hose to end of vent line, by means of a tight or threaded connection, and direct it into a reservoir (55 gallon drum may be used) to hold any residual flammable liquids which might be left in tank.

(6) Proceed to pump sand into tank until dense suspension of sand in water discharges from vent lines. (At this point caps may be removed from extraction lines for observation.) Sand should be present here before pumping is stopped.

(7) Caution should be observed in the area of the vent lines due to emission of flammable vapors. If necessary conduct vapors to a more remote or less hazardous area.

(8) An Inspector should be present to witness completion of abandonment. Call (213) 267-2461 for inspection appointment at least 24 hours in advance of proposed completion.

D. Removal of Underground Tanks

(1) Remove all flammable or combustible liquids from tank and from connecting lines.

(2) Disconnect the suction, inlet, gauge, and vent lines; remove sections of connecting lines which are not to be used further and cap or plug inlets, outlets and leaks, if any.

E. The Chief shall be notified at least 24 hours prior to the removal or abandonment of any underground tank.

F. Disposal of Tanks

Tanks to be disposed of as junk shall be rendered free of flammable vapors. No cutting torch or other flame or spark producing equipment shall be used until the tank has been completely purged or otherwise rendered safe.

Note: NFPA No. 327, "Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers" provides information on safe procedures for such operations.

G. Re-Use of Underground Tanks

Used tanks shall not be reinstalled until they are made to substantially comply with Article 15, Division 2 of the Fire Code.

The following is a list of concerns in the business of purging and repairing flammable liquid tanks:

Kock Welding
2843 Whittier Boulevard
L.A. 90023
268-5492

Prime, Inc. - Bill Hitt
14751 S. Garfield Avenue
Paramount 90723
774-3270 & 630-5871

Brodine and Sons
1400 E. Arrow Highway
Irwindale 91706
684-1140

Moine Bros. Excavators
22400 S. Moneta Street
Carson 90745
834-3903

HWM:cmv

APPENDIX F

HS

#117c

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

550 South Vermont Avenue
Los Angeles, CA 90020

Telephone 738-2011

THOMAS A. TIDEMANSON
Director of Public Works

January 16, 1985

State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Attention Mr. Harold Singer
Division of Technical Services

Gentlemen:

PROPOSED REGULATIONS GOVERNING
UNDERGROUND STORAGE OF HAZARDOUS MATERIALS

This office has reviewed the proposed changes to regulations to be codified in Subchapter 16, Chapter 3, Title 23, California Administrative Code, and we offer the comments herein. The County of Los Angeles adopted Title 11, Division 4 of Los Angeles Code prior to January 1, 1984, and published guidelines for the Underground Storage of Hazardous Materials, dated October 1984, copies of which were forwarded to your office.

It is our desire to establish uniform regulations since this Department will be the regulating agency within the 77 cities in Los Angeles County that at this time have not developed any regulatory programs. Our comments pertain to the areas of difference between the Los Angeles County guidelines and the proposed changes, and are listed by section number.

General Comments

1. The term "if feasible" or "whenever feasible" is used in various sections. The local agency should make the determination if a particular requirement is feasible or not. Better terminology would be "If the local agency determines that....".

2. Owners should be required to contact the local water well permitting agency whenever a permit is required to establish a groundwater monitoring well. The construction standards utilized should be those of the well permitting agency if such standards are more stringent than those of the underground storage tank regulatory agency.

Received DTS
JAN 18 1985

Specific Comments

2631 (j) (1-3)--We feel that these standards are reasonable and necessary to ensure the quality of membrane liners used for secondary containment systems and should be considered minimum standards.

2632 (d) (2)--Owners of multiple facilities should be allowed to develop a unified response plan applicable to all regulated sites.

2633 (c)--There is text missing from this section.

2633 (g)--Pressurized piping systems as defined in this section are exempt from leak detection and interception requirements if monitored with a leak detection device pursuant to Section 25292(b)(3) of the Health & Safety Code. The term "leak detection device" remains undefined, and the local agencies should have the authority to determine if a leak detection device or other proposed monitoring systems provide the neccessary equivalent protection to warrent an exemption from the leak interception and detection requirements.

2634 (a)--See 2633(g) above.

2635 (b) (3)--A strike plate located under all accessible openings should be required for all steel underground storage tanks unless the tank design precludes accelerated corrosion and metal fatigue at the effected locations.

2635 (b) (4)--The term "coatings" is unclear. Underground storage tanks manufactured utilizing corrosion resistant materials of construction such as plasteel, glass-fibre reinforced plastic, or glasteel do not require additional cathodic protection. Underground storage tanks manufactured from steel only should require a coating in concert with cathodic protection.

2635 (b) (7)--Owners of underground storage tanks should be required to submit a certification of tightness to the local agency to ensure compliance with this section if the local agency is not the fire department.

2640 (f)--A reduction of monitoring frequency is impractical and unneccessary.

2641 (c) (1)--Using monthly tank testing only as a monitoring technique is impractical and does not provide an adequate level of leak detection protection.

2641 (c) (2)--The installation of groundwater monitoring wells where groundwater is deeper than 40 feet is redundant and excessive. A properly designed and installed vadose zone monitoring system provides a level of protection sufficient enough to ensure sound leak detection ability.

Such vadose zone monitoring systems will provide an unauthorized release alarm condition <u>prior</u> to leak

detection utilizing a semi-annual groundwater monitoring well sampling program.

The vast number of groundwater monitoring well installations that would result from this requirement presents problems such as well security and accidental or delibrate contamination of major groundwater aquifers through such wells.

The depth at which groundwater monitoring wells are required should be established by the local Regional Water Quality Control Board and the local agency.

2641 (c) (4)--Facilities utilizing groundwater monitoring in the absence of vadose zone monitoring should be limited to areas of extremely high groundwater. Many facilities monitored in accordance with this section will not be obtaining the neccessary early warning leak detection protection obtained from vadose zone monitoring.

2641 (c) (5)--A monitoring alternative that does not utilize vadose zone or groundwater monitoring techniques does not provide an adequate level of leak detection protection.

Limiting this monitoring alternative to motor vehicle storage tanks only is inconsistant since many of such facilities utilize waste oil holding tanks that would require the installation of vadose zone or groundwater monitoring wells.

2641 (c) (5,6)--Inventory reconciliation to be performed in accordance with Subsection (b) of Section 2644 is unachieveable since input meters are not utilized for on-site motor vehicle fuel deliveries. Metering occurs at the distribution point, however, the equipment used and the level of accuracy that exists are incompatible with that of on-site metering. Therefore monitoring alternatives 5 and 6 of Section 2641 cannot be achieved.

2641 (c) (7) (A)--This section is vague and unenforcable since limited input and withdrawls is not specified, and small tanks is not defined.

2641 (c) (7) (B) (ii)--This section is unenforcable.

2641 (c) (8) (A) (i)--Local agencies do not have the ability to verify the existance of sufficient funding, therefore this section is unenforceable.

2641 (c) (8) (A) (ii)--This section would require the local agency to enter into a contract with various tank owners which cannot be done.

2644 (e)--The submittal of quarterly reports verifying compliance is unneccessary, will create additional administrative work for local agencies, and is inconsistant with the annual reporting requirements.

2645 (h)--Compositing samples on a depth basis is inconclusive, unnecessary, and excessive for a leak detection technique where only the presence of possible contaminants need be detected. If the presence of contaminants are verified, a more detailed site investigation may be required to further define the extent of verified contaminents.

2645 (f)--This section should read "Borings shall be described in accordance with the provisions of Subsections 2648(t) and (u) of this article."

2672 (b) (4)--This section is unenforceable since the reuse of underground storage tanks occur outside of jurisdictional boundaries and is beyond local agency enforcement powers.

2672 (d)--Closure of motor vehicle fuel, waste oil, or bulk oil underground storage tanks by removal lend themselves to visual inspection. A visual on-site tank and soil inspection will establish the presence of contamination. It is suggested that tanks that stored material with properties that enable a visual inspection utilized this method for the initial determination of the existance of possible contaminants. If the presence of contaminants are verified, a more detailed site investigation shall be employed.

2712 (d)--On-site installations may pose a burden to local agencies responsible for large jurisdictional areas. Local agencies should have the option of requiring an installation certification

Thank you for the opportunity to comment on the draft regulations. Please contact Mr. Carl Sjoberg at (213) 738-2527 if you have any questions on the above.

Very truly yours,

T.A. Tidemanson
Director of Public Works

for David Gmokara
Kenneth R. Kvammen
Division Engineer
Sanitation Division

RHW

dc:DYM,KRK/DY,CWS,RHW,File

#118

BOMA

BUILDING OWNERS & MANAGERS ASSOCIATION OF SAN FRANCISCO • 690 MARKET ST., SAN FRANCISCO, CA 94104 • 362-8567

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JOSEPH F. MURPHY
EDUARD STILL

October 22, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Dear Mr. Singer:

Re: Proposed Regulations Governing Underground Storage of Hazardous Substances

Building Owners & Managers Association (BOMA) of San Francisco is a non-profit trade association representing the ownership and management of over 200 office buildings in the City and County of San Francisco. There are five other local BOMA associations in the State of California.

On October 17, 1984, we received a notice of the public hearing scheduled for October 23 in Sacramento regarding the above named subject. This notice did not come from the State Water Resources Control Board, but rather, was forwarded to us by one of our members. Because we have only just received this information, we have not had adequate time to evaluate the potential effect of this proposed rulemaking upon our members.

We are an interested and affected party, and we certainly desire to take the time to review and fully understand the proposed regulations governing underground storage of hazardous substances. What makes us an affected party by these proposed regulations is the fact that many office buildings have underground diesel fuel tanks which are required to operate emergency standby power equipment.

One question that comes to mind is this. Has there been any evaluation of such diesel tanks which demonstrates a history of leakage?

The monitoring and testing methods called for by the proposed regulations are quite extensive. We would like the opportunity to verify whether they are necessary to that extent, and whether the techniques proposed are valid for our specific situation.

Article 3

Section 2633, page 3.7, line 17, add 2633 "(g)" to read:

(g) " Suction piping systems are exempt from secondary container requirements, as required by permit, with the principal of operation providing self testing."

Section 2634 (a), page 3.8, line 16, add 2634 (a) "(5)" to read:

(5) " Annual survey of cathodic protection system to include tank potential measurement and anode output."

We would certainly like the opportunity to review the regulations in their revised form as soon as they are available, and would appreciate it if you would see that we are on the distribution list.

Sincerely,

Marc Intermaggio

Marc Intermaggio

MLI:lt

#118-B

NOV 26 1984

✓ Orig - DTS
cc - Board
mac, WGP

BOMA

BUILDING OWNERS & MANAGERS ASSOCIATION OF SAN FRANCISCO • 690 MARKET ST., SAN FRANCISCO, CA 94104 • 362-8567

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C. RAY McCULLOUGH
MICHAEL J. MIGLINO
JOSEPH F. MURPHY
EDUARD STILL

November 20, 1984

Mr. Michael A. Campos
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Re: Proposed Regulations Governing Underground Storage of Hazardous Substances

Dear Mr. Campos:

We have received the revised proposed regulations governing underground storage of hazardous substances, dated November 9, 1984. Upon review of this revised draft, we find that the revisions made address our major concerns.

Specifically, we strongly support the addition of Alternative #7 to Section 2641(c), Underground Storage Tank Gauging and Testing. We feel that providing a number of different methodologies for meeting the leak detection criteria is not only a reasonable approach, but will also greatly facilitate achieving the goal of protecting our groundwater.

Again, we are in support of the proposed regulation as it now stands in the November 9, 1984 draft. Should there be any substantive changes to the November draft, and particularly to Sections 2640 and 2641, we would appreciate the opportunity to review and comment upon such changes.

Please make our letter a part of the hearing record on November 27, 1984.

Further, please be sure to send us a copy of the final regulation. Thank you.

Sincerely,

Edward G. Zelinsky
President, BOMA San Francisco

EGZ:lt

cc: Linda Stockdale Brewer, Director
Office of Administrative Law

#119

General Telephone Company of California

Post Office Box 725
Chino, California 91710

In Reply Refer To
1608
L7.6

October 22, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Dear Mr. Singer

The following comments have been prepared regarding the draft regulations dated 8/23/84, proposed to be adopted in Title 23 of the California Administrative Code for the control of underground storage of hazardous substances.

We appreciate the opportunity to address the proposed regulations and provide comments. General Telephone Company of California agrees that it is essential to protect the ground waters from contamination of unauthorized discharge of hazardous substances stored in underground storage tanks.

The submitted comments are intended to maintain the integrity of the proposed regulations with some minor language changes and proposed amendments which we believe could be instrumental in implementing a proper, reasonable and totally effective program.

It is unfortunate that AB 1362 permits in excess of 75 cities or counties to have separate ordinances which are equivalent to or more restrictive than the State Regulation. This, in addition to the State Regulation being written to contain statewide minimum standards, poses potentially burdensome administrative problems to developing a comprehensive program for industry and local agencies alike.

The cost of compliance must be considered, expecially the financial impact on small business. We must protect the state water source utilizing the most economical and safe methods with known technology. One of our main concerns is the requirement of the numerous groundwater monitoring wells as stated in Article 4. This requirement has the potential of creating an unintentional route for any hazardous substance to flow directly to groundwater.

I appreciate the difficulty encountered by the State Water Resources Control Board in addressing the complex task of underground storage regulations.

I hope you will find our comments objective and productive. If you wish to discuss any of the items please contact me at (714) 627-6326.

M. H. SCHMIDT
Asset Recovery Administrator

Enclosures

Article 2 Definition of Terms

Section 2620, page 2.2, line 13, after "vehicles" insert:

" and stationary internal combustion engines for the purpose of providing standby power"

Statement of Reason

Authority section 25291 (a) (7) and 25292 (b) (3) of the Health and Safety Code, states in part:

" The design and construction of underground storage tanks for motor vehicle fuels need not meet the requirements of paragraphs (1) to (6) inclusive if all the following conditions exist."

The intent of this reference is to specify what is contained in the tank, not the specific use of said product. A motor vehicle fuel used for stationary engine imposes no added threat to the environment than the same fuel used for the propulsion of a motor vehcile. Storage tanks for either purpose should have the same application of the proposed regulation.

Article 2 Definition of Terms

Section 2620, page 2.4, line 4, before definition of "Storage"

insert definition of:

" Stationary Internal Combustion Engines means any stationary engine that burns gasoline or diesel fuel for the purpose of providing standby power to service facilities including but not limited to hospitals, utilities, and safety organizations."

Statement of Reason

See Statement of Reason under 2620, page 2.2, line 13, proposed changes.

Article 2 Definition of Terms

Section 2620, page 2.4 line 10, after "container" exclude:

" including connecting piping"

Statement of Reason

Piping must be addressed separately and/or in Tank System definition and subsequent tank system requirements within the proposed regulation as most leaks occur in pipes and not in the tanks.

(See proposed change in Section 2620, page 2.4, line 13).

Section 2620, page 2.4, line 13, after "tanks" insert:

" including connected piping which under normal operation contains liquid, and is used synonymously with "Underground storage tanks" ."

Article 3

Section 2634 (d) (1), page 3.10, line 6, after "gain of" delete "50" insert "100 gallons, or two (2) percent of the product daily throughput, whichever is greater."

Statement of Reason

The established 50 gallon daily gain or loss is unrealistic, especially when applied to the larger storage tanks. Temperature can cause volume measurements to vary in addition to variances involved with stick gauging, inventory control and meter calibrations. The 50 gallons in one day would be restrictive. The two (2) percent or 100 gallon indicator is more realistic without the obvious concerns related to size of tank or climate changes.

Article 4

Section 2640, Applicability

add 2640 "(j)" to read:

(j) " All owners of new underground storage tanks containing motor vehicle fuels subject to this section may be considered to comply with monitoring requirements herein when the following elements are met:

(1) Provide primary and secondary containment with applicable periodic monitoring of secondary container or annular space of double-walled tanks.

(2) Inventory control per Section 2643.

(3) Tank testing per Section 2642 when inventory control indicates loss or gain.

(4) Monitoring all pressure piping systems, utiliziing an on-line pressure loss detector and flow-reduction device.

(5) Annual corrosion survey to assure design criteria."

Section 2640, Applicability (continued)

add 2640 "(k)" to read:

" All owners of existing underground storage tanks containing motor vehicle fuels subject to this Section may be considered to comply within monitoring requirements herein when the following elements are met in subsection (1) or (2) below:

(1) all requirements of this section, subsection (j), (1) through (5) are met.

(2) All single walled steel or steel clad tanks are provided with cathodic protection and

(a) Annual survey of cathodic protection system is conducted to include tank potential measurement and anode output.

(b) Inventory control per Section 2643.

(c) Tank testing for permit and periodically or when inventory control indicates loss or gain.

(d) Monitoring all pressure piping systems utilizing an on-line pressure loss detector and flow-reduction device.

Section 2640 (continued)

Statement of Reason

Monitoring or observation wells should not be arbitrarily required for existing facilities where the owner/operator can substantiate the integrity of the existing tank, i.e.:

1) steel clad tank includes cathodic protection and system has been maintained.

2) steel clad tank was installed in high resistivity soil less than 10 years ago, tank integrity has not been compromised and newly installed cathodic protection will maintain tank criteria.

Attached (Exhibit I), is a modification design to the proposed monitoring system that should be considered. Although monitoring and leak detection is required to protect our ground waters we believe protection should first be considered without the construction of numerous wells from the surface to groundwater which would create an unintentional flow of any hazardous substance and subsequent ground pollutants to the groundwater. If the Fiscal Impact Statement, dated 8/10/84, is correct in its assumption of 200,000 storage tanks within the State of California, the potential of pollutants being unintentionally carried through monitoring wells is substantial.

MODIFICATION TO PROPOSED MONITORING SYSTEM FOR EXISTING BURIED METALLIC FUEL TANKS

Ref. Uniform Fire Code 1979 Edition

In High Resistivity Soil Above 10,000 Ω/cm	In Low Resistivity Soil Below 10,000 Ω/cm	All Tanks Installed with Cathodic Protection
1. Tank buried less than 10 years.	1. Tank buried less than 5 years.	1. Tank buried with cathodic protection system installed and maintained by approved Corrosion Engineer or Corrosion Specialist.
2. Hydrostatic or pressure test.	2. Hydrostatic or pressure test.	2. Re-test hydrostatic or pressure every 3 years, or less.
3. Install appropriate cathodic protection system and maintain on annual basis.	3. Install appropriate cathodic protection system and maintain on annual basis.	3. Record and report annually "fuel in" vs "fuel out" to substantiate no leaks.
4. Re-test hydrostatic or pressure every 3 years, or less.	4. Re-test hydrostatic or pressure every 3 years, or less.	
5. Record and report annually "fuel in" vs "fuel out" to substantiate no leaks.	5. Record and report annually "fuel in" vs "fuel out" to substantiate no leaks.	

This approach would eliminate the need to drill many wells that will have the potential to carry contaminates into the ground water.

This plan will substantially reduce the cost of the program, which will be passed on to the consumer by industry.

W. R. Stead, September 1984

Article 4

Section 2641 (c) (3), page 4.6, line 14, after "performed" delete "daily at a minimum, and shall be more frequent if necessary" and insert " at frequent intervals as per permit".

Statement of Reason

Daily visual inspection could add an unreasonable cost to the owner/operator if the tanks are located at an unmanned facility. If the tank and leak detection system meets other criteria of the proposed regulation, this cost would not be justified.

Article 4

Section 2644 (b), page 4.16, add:

2644 (b) "(3)" Corrosion resistant and tanks under cathodic protection installed at a facility within the last fifteen years where soils or records at the time of installation did not show evidence of prior leaking.

Statement of Reason

Consistent with the Uniform Fire Code 1979 Edition.

Article 4

Section 2645 (b), page 4.20, add:

2645(b) "(5)" to read:

(5) "Vadose-zone monitoring is not required if owner has tanks less than fifteen (15) years old which are corrosion - resistant, with cathodic protection, and records do not indicate any prior leakage of motor vehicle fuels."

Article 4

Section 2646, Ground Water Leak Detection Monitoring

Suggest Section 2646 be revised in its entirety to consider the following:

1. Good tanks as previously described in revised Sections 2640, 2644, and 2645, installed with secondary containment and/or cathodic protection should not require monitoring wells when proper inventory controls are applicable and/or available.

2. A minimum number of wells should be required to reduce the access route of potential contaminates to the water table.

3. Wells should not extend below lowest anticipated ground water level but rather below the top of the saturated aquifer.

4. In Section 2646 (d) with water level above a point 5 feet below tank invert, etc., cathodic protection should be required even with secondary containment of steel clad tanks.

5. Regulation should not require certain number of wells per tank or facility. Locally it may be determined that a lesser quantity may provide necessary protection depending on size of tank, soil resisitivity, depth, etc.

6. As stated in subsection (f) monitored at least once "per week" should be changed to "monthly."

Article 4

Section 2647 (c) (1) (d) (5) (6) (7)

Suggest the following in each subsection.

" well shall extend to the base of the aquifer or to a depth of 50 feet, whichever is lessor . . . . . "

Statement of Reason

It is our recommendation that wells never extend to a depth greater than 50 feet. The migration rate of a hazardous substance may be such that detection is desired long before it could ever travel 50 feet, and certainly not 200 feet. It is not good practice to open up pollutant routes to the depth of 200 feet or open up wells over 50 feet beneath the surface.

Article 5

Section 2651 (b) (2), page 5.2, line 18, after "clean-up" delete "and cost"

Section 2652 (2) (c) (3), page 5.6, line 13, after "to-date" delete "and cost.". line 14, after "actions," insert "cost data may be included."

Statement of Reason

The requirement to report costs is not supported by statutory authority. The mandatory requirement to report costs can involve extensive activity and can administratively and/or materially add to the cost of the project.

Article 5

Section 2652 (2) (b), page 5.6, line 3 after "release has been detected" delete "or should have been detected."

Statement of Reason

This statement is ambigous and potentially unreasonable.

Section 2652 (2) (b), page 5.6, line 4, after "agency," insert State Office of Emergency Services" and delete "and the Regional Water Quality Control Board."

Statement of Reason

Staturoty law requires that a spill be reported to the local agency and requires the Office of Emergency Services (OES) prepare a report of releases. OES accepts the responsibility to notify the Regional Water Quality Control Board as appropriate.

Article 7

Section 2670 (e), page 7.2, line 1, after "cessation of" delete "waste" and insert "hazardous material"

Statement of Reason

To be consistent with wording within regulations.

Article 7

Section 2712 (f), page 10.7, line 3,

after "than" delete "three months and cannot be renewed or extended." and insert "six months and may be extended for a maximum of six months, if at the discretion of the local agency, the extension would not be detrimental to the public's interest and the permittee has good cause to request such extension."

Statement of Reason

A three-month period may not be adequate time for design, evaulation, testing and procurement of permit approval. It is our belief that both industry and the local agencies would have significant difficulty complying with a three month time schedule.

#120

ENVIRONMENTAL HEALTH SERVICES

COUNTY OF SAN BERNARDINO
ENVIRONMENTAL
PUBLIC WORKS AGENCY

☒ 385 North Arrowhead Avenue · San Bernardino, CA 92415-0160 · (714) 383-1617
☐ 220 East "D" Street · Ontario, CA 91764 · (714) 988-1324
☐ 15579 Eighth Street · Victorville, CA 92392 · (714) 245-3216
☒ Hazardous Waste & Toxics Control Section . 714-383-7170

KENNETH C. TOPPING
Deputy Administrator
Community Development
RICHARD L. ROBERTS, R.S., M.P.H.
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PLEASE REPLY TO ADDRESS CHECKED

October 22, 1984

Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

SUBJECT: COMMENTS ON ADOPTION OF STATE REGULATIONS AS PERTAINING TO ASSEMBLY BILL 1362

Article 1

Section 2611 -- Clarification of exemptions for Counties or Cities with ordinances adopted prior to January 1, 1984.

Section 2611(5) -- Delete -- Storage of hazardous waste stored at a transfer/storage disposal facility presents as much threat to groundwater as any other tank and therefore must be called upon to meet monitoring and construction standards.

Section 2611(b) -- Add -- Definition of sump, separator, and separator sumps which are not considered underground tanks for purpose of this ordinance.

Article 2

Section 2620 -- Motor vehicle fuel should be defined by constituents of product, not according to use.

Article 3

Section 2633(f) -- Specific threshold limits must be added. Some leak detection will allow 1½ to 3 gpm leak before flow restriction or shutdown. Over a period of time this would represent a substantial release.

ROBERT B. RIGNEY
County Administrative Officer
JACK E. PEDDY, Administrator
Environmental Public Works Agency

Board of Supervisors

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Section 2634(c) -- Due to high initial costs of permanently installed monitoring systems and the unknown reliability, we feel local government should be allowed to set their own monitoring guidelines, taking into consideration depth to groundwater and contents of vessel. Periodic testing would be performed by qualified testing firms.

Section 2634(c) -- Due to unknown reliability of monitoring systems, these systems must be checked and calibrated at a minimum of semi-annually.

Article 4

Section 2640(g) -- Groundwater assurance well can provide a conduit in which in hazardous substance may have immediate route of entry to groundwater. Drilling through impervious layers or drilling to substantial depth may nullify use of vadose zone wells, as groundwater, through assurance wells, may be contaminated before vadose wells at 30' to 50' can detect contaminants.

This Department does not approve of groundwater assurance wells for underground tank leak detection. We strongly suggest this section [Section 2640(g)] be deleted.

Section 2642(d) -- Product-tight testing is expensive. We should weigh the beneficial aspects of yearly tests against the cost factors. If vadose zone monitors are to detect leak contamination, then why should we require tank tests to detect leaks? Perhaps we should consider testing on a two to three year basis and not yearly. Yearly reports must also be logged and monitoring by local agencies require more personnel and higher fees.

Section 2644(e)(3)(A) -- The possibility exists here that a highly contaminated sample near a leaking tank may be compromised by other samples from non-leaking tanks at the same site. Decision to composite samples should be made on site-per-site basis.

Section 2644 -- Add -- Background samples are needed to make determination of site contamination versus natural hydrocarbon in soil.

Section 2645(h) -- Local agencies should be given power to determine whether continuous, weekly, or monthly monitoring is justified dependent on tank construction and environmental factors.

Section 2647 -- Delete -- See Section 2640(g).

Article 5

Section 2651 -- Any release from a primary container must be reported to a local agency so that mitigation and repair measures can be approved.

Article 6

Section 2661 -- Evidence shall demonstrate to the satisfaction of the local agency that no significant contamination of soil or groundwater has taken place. Such evidence shall be demonstrated by appropriate soil samples or other approved techniques.

Article 8

Section 2682 -- Site-specific variance should be made at the local level by local agencies, therefore, Section 2682 should be deleted.

Article 9

Section 2691 -- Delete -- Local agencies must have the capability to address local considerations without bearing an undue financial burden.

Article 10

Section 2711(c) -- San Bernardino County is opposed to Section 2711(c) as it would impose a State surcharge on local government activities. Section 2711(c) is also in direct opposition to California Health and Safety Code, Chapter 6.7, Section 25288, which exempts those cities, counties, or cities and counties, who adopted ordinance prior to January 1, 1984.

Please address reply to Jim E. Smith, San Bernardino County Department of Environmental Health Services, 385 North Arrowhead, San Bernardino, CA 92415.

RICHARD L. ROBERTS, R.S., MPH
Director

JIM E. SMITH, R.S.
Environmental Specialist III

JES:css

County of San Bernardino • Environmental Public Works Agency
DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
San Bernardino, CA 92415-0160

Harold Singer
Division of Technical Services
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

RE: COMMENTS ON AB 1362

Original Comments 121-130

#122

GROUNDWATER MONITORING GUIDELINES

December 1983

Santa Clara Valley Water District

SANTA CLARA VALLEY WATER DISTRICT

GROUNDWATER MONITORING GUIDELINES

DECEMBER 1983

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101-2836tp

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SUMMARY

The purpose of the monitoring program is to detect as early as possible any leakage from an underground hazardous material storage facility should one occur. To accomplish this, site-specific monitoring facilities are to be constructed adjacent to the storage facility and are to monitor either the first aquifer zone or the immediate unsaturated zone beneath the storage facility, depending upon the depth of the water table beneath the facility.

This monitoring program as herein presented is one means to validate the storage facility performance and is to be used in conjunction with the Hazardous Materials Storage Permit Ordinances as adopted by the cities and the County of Santa Clara. It is the purpose and intent of the Permit Ordinance to protect groundwater supplies from contamination which might result from leakage of underground storage facilities.

These Guidelines will outline requirements, recommendations and suggested alternatives for the proper monitoring of existing underground storage facilities. These Guidelines also provide a monitoring schedule for the installation. Any unusual or unique installations will be handled on a case by case basis.

Classification of Hazardous Materials Storage Facilities

Non-Motor Fuel Storage

Non-motor fuel storage facilities include all commercial and non-commercial underground tanks for the storage of non-motor fuel hazardous materials as described in the Hazardous Materials Storage Permit Ordinances. Bulk storages of waste oil not located at retail outlets (service stations) are included in this classification as such storages could contain other than waste petroleum products.

Commercial Motor Fuel Storage

Commercial motor fuel storage facilities include all underground tanks for storage of motor fuels which are intended for commercial resale, including retail and wholesale

outlets and bulk storage facilities. Also included are bulk storages for transit stations and industrial and municipal facilities as well as individual agricultural and suburban storages greater than 1,000 gallons.

Individual Agricultural and Suburban Motor Fuel Storage

Individual agricultural and suburban motor fuel storage facilities include non-commercial underground tanks of less than 1,000 gallons for motor fuel storage on agricultural properties, on suburban homesites, and on business sites where fuel is stored solely for use by the owner/resident in the course of his business or for his vehicles and equipment. All motor fuel storages for commercial resale are excluded from this classification.

For motor fuel storage, whether it be commercial, agricultural or suburban, the Administering Agency of the Permit Ordinance may reclassify the storage facility on an individual basis. Such individual reclassification may be in accordance with an unusual condition of use or the size of the storage facility.

Monitoring Requirements

In order to provide adequate coverage, monitoring requirements may vary from one storage facility to another based upon the depth of groundwater beneath the facility, the size of the facility and upon the character and properties of the materials stored.

Non-Motor Fuel Hazardous Materials Storage Facilities

Shallow Groundwater Conditions - A groundwater monitoring well shall be constructed at a storage facility where groundwater occurs at a shallow depth, defined as within 45 feet of the surface. Oftentimes the precise depth to groundwater is not known at a storage facility site unless a specific monitoring well exists within 500 feet of the site. In cases where the precise depth to groundwater is not known, the procedure is to drill a hole within the tank backfill or within ten feet of the storage tank down to groundwater or to a maximum depth of 45 feet if groundwater is not encountered. The hole is to be placed on the estimated down groundwater gradient side of the storage

facility, as based upon professional judgement. The hole is to be carefully logged and soils samples obtained for laboratory tests in order to determine concurrent performance of the tank. Soils samples are to be obtained, starting at the bottom of the tank, every five feet to the water table. If water is encountered, a water sample shall be taken. Testing of soil and water samples shall be in accordance with the requirements of these Guidelines.

When the hole is terminated at a depth of 45 feet after failing to encounter groundwater, but in a case where the soils continue to be apparently contaminated based upon field observations, these conditions are to be reported to the enforcing agency. The data will be reviewed and a program for further investigation (which is beyond the scope of this monitoring program) will be initiated where appropriate. All laboratory test results are to be reported to the Administering Agency of the Permit Ordinance (the county or city of jurisdiction).

When groundwater is encountered or known to be within 45 feet of the surface, the drill hole will be extended through the depth of the aquifer to a competent clay layer or aquitard. A competent aquitard is greater than five feet thick. To test the competency of the aquitard or clay layer, the hole must be drilled five feet into it. Then the excess hole is to be backfilled with concrete and the monitoring well shall be completed in the aquifer above it, screening the full thickness of the aquifer. If the clay layer is found to be less than five feet thick, it may be assumed to represent a local lens. Should the first saturated aquifer be greater than 20 feet thick, the well will be completed at a depth of 20 feet below the top of the saturated aquifer.

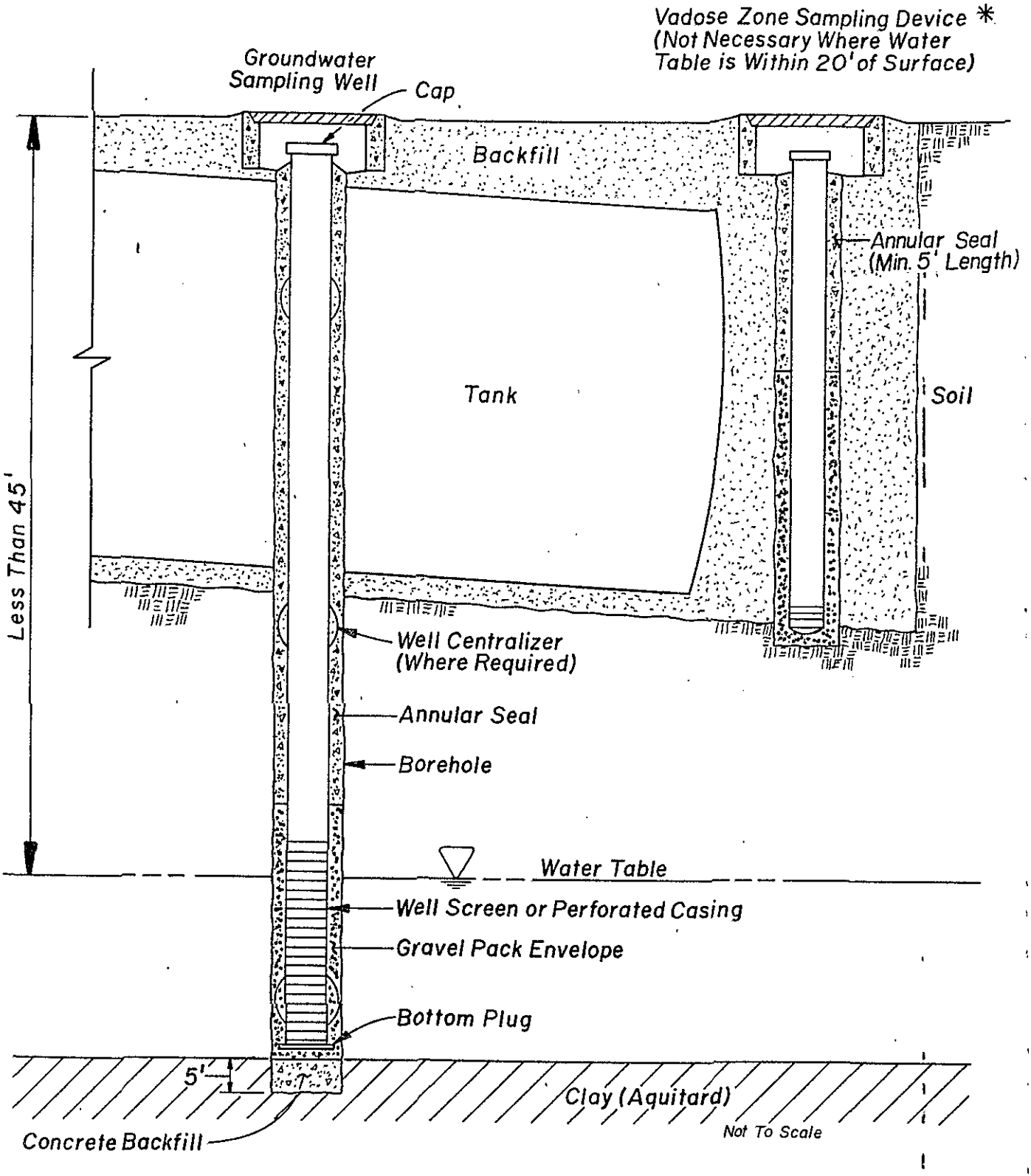
The screened or perforated interval is to be gravel packed to a minimum of two feet above the uppermost screen or perforated interval. An annular seal of neat Portland cement, cement mix or thick bentonite slurry shall be placed from the top of the gravel pack to the surface.

If groundwater is encountered at less than 45 feet but greater than 20 feet from the surface, a vadose (unsaturated zone) monitoring device shall be additionally required so that early detection may be possible by the combination monitoring installation. This vadose monitoring device is to be installed within the tank backfill at the location where the backfill is at the lowest level, if known. The sensing zone of the vadose monitoring device shall be placed at the bottom of the backfill. Required vadose monitoring shall include (1) a vapor monitoring well for volatiles or (2) either a suction lysimeter or an interface well for nonvolatiles. These alternative vadose monitoring devices which may be employed are discussed on Page 25 of the Guidelines. Refer to Figure 1 for a typical example of a monitoring facility herein described, where groundwater occurs at a shallow depth.

Soils sampling procedure, analytical laboratory soils and water testing methods and tests required of the vadose zone monitoring devices are outlined within the body of these Guidelines.

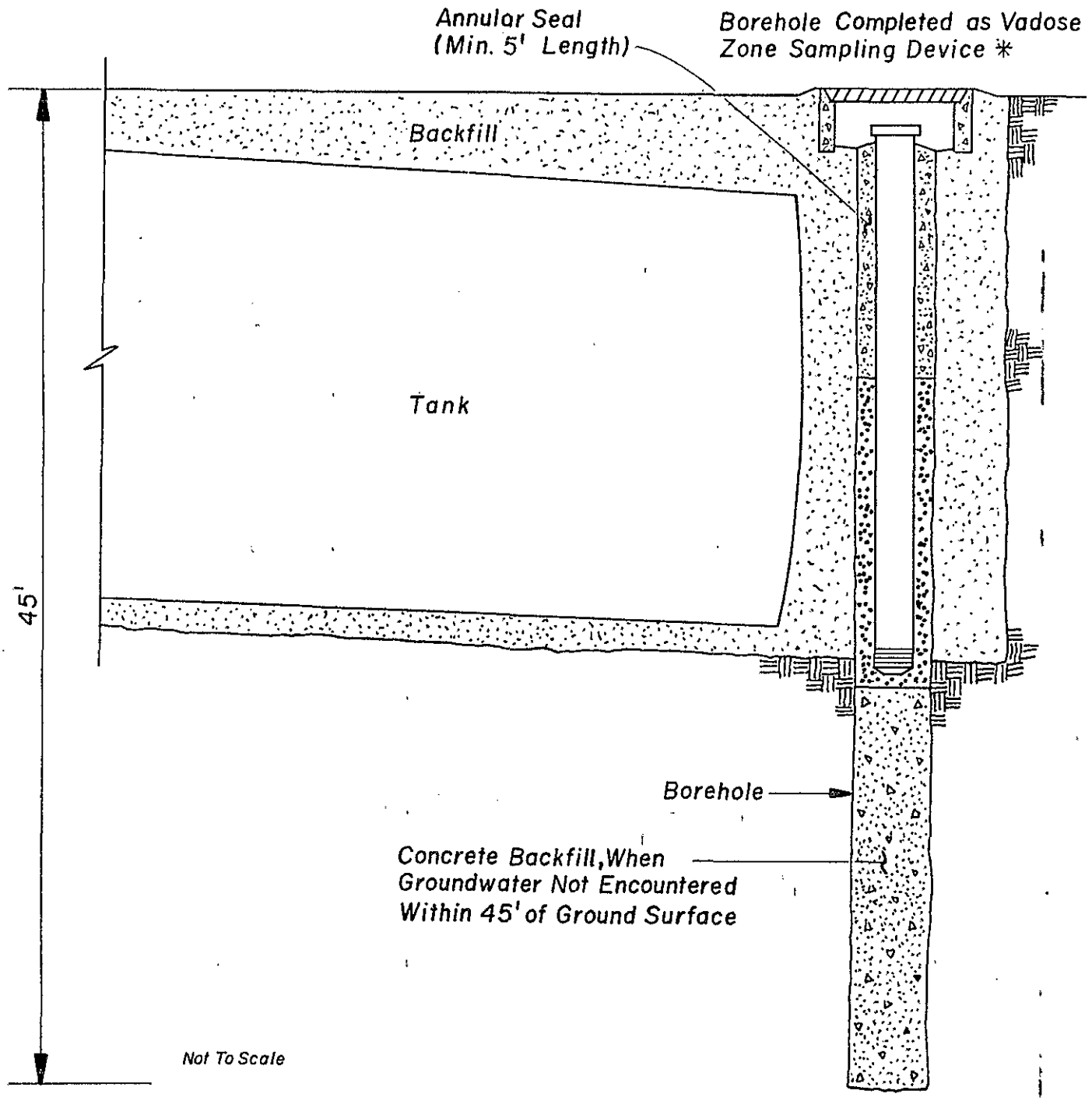
Deep Groundwater Conditions - If groundwater is not encountered within 45 feet of the surface in the drilled hole, the well is to be completed with a vadose monitoring device in the unsaturated zone beneath the tank. The excess hole, drilled to explore for the groundwater and to obtain soils samples, shall be backfilled with concrete and the monitoring device placed within the remaining hole. The concrete backfill is to prevent the hole from serving as a possible conduit for downward movement of any contaminant or drainage water.

If the hole is started within the tank backfill, the vadose monitoring device shall be completed at the bottom of the backfill. Upon this completion a minimum length of five feet of annular seal shall be placed above the sensing zone (gravel packed interval) to the surface to prevent drainage water from entering the borehole. Variance will be allowed for minimum length of annular seal should 5 feet prove to be impractical due to shallow depth of tank backfill for a small tank. Refer to Figure 2 for a typical monitoring installation herein described.



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure I. Typical Monitoring Facility, Non-Motor Fuel Storage Facility, Shallow Groundwater



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 2. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Within Tank Backfill, Unsaturated Conditions

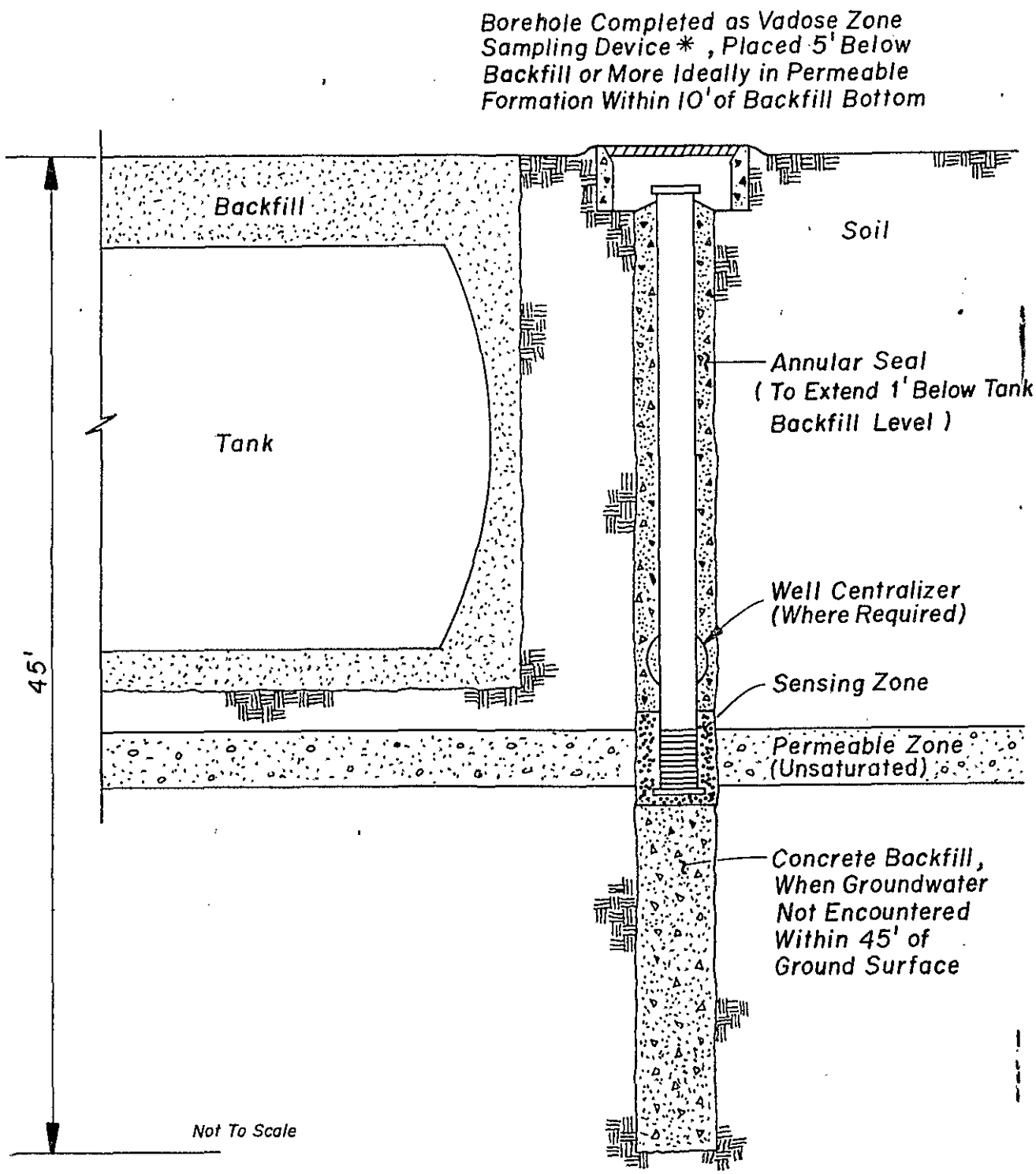
If the hole is started in natural formation outside of the tank backfill, the vadose monitoring device is to be completed at a level five feet beneath the tank backfill or, more ideally, in aquifer materials (herein unsaturated) within ten feet of the bottom of the tank backfill. The occurrence of such an ideal situation is determined from the log of the borehole when it was drilled. An annular seal shall be installed above the sensing zone of the monitoring device, which shall be from a level one foot below that of the tank backfill bottom, to the surface. Refer to Figure 3 for the typical monitoring installation herein described.

Adequacy of Monitoring Coverage - The number of monitoring wells, or combination of groundwater and vadose monitoring wells shall depend upon the size of the storage facility (individual tank or cluster of tanks). One well or combination shall be required for each dimensional length, or collective length when tanks are clustered, of 35 feet or less. Where more than one well or combination is required, they shall be appropriately distributed so as to accomplish optimal distributed coverage, taking into consideration the gradient of groundwater for groundwater monitoring wells and the lower levels of the tank backfill bottom for vadose monitoring wells.

Where groundwater occurs at a depth greater than 45 feet, only the first hole shall be required to make this determination. However, soils samples shall be obtained from the additional wells from levels beneath the tank and the hole shall be continued to a level where the soil becomes apparently free of contaminant as based upon field judgement (but to no greater depth than 45 feet).

Commercial Motor Fuel Storage Facilities

The monitoring well requirement for commercial motor fuel storage shall be essentially the same as for a non-motor fuel hazardous materials storage facility. The only difference in concept is in the extended upper length required in the screened or perforated casing interval of the groundwater monitoring well. As motor fuel products are essentially nonmiscible with water and are lighter than water, they will float on top



* Vapor Monitoring Well Where Volatile Compounds Are Stored and Either a Lysimeter Installation or an Interface Well Where Nonvolatiles Are Stored.

Figure 3. Typical Monitoring Facility, Non-Motor Fuel and Commercial Motor Fuel Storage Facility, Placed Outside of Tank Backfill, Unsaturated Conditions

of the water table. The important interval to monitor is at the motor fuel-water interface. Since groundwater levels fluctuate seasonally and on a long-term basis, the screened interval would have to be necessarily longer to accommodate these fluctuations. This consideration may also apply to certain non-motor fuel hazardous materials that exhibit such similar properties as motor fuels.

All other well requirements, including the possible need of a combination groundwater-vadose monitoring installation, are the same as for the monitoring of non-motor fuel storages. Refer to Figure 4 for monitoring installation herein described. Also refer to Figures 2 and 3 where they apply to cases where the groundwater is not encountered within a depth of 45 feet.

The required soils sampling and testing shall be the same as for non-motor fuel storage facilities. These procedures are outlined in the body of the Guidelines. Also water sampling procedure and field testing of water samples are outlined in the body of these Guidelines.

Individual Agricultural and Suburban Motor Fuel Storage Facilities

The monitoring requirement of individual agricultural and suburban motor fuel storage facilities shall be accomplished by the installation of one well to be placed within the tank backfill and shall be extended to the bottom of the backfill, regardless of the depth to groundwater. This well shall be placed at the lowest level of the backfill if known. The lower one-half of the total length of this well shall be screened or the casing shall be perforated and gravel packed. An annular seal of concrete, neat cement, cement grout or a thick slurry of bentonite shall be palced above the gravel pack extending to the surface to prevent surface drainage from entering the well. Such a well is referred as an "interface vadose monitoring well" when groundwater is not encountered as the sensing zone monitors the backfill-natural formation interface. Refer to Figure 5 for such a typical installation.

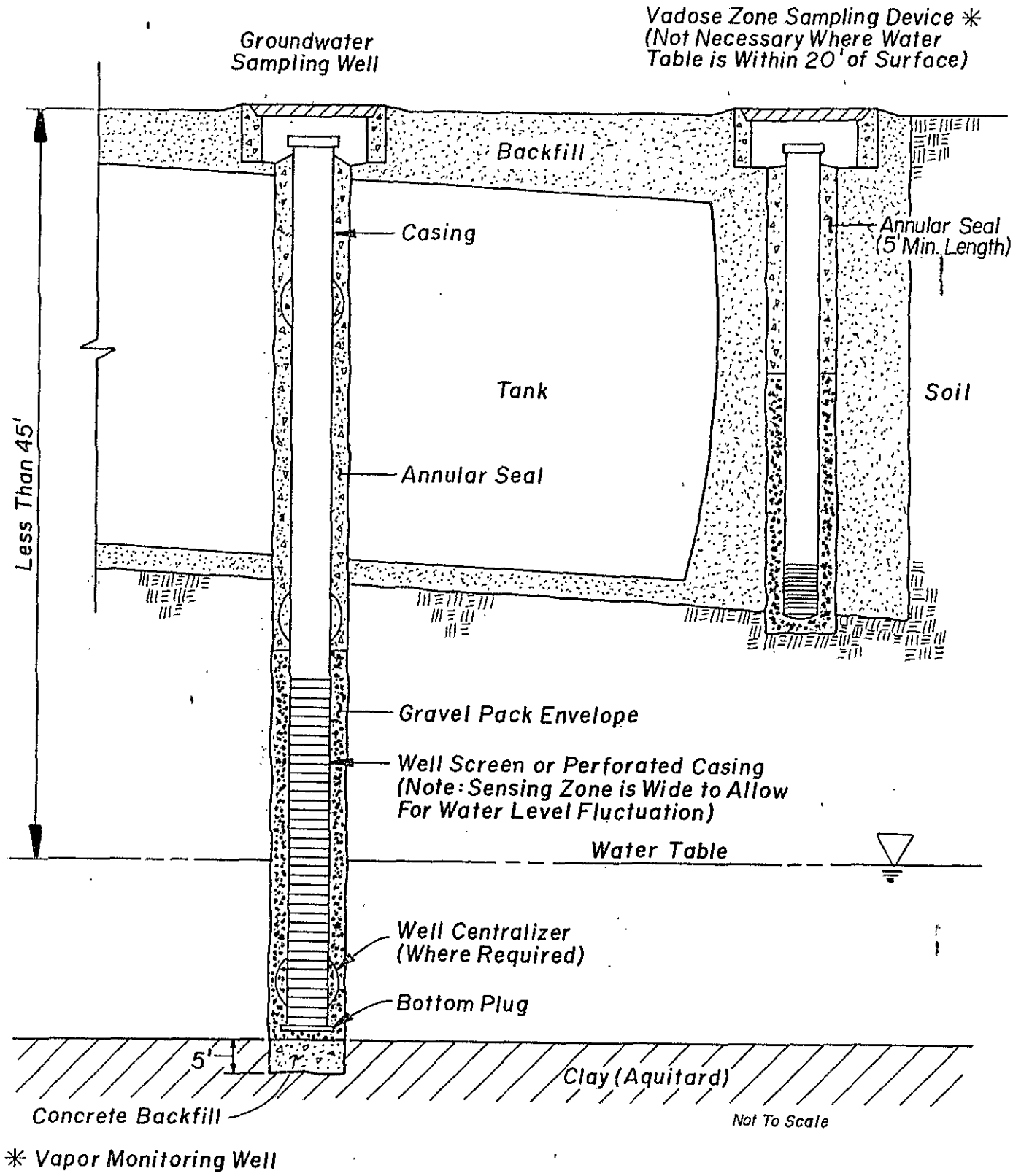


Figure 4. Typical Monitoring Facility, Commercial Motor Fuel Storage Facility, Shallow Groundwater

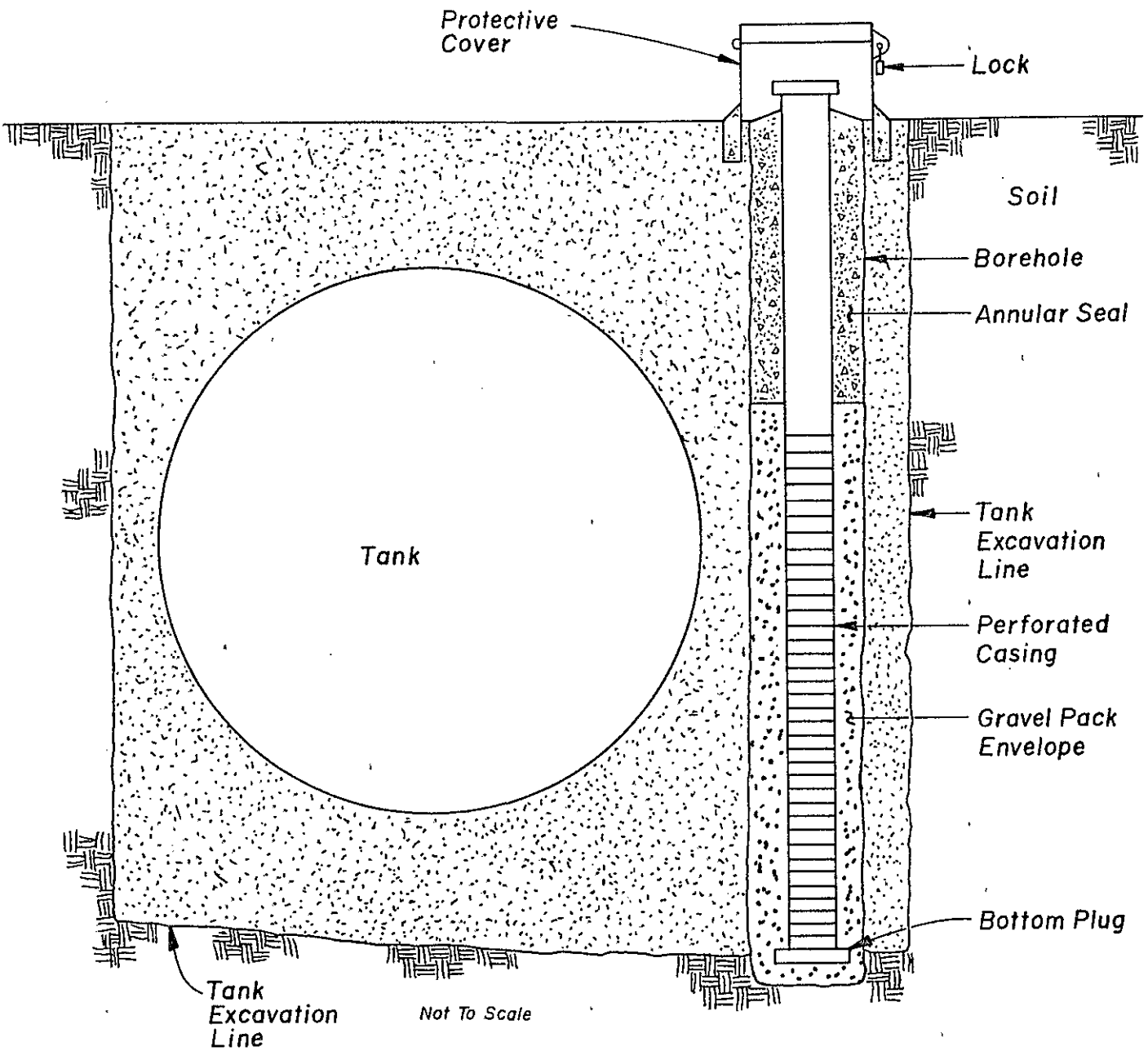


Figure 5. Typical Monitoring Facility, Individual Agricultural and Suburban Motor Fuel Storage Facility
(Serves as an Interface Well Under Unsaturated Conditions)

Monitoring is to be accomplished by determining the presence or absence of motor fuel product which might accummulate atop the groundwater or, in the absence of groundwater, upon the tank backfill-natural soil interface should a leak occur or surface drainage water leaches down. Such a determination is to be made by probing the well with a clear (transparent) plastic ball-valve bailer whereby visual determination is to be performed. The well can also serve as an indicator of the presence of motor fuel vapors.

The monitoring well can be installed by a power auger or a hand auger. A soils sample shall be obtained at the bottom of the bore hole for field inspection in order to determine the apparent presence or absence of motor fuel contamination. The results of the judgemental field inspection are to be reported to the Administering Agency of the Permit Ordinance.

Monitoring Schedule

The schedule for groundwater sampling and testing and for obtaining measurements of vadose monitoring devices is as follows:

A. Non-Motor Fuel Storage Facilities: Semiannually for groundwater sampling and laboratory testing and for vadose monitoring measurements.

B. Commercial Moter Fuel Storage Facilities: Monthly for groundwater sampling and field testing and quarterly for vadose monitoring measurements.

C. Individual Agricultural and Suburban Motor Fuel Storage Facilities: semiannually for inspections.

INTRODUCTION

Hazardous Materials Storage Permit Ordinance

It is the purpose and intent of the Hazardous Materials Storage Permit Ordinance to protect groundwater from contamination which might result from leakage of underground storage facilities. The protective means are to be approached from the standpoint of leakage prevention or of early detection through validation systems to determine storage facility performance.

Monitoring Program and Guidelines

The monitoring well program as herein presented is one of the means to validate storage facility performance and to determine, in a timely manner, any occurrence of leakage. These Guidelines will outline requirements, recommendations and suggested alternatives for a proper monitoring installation. They will also cover soils sampling procedures, means of obtaining samples or measurements, analytical testing methods, monitoring schedules and reporting procedures.

Administration and Enforcement Agencies

The administration and enforcement agencies of the Hazardous Materials Storage Permit Ordinance are Santa Clara County and the individual cities that have adopted a Permit Ordinance. All applications under the Permit Ordinance are to be initiated through the administering and enforcing agency having jurisdiction in the area.

The Santa Clara Valley Water District (SCVWD), a Countywide agency, through Ordinance 75-6, is the administering and enforcing agency for the construction of wells and the destruction of abandoned wells. All monitoring wells which are constructed in natural formation, and therein have the potential to compromise or violate the natural protective overlying formations, come under the provisions of SCVWD Ordinance 75-6. These Guidelines for monitoring well construction included herein were prepared by the SCVWD and serve as an extension of Ordinance 75-6 (See Appendix A). SCVWD will

serve as the administration and enforcement agency for the construction of monitoring wells in conformance with the requirements of the Hazardous Materials Storage Permit Ordinances. Where a monitoring well is required, the owner shall be responsible for obtaining a permit from the SCVWD for the monitoring well construction. See Standards for Well Construction in Appendix B.

When the monitoring well is no longer needed and is to be abandoned, it shall be properly destroyed in accordance to the provisions of Ordinance 75-6. The well owner is responsible for obtaining a well destruction permit from the SCVWD and properly destroying the well. See Standards for Well Destruction in Appendix C.

CLASSIFICATION OF HAZARDOUS MATERIALS STORAGE FACILITIES

See Summary on Page 1 of these Guidelines.

MONITORING PROGRAM

Purposes, Scope and Limitations

The purpose of a monitoring well under this program is to detect as early as possible any leakage from an underground hazardous material storage facility, should one occur. To accomplish this, a site-specific monitoring well is to be constructed adjacent to the storage facility (within ten feet of the tank). The well is to monitor either the first aquifer zone or the immediate unsaturated zone beneath the storage facility, depending upon the depth of the water table beneath the facility; in some cases both the groundwater and overlying unsaturated zones may require monitoring installations. Additionally, the monitoring well is to be constructed in a manner which will not allow the well to serve as an avenue for the transmission of contaminants, either from the surface to the first aquifer or from the first aquifer or unsaturated zone should a leak occur to any underlying aquifer or underlying unsaturated zone.

This monitoring program is limited solely to the detection of facility leakage and is not intended to have any other investigative purpose.

Responsibility of Performance

These Guidelines will suggest typical monitoring well construction, taking into account various hydrogeologic conditions and contaminant properties in meeting the objectives of the monitoring program. The examples presented are expected to be appropriate to suit most of the varying local conditions. However, it is recognized that the specified requirements may not be appropriate to all conditions and, hence, individual well designs are not limited to the examples presented. Nor do these Guidelines preclude the use of other methods or equipment. However, any alternatives or deviations from the suggested Guidelines must meet the objectives of the program and must provide equivalent or superior protection of the aquifers by their construction. When an alternative concept is considered by the enforcing agency, the SCVWD, shall review and approve or disapprove its use.

As provided in the Permit Ordinance, it is intended that the owner of any underground storage facility shall install and perform the monitoring program. As the installation and performance of the monitoring require professional judgments and important field decisions, the owner is responsible for the enlistment of a qualified professional (or consultant) to assume the technical responsibility for performance. For the purposes of these Guidelines, the overall technical responsibility is to be assumed by a State Certified Engineering Geologist or a State Registered Civil Engineer.

The only exception to the requirement of a State registered or certified professional is in the installation and monitoring program for individual agricultural and suburban motor fuel storage facilities

Compliance with Existing Statues

The implementation of the monitoring program must comply with existing federal, State and local ordinances. All monitoring wells, regardless of depth, which are drilled into the natural formation, are subject to SCVWD Ordinance 75-6. (See Appendix A) The Ordinance allows for variances for shallow wells. The following items discuss differences of these Guidelines to Ordinance 75-6; in these instances the proper course for these Guidelines are specified.

1. A monitoring well constructed wholly within the artificial backfill (as distinguished from the intact natural formation) around an underground storage facility does not have the potential to compromise the natural groundwater protection. It is excluded from the provisions of Ordinance 75-6 and does not require a well drilling permit from the SCVWD.

2. The construction of water wells is solely limited to a driller with a State water well contractor's (C-57) license but other qualified and licensed contractors may also be employed to construct monitoring wells (e.g., a contractor with a State C-61 license).

3. The submittal of a well completion report to the SCVWD shall be by the owner

or by his professional consultant, rather than by the driller. The final completion report shall be in the form of a standard State Water Well Driller's Report. This requirement does not relieve any well drilling contractor of the requirements that he file a report of all the wells and test holes in accordance with the State Water Code.

4. The use of bentonite for an annular seal is permitted in addition to Portland cement or cement mix as specified in Ordinance 75-6.

5. As indicated under item No. 1 above, the monitoring well required for individual agricultural suburban motor-fuel storage facilities is exempted from the provisions of Ordinance 75-6. However, its construction shall comply with the provisions set forth in these Guidelines. Such a monitoring well may be constructed by the owner or by a contractor.

Well Construction Permit

Under the provisions of SCVWD Ordinance 75-6, a well drilling permit must be obtained for each well installation prior to its construction, unless exempted. The owner, owner's agent, or consultant is to apply for such a permit from the SCVWD at the District Office, 5750 Almaden Expressway, San Jose, (408) 265-2600; at the Santa Clara County Central Permits Office located at 70 West Hedding Street, San Jose, (408) 299-2454, and at the South County Office located in the Gilroy City Hall (408) 847-6484.

MONITORING REQUIREMENTS

Monitoring requirements which discuss the appropriateness of the approach to monitoring for a particular classification of storage facility, varying hydrogeologic conditions, number and location of monitoring devices required, and requirement of soils sampling have already been covered in the Summary on Page 2 of these Guidelines.

WELL CONSTRUCTION GUIDELINES

These Well Construction Guidelines set forth recommended or required parameters with regard to the design, drilling and sampling, construction, development, and security of wells which are required for monitoring beneath subsurface hazardous material storage facilities. These Guidelines also set forth recommended or required procedures for boring and sampling where soil samples and/or identification of groundwater levels are required.

Well Diameter

The minimum well diameter shall be two inches but larger diameters can be considered and are acceptable.

Borehole Diameter

The diameter of the borehole shall be of sufficient size to encase the perforated casing or well screen in a gravel pack envelope of sufficient annular thickness. Such a width thickness is a minimum of two inches and a maximum of six inches (e.g., a three-inch O.D. casing would require a hole diameter of seven inches minimum and 15 inches maximum). These limits provide an adequate width space for the proper installation of the annular surface seal while not inhibiting well development.

Construction Materials

Casing, Screen and Perforations

Well casing, screen and perforated casing shall be constructed of materials that have the least potential for affecting the quality parameter of the sample, have sufficient strength and resist rapid deterioration from corrosion. Acceptable construction materials include polyvinyl chloride (PVC), stainless steel or low carbon steel. The most suitable material for a particular installation will depend upon the parameters to be monitored. Casing and screen joints may be connected by means of arc

welding of metals or they may be threaded and coupled. The use of organic bonding compounds is not permitted.

Gravel Pack Envelope

Gravel pack envelope materials, when employed in well construction, shall be durable, waterworn, and washed clean of silt, dirt, and foreign matter. They shall be well rounded (crushed material is unacceptable) and shall be graded to an appropriate size for retention of aquifer materials encountered in the borehole. When the gravel pack materials are of sand sizes, they shall be appropriately screened silica sand.

Annular Seal

Annular seal shall consist of neat cement, cement grout, concrete or thick bentonite slurry (or bentonite pellets). When cement is used it shall be Class A Portland cement.

In the sealing of PVC casing, the heat of hydration generated by cement would have to be considered. The heat of hydration could be moderated with the addition of bentonite or sand or by cooling the mix before installation.

Construction Procedures and Requirements

Drilling Methods

The following drilling methods are acceptable alternatives where the sole objective is the construction of a monitoring well in the borehole: solid and hollow stem auger, percussion (cable tool), direct circulation (mud) rotary, and air circulation direct and reverse rotary. For certain installations consideration shall be given to a method that minimizes the introduction of foreign materials or fluids.

All tools used in connection with the boring of the hole shall be cleaned before commencement of drilling.

If drilling mud is employed, drilling fluid additives shall be limited to inorganic and non-hazardous compounds.

As stated under "Monitoring Requirements", the drilling of a monitoring well in the tank backfill for individuals agricultural and suburban motor fuel storage facilities and for shallow vadose monitoring wells may also be accomplished by hand augering.

Soil Sampling

The requirements for obtaining soils samples are discussed in the Summary under Monitoring Requirements on Page 2 of these Guidelines.

Soil samples for laboratory analysis shall be collected by driving a thin-walled Shelby tube or a California type drive sampler. Upon collection, the sample tube is to be capped on both ends with a teflon cap. Alternatively, aluminum foil can be used to cover the ends of the sampling tube and then sealed with an air-tight cap on each end. These samples are to be immediately placed in a refrigerated ice chest for transport to a laboratory. Soils samples for testing by visual field inspection in the installation of a monitoring well for individual agricultural and suburban motor fuel storages could be obtained in the same manner or by obtaining disturbed samples with a power or hand auger.

Analytical testing methods for soils samples are presented under "Sampling, Monitoring Schedule and Reporting".

Casing, Well Screen, Perforated Casing Installation

Before installation, all casing, couplings, well centralizers, well screens or perforated casing and all other components are to be thoroughly cleaned. Cleaning can be accomplished with the use of detergent, clean water, trisodiumphosphate or other approved cleaning compound. Whenever possible the well column (casing, perforated casing or well screen) should be held in tension whereby the column is held above the bottom of the hole during the gravel pack and seal installation. Also, whenever possible or when required, well centralizers are to be attached to the well column so that the well screen, perforated casing and well casing can be properly centered in the gravel pack and annular seal envelope. Centralizers would not be required in hollow-stem auger hole-type construction as the well column is held in center when the well is constructed.

Bottom Plug

The bottom of the well shall be permanently plugged, either by a screw-on or friction cap and without the use of an organic bonding compound. The bottom plug is to keep the well from silting and to eliminate the possibility of a cavity from developing in the formation by pumping.

Gravel Pack Envelope Installation

Gravel pack envelopes shall be installed by a tremie pipe. When drilling mud is used, it must be thinned out. These measures are to avoid bridging and void creation. The gravel pack is to cover the full length of the perforated or screened interval in addition to rising a minimum of two feet above the uppermost perforation.

Annular Seal Placement

The annular seal is to be placed above the gravel pack and extended to the ground surface. A transition of finer sand, soil or bentonite pellets may be required to prevent sealing materials from entering the gravel pack material. Mixing of sealing materials in preparation for placement shall be with clean water and thoroughly mixed (no dry lumps). Annular sealing materials shall be placed in a manner that prevents bridging, dilution and segregation when placed under water. Slurried annular seal materials shall be emplaced by a tremie pipe down to the bottom of the interval to be sealed and then filled from the bottom upward, withdrawing the tremie pipe as the placement progresses but at all times keeping the end of the pipe submerged in the sealing material placed. If groundwater occurs in the annular space, the placement of the sealing material from the bottom to the surface shall displace the water out of the top of the hole. Bentonite pellets, however, can be placed by free fall under gravity as they can sink to the bottom underwater before fully expanding to form a tight seal.

When Portland cement is used, the placement of the seal is to be performed in one continuous lift for the interval to be sealed.

Well Development

All monitoring wells shall be developed to clean the well and to stabilize the sand, gravel, and aquifer materials around the screens or perforations. Well development may be accomplished by bailing, mechanical or air lift pumping, surging, or swabbing. Well development shall continue until the well is thoroughly developed and free of sand, silt, and turbidity.

In some cases where low permeability formations are involved or the drilling mud used fails to respond to cleanup, initial development pumping may immediately dewater the well casing and thereby inhibit development. When this occurs, clean, potable grade water can be introduced into the well, followed by surging of the waters introduced with a swabb or surge block. Care must be taken not to damage the well screen or casing while swabbing or surging. This is to be followed by pumping. The procedure could be repeated as required to establish full development.

Surface Security and Identification

The surface of each monitoring well is to be protected from fluid entry, accidental damage, unauthorized access and vandalism. Wellheads may be secured above or below the ground surface, depending on local conditions. In all cases, a watertight cap shall be installed on the wellhead. If not otherwise secured, the cap shall also be locked.

Wellheads secured below the ground surface should be completed in a concrete or other vault, with a locking cover. The vault shall be installed with provisions for drainage to prevent accumulation of rainfall or surface runoff. Venting of the well, if required, can be accomplished inside the vault, with suitable backflow prevention against inflow of rainfall or surface runoff.

Each well shall be obviously identified, including well owner, well number, type of installation or device installed and key construction data such as depth, hole and casing diameters, and location of screen or perforated intervals.

VADOSE ZONE MONITORING

The requirements for vadose (or unsaturated) zone monitoring are outlined in the Summary of these Guidelines. This section discusses the types of vadose monitoring required and the guidelines for their installation.

The available vadose monitoring devices can be broadly categorized into two groups: (1) active devices which are sampling devices, and (2) passive which are nonsampling devices. Active devices include vapor monitoring wells, suction lysimeters and interface wells. Passive devices include tensiometers, electrical resistance blocks and other devices to measure relative changes in soil moisture content, temperature and salinity. Minimum requirement as specified under these Guidelines considers only active type devices.

Required Vadose Monitoring

For the purposes of these Guidelines, where vadose monitoring is required, a vapor monitoring well shall be installed where volatile and semivolatile products are involved, and either a suction lysimeter or an interface well shall be installed where nonvolatile products are involved.

Vapor Monitoring

A vapor monitoring installation can be constructed in several ways. One way is to construct a conventional well to the desired depth, in these cases to the bottom of the tank bankfill or just below it as described in the Summary, and have the well screened or perforated at the bottom. Monitoring is to be performed by lowering a small tigon sampling tube to the bottom. An inflatable packer is set above the screened interval. Refer to Figure 6 for an example of a typical installation as described. Vapor testing is to be accomplished by pumping the vapors to the surface and then passing them through a portable measuring device and exhausted through an activated carbon filter or field samples can be collected by passing the vapor through an adsorption medium which is then sent to a laboratory for analysis.

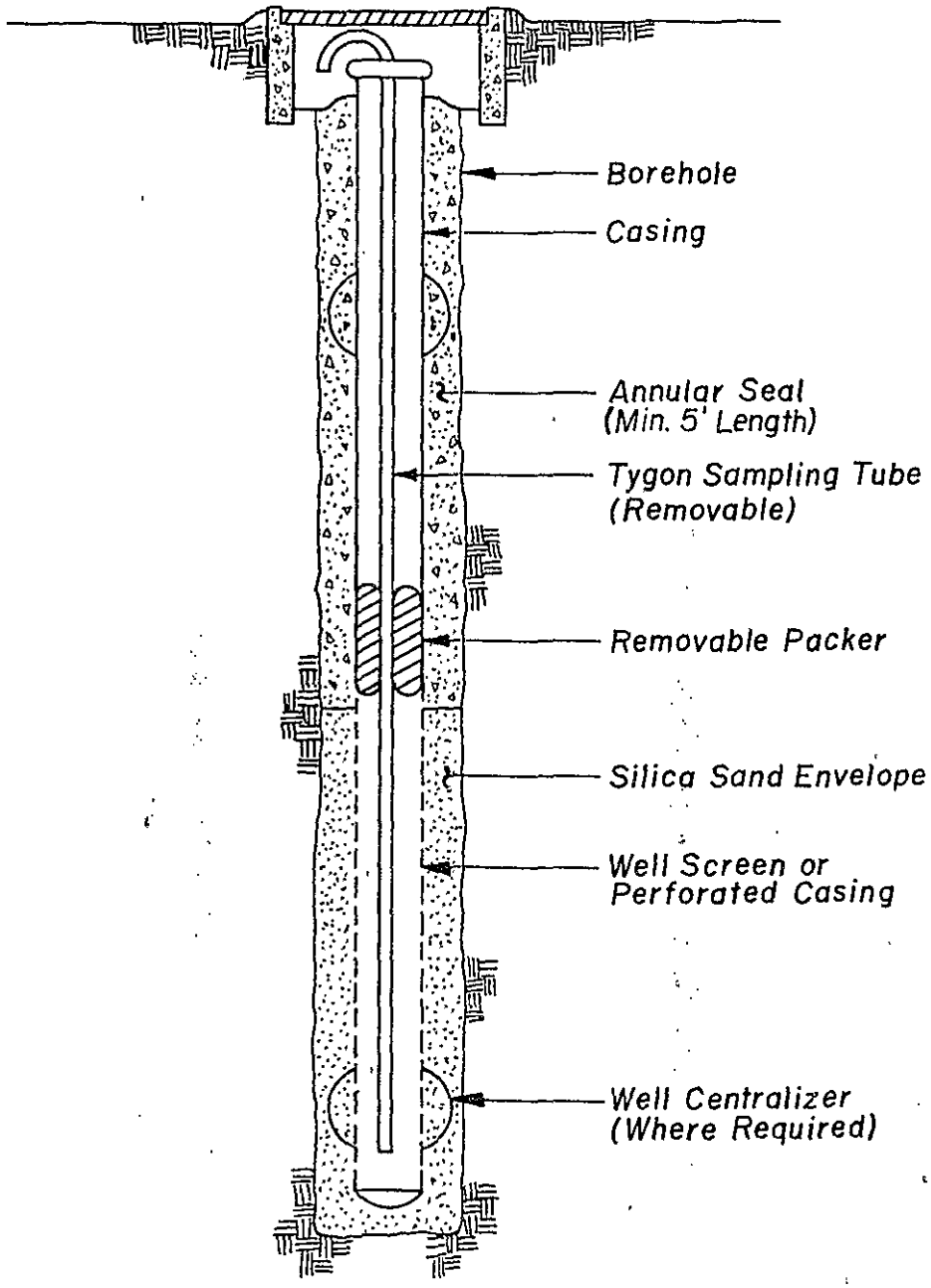


Figure 6. Typical Vapor Monitoring Device Installation, Unsaturated Conditions

This conventional type of vapor monitoring well is preferred over others as measurements for the presence of fluids, should a saturated condition occur, could also be taken and fluid samples be obtained. Testing of such fluids would serve as a better indication of the concurrent conditions than would vapor testing.

Another method of installation is to construct a permanent gas probe tip enclosed in a silica sand pack envelope with a sampling tube to the surface for vapor pumping. A nominal bentonite pellet seal shall be placed above the sand pack envelope and the rest of the hole shall be sealed to the surface with conventional sealing materials. A nominal length of casing shall be installed at the surface for protection of the sampling tube.

Driven steel well points can also be employed as vapor sampling tips. These can be installed through a hollow-stem auger or in a solid stem auger hole and driven to the depth desired. The small, permanently attached sampling tube is also of steel and is to be sealed to the surface.

Suction Lysimeter

Suction lysimeters are commonly used to extract small volumes of fluids from unsaturated, though quite moist, soil zones, usually at shallow depths. A typical example of a commercially available pressure/vacuum lysimeter is presented in Figure 7. Modified versions with check valves can be employed for deeper zone sensing. Fluids are drawn into the lysimeter by lowering the air pressure in the lysimeter by vacuum pumping and then in the second cycle the fluid is purged to the surface by pressure pumping. Vacuum and pressure pumping can be accomplished with a hand pump. The fluid samples are to be collected for laboratory analysis. The use of lysimeters is required for non-motor fuel storage and nonvolatile storage facilities when the depth to the saturated zone is greater than 20 feet from the surface.

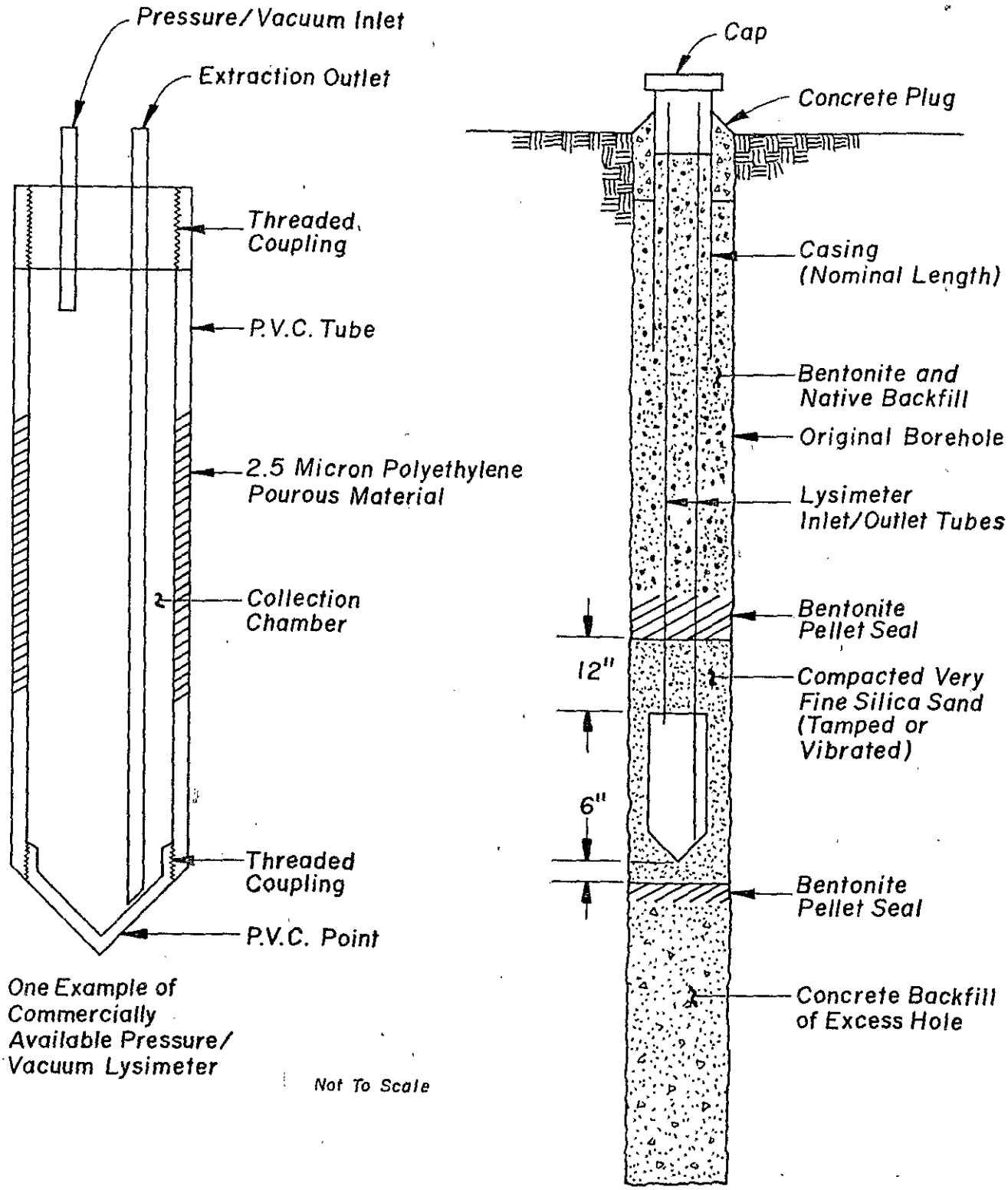


Figure 7. Typical Pressure/Vacuum Lysimeter and Its Installation, Unsaturated Conditions

The suction lysimeter shall be installed in the bottom of the borehole. The hole shall then be backfilled with a very fine pure silica tremiing sand (commercially available) as to encase the lysimeter. The very fine sand is to be installed by either tremiing a sand-water slurry into the hole or by hand pouring the sand into the hole and tamping continuously to ensure a good tightly compacted contact between the lysimeter and the materials to be monitored (soil formation or tank backfill). A nominal bentonite pellet seal is to be placed above the sand pack envelope followed by the placement of slurried bentonite mix sealing materials to the surface. A nominal length of casing shall be installed at the surface for protection. Other provisions for the installation of lysimeters shall follow instructions provided by the commercial supplier. Refer to Figure 7 for a typical suction lysimeter installation.

Interface Well

An interface well is a vadose monitoring well that is constructed in the same conventional manner as a groundwater monitoring well with a screen or perforated casing that is gravel packed to form the sensing zone. The sensing zone is placed at a formational interface in the unsaturated zone. The interface is usually a permeable material or formation overlying an impermeable or slightly permeable zone, e.g., sand backfill (of the bank tank excavation) or sand/gravel formation underlain by a clayey formation. Fluid sampling with a teflon or stainless steel bailer may be possible when a temporary condition of saturation develops at the interface as a result of tank leakage or leaching down of surface drainage waters. Examples of such installations are the vadose monitoring devices as shown on Figures 1, 2, 3 and 4.

Materials and installation procedures for construction of an interface well are as specified under "Well Construction Guidelines".

Installation and Materials

Vadose monitoring devices are to be installed in boreholes drilled by solid-stem or hollow-stem drilling. Where the level of installation is shallow, they may be installed in

a hand augered hole. Materials such as casing and well screen, depending upon the type of device installed, and the annular seal and sealing materials are as specified under "Well Construction Guidelines". Where applicable the minimum length of annular seal shall be 5 feet from the surface to prevent drainage water from entering the bore hole. A variance will be allowed for minimum length of annular seal should 5 feet prove to be impractical due to shallow depth of tank backfill for a small tank.

Surface Security and Identification

The surface of each installation is to be protected from fluid entry, accidental damage, unauthorized access and vandalism. The monitoring equipment may be secured above or below the ground surface, depending on local conditions. In all cases, a watertight closure is required for the instruments, and each installation shall be secured by a locking device.

Equipment secured below the ground surface should be completed in a concrete or other appropriate type vault having a locking cover. The vault shall be installed with provisions for drainage to prevent accumulation of rainfall or surface runoff.

Each well shall be obviously identified, including well owner, well number, type of monitoring device, and key construction data such as depth, diameter, casing size, and sensing zone depth.

'SAMPLING, MONITORING SCHEDULE AND REPORTING

Soils Testing

The requirements for soils sampling and the procedures for soil sampling are discussed in the Summary and Well Construction Guidelines, respectively.

Non-Motor Fuel and Commercial Motor Fuel Storage Facilities

Soils samples obtained from non-motor fuel and commercial motor fuel storage facilities shall be laboratory analyzed individually or they shall be composited in a manner as to composite two succeeding samples together starting with the top two, etc. The samples from the uppermost zone(s) shall be analyzed first and any or all succeeding samples may not have to be analyzed if the previous set of samples above it is determined to be "clean."

When the history of the storage facility is precisely known and documented to the satisfaction of the enforcing agency, laboratory analyses shall test for the materials and related materials that are and were stored in the facility. If the history is not precisely known, a complete gas chromatography/mass spectroscopy (GC/MS) scan of volatile organics (EPA Method 624) and/or acid/base/neutral extractables (EPA Method 625) shall be performed as appropriate for the types of materials which may have been stored. Testing of soils shall employ EPA Standards Procedures in all appropriate cases. Otherwise recognized standards are to be employed.

Individual Agricultural and Suburban Motor Fuel Storage Facilities

Soils samples obtained at individual agricultural and suburban motor fuel storage facilities can be field tested. Tests to be performed are (1) presence of motor-fuel odor, and (2) the observance of an oil sheen after which the soil sample is vigorously mixed with water in a clear (transparent) glass vessel.

Monitoring Schedule

For the purposes of these Guidelines the following schedule of groundwater sampling and other measurements shall be observed:

Non-Motor Fuel Storage Facilities

Groundwater sampling and vadose monitoring shall be performed on a semiannual basis, starting upon the completion of the installations. Water samples are to be laboratory tested.

Commercial Motor Fuel Storage Facilities

Groundwater sampling shall be performed on a monthly basis, starting upon the completion of the installation. Vadose monitoring shall be performed on a quarterly basis, starting upon the completion of the installation.

Individual Agricultural and Suburban Motor Fuel Storage Facilities

Probing for the detection of motor fuel product and water in the monitoring well shall be conducted on a semi-annual basis starting upon the completion of the well.

Modificaton of Monitoring Schedule

On an individual basis, the Administering Agency may alter any monitoring schedule or request special supplemental sampling and testing, based upon the results of previous tests. On the same basis, specific quality control measures may also be specified.

Groundwater Sampling and Laboratory Testing

Non-Motor Fuel Storage Facilities

The sampling of groundwater for laboratory analysis shall be accomplished in the following manner:

A. The well shall be bailed or pumped to remove four to ten well volumes prior to sampling. If the well is evacuated before four to ten well volumes are removed, the sample shall be taken when the water level in the well recovers to approximately 80% of its initial water level.

B. Following the required volume of evacuation from the well, the sample shall be obtained with a teflon or stainless steel bailer or a gas actuated positive displacement bladder pump (whereby gas is not in contact with the fluid being pumped). Air-lift form of sampling shall not be used.

C. Water samples shall be handled and preserved according to the latest EPA methods as described in the Federal Register (Volume 44, No. 233, Monday, December 3, 1979, Page 69544, Table II) for the type of analysis to be performed.

Detailed procedures or assistance can be obtained from a qualified commercial laboratory.

Constituents to be laboratory tested are to include materials or related materials that are being stored or had been stored in the storage facility. If this is not precisely known, a complete scan of all possible contaminants shall be performed. Laboratory testing of waters shall employ EPA Standard Procedures in all appropriate cases (as stated under "Soils Testing"). Otherwise recognized standards are to be employed.

Commercial Motor Fuel Storage Facilities

Water well sampling is to be accomplished by using a clear (transparent) plastic ball-valve bailer. Water samples are to be field inspected for the presence of odor and the observance of product or sheen on the water sample.

Vapor Monitoring

For commercial motor fuel storages, vapor samples are to be pumped from the vapor monitoring well and are to be passed through a portable field analyzer. For non-motor fuel storages, especially when a wide scan of constituents is necessary, vapor samples are to be pumped and passed through an adsorption medium for laboratory desorption and analytical testing.

Procedures and testing of vapors shall follow recognized standards. Assistance can be obtained from a qualified commercial laboratory.

Suction Lysimeter Monitoring

Water or fluids extracted from a suction lysimeter (from non-motor fuel storage) shall be handled, preserved and analyzed in the same manner as for groundwater samples for laboratory analysis.

Interface Well Monitoring

Fluid sampling, should a saturated condition develop upon the interface, for non-motor fuel storage, shall be accomplished with a teflon or stainless steel bailer. Fluids obtained are to be handled, perserved and laboratory tested in the same manner as described previously under "Groundwater Sampling and Laboratory Testing".

Individual Agricultural and Suburban Motor Fuel Storage Facilities Monitoring

Monitoring of individual agricultural and suburban motor fuel storage facilities is to be accomplished by the probing of the monitoring well for the detection of motor fuel product or any fluids in the well. This can be performed by lowering a clear plastic ball-valve bailer.

If fluids are present in the well, the clear plastic ball-valve bailer would secure a sample which can be tested for the presence of motor fuel by noting the presence of odor and the observance of product or sheen on the water sample.

Reporting

The results of all soils testings, water sample observations and analyses, and vadose monitorings are to be reported to the Administering Agency in a timely manner following obtaining the results.

GLOSSARY

Administrating Agency - that local city or county government that administers the Permit Ordinance.

Annular Seal - that impermeable material that fills the space between the borehole and the well casing

Annular Thickness - that distance between the borehole and the outside casing wall

Aquitard - a usually horizontal geologic formation with very low permeability that restricts fluid flow.

Borehole - the hole created by a drilling devise.

Bottom Plug - the plug placed at the bottom of well casing to preclude erosion of the backfill material.

Casing - the conduit placed in a borehole to extract fluids or vapors.

Drilling Mud - a heavy suspension fluid circulated as part of the operation of hydraulic rotary drilling, usually consisting of a mixture of water, mud, clay (bentonite) and chemical additives.

EPA - Enviornmental Protection Agency

Filter Pack - that select uniformly graded material used to backfill the annular space around a well screen or perforated casing.

Formations - those geologic strata that underlie the ground surface.

GC/MS - gas chromatography/mass spectroscopy; laboratory testing methods.

Gravel Pack Envelope - that properly graded material surrounding the annular space around a well screen or perforated casing.

Guidelines - Groundwater Monitoring Guidelines

Hazardous Materials - those materials discussed in Part II of the Hazardous Materials Storage Permit Ordinance

Hazardous Materials Storage Permit Ordinance - the Ordinance adopted by the administrating agencies to regulate the construction monitoring and reporting of underground hazardous materials storage facilities.

Hydrogeologic Conditions - those conditions dealing with the behavior of groundwater.

Interface Well - vadose or unsaturated zone monitoring well, conventionally constructed with the screened or perforated interval located at a formational interface, usually permeable materials overlying impermeable or slightly permeable materials. Fluid sampling is possible when a temporary condition of saturation develops at the interface.

Motor Fuels - those hazardous materials used primarily for the operation of internal combustion engines, including lubricating and cleaning fluids.

Natural Formation - An undisturbed material.

Non-Motor Fuels - all those hazardous materials not used primarily for the operation of internal combustion engines.

Ordinance 75-6 - an ordinance of the Santa Clara Valley Water District regulating the construction and destruction of wells. (Appendix A)

Perforated Casing - well casing with holes or slots permitting the passage of fluids or vapors.

Permit Ordinance - the Hazardous Materials Storage Permit Ordinance

Saturated Zone - those geologic strata containing extractable groundwater.

SCWVD - Santa Clara Valley Water District

Sensing Zone - the point or interval beneath the surface as controlled by the installation construction from which liquid or vapor samples may be obtained.

State Water Well Driller Report - a State of California form on which a well driller records pertinent information about a well. Water well drillers are required to submit such a report for each well drilled.

Suction Lysimeter - a devise for extracting liquid samples from the unsaturated zone.

Summary - the summary of the Guidelines.

Surface Seal - a shortened annular seal used to insure no contaminents will enter the annular space from the ground surface.

Tank Backfill - that select material used to backfill an underground storage facility.

Tremie Pipe - a conduit used during construction to place materials in a well from the bottom up.

Unsaturated Zone - those underlying strata that are above the water table.

Vadose Monitoring Devices - devices to be installed in the vadose (unsaturated) zone for the purpose of monitoring. They are classified as 1.) active devices which include vapor wells or suction lysimeters and 2.) passive devices such as tensiometers, electrical resistance blocks, etc.

Vadose Zone - the unsaturated zone.

Water Table - the depth below which the ground is saturated.

Well Centralizer - a device used to center well casing in a borehole.

Well Development - the procedure after well construction used to assure stabilization of the gravel pack envelope and adjacent formation and the production of water free of turbidity.

Well head - the surface portion of the well casing.

APPENDIX A

ORDINANCE NO. 75-6

AN ORDINANCE OF SANTA CLARA VALLEY WATER DISTRICT REGULATING THE CLASSIFICATION, CONSTRUCTION AND SEALING OF WELLS.

The Board of Directors of the Santa Clara Valley Water District ordains as follows:

SECTION 1: PURPOSE

1.1 It is the purpose of this ordinance to provide within the District, for the classification of existing wells, the construction of new wells, the deepening of existing wells and the sealing of wells which will never again be used, including cathodic protection wells, exploratory holes, and wells found to be a public nuisance, to the end that such wells will not cause pollution or contamination of groundwater or otherwise jeopardize the health, safety or welfare of the people of the District.

SECTION 2:
CLASSIFICATION OF WELLS

2.1 All wells within Santa Clara County will be placed into one of the following classifications.

2.2 Active Well – An active well is a well that has been utilized at least once in the preceding 12 months for the production of groundwater. Active wells within groundwater charge zones of the District are subject to the District's groundwater production requirements and require, pursuant to the District Act, the filing, semiannually, of groundwater production statements.

a. If the pump from an active well has been removed for repair or replacement, the well is still considered to be an active well. During the repair period, the well shall be adequately covered to prevent injury to people and to prevent the entrance of undesirable water or foreign matter.

2.3 Inactive Well – An inactive well means a well that has not been used for a period of one year or more for the production of groundwater but is maintained in such a condition that it could be so used.

a. The owner of an inactive well, if he desires to place or maintain a well in this classification, shall obtain from the District, at intervals set by the District, a permit verifying classification of the well as inactive.

2.4 As further evidence of the owner's intention for continued use and as conditions of the permit, he shall properly maintain the well in such a way that:

a. The well has no defects which will permit the impairment of quality of water in the well or in the water-bearing formations penetrated.

b. The well head is to be appropriately protected to prevent accidental entry and to prevent the entrance of undesirable water or foreign matter.

c. The well is marked so that it can be clearly seen.

d. The area surrounding the well is kept clear of brush or debris.

e. Wells used for observation of the groundwater are considered inactive wells so long as they are maintained for this purpose. However, such wells shall be in compliance with this ordinance and bear an appropriate cap, with the label, "Observation Well", and the name of the agency or organization using the well. It shall be securely locked when measurements are not being made.

f. Cathodic protection wells and cased or uncased test holes deep enough to promote interaquifer transfer of groundwater shall be considered inactive wells.

2.5 Permanently Abandoned Well – A permanently abandoned well is a well that will never be reactivated. Wells will not be considered permanently abandoned until they are properly sealed in accordance with this ordinance.

SECTION 3: DEFINITIONS

3.1 Definitions of terms shall be as set forth in 1) Chapter II and Appendix I of the Department of Water Resources Bulletin No. 74, "Water Well Standards: State of California", 2) "Standards for the Sealing of Abandoned Wells", by the Santa Clara Valley Water District and the Santa Clara County Health Department, referenced in Section 7 of this ordinance, and 3) as set forth below:

a. "Person", as used in this ordinance, shall mean any person, association, firm, corporation, municipality, the County of Santa Clara, special district or public agency.

b. "District" shall mean the Santa Clara Valley Water District.

c. "Board" shall mean the Board of Directors of the Santa Clara Valley Water District.

d. "Environmental Health Services" shall mean the Santa Clara County Environmental Health Services.

f. "Public Nuisance" shall mean any well or condition that impairs or threatens to impair the quality of groundwater or otherwise jeopardize the health or safety of the public.

g. "Abatement" means the reconstruction, repair or destruction of a well so as to eliminate a public nuisance.

h. "General Manager" shall mean the General Manager of the Santa Clara Valley Water District or his authorized designee.

i. "Inspecting Officer" shall mean a person designated by the General Manager and authorized to ensure that the provisions of this ordinance are enforced. Such person will be a member of the staff of the District or the Environmental Health Services.

SECTION 4: STATE REPORTING

4.1 Nothing contained in this ordinance shall be deemed to release any person from compliance with the provisions of Article 3, Chapter 10, Division 7 of the Water Code of the State of California or any amendment thereto.

SECTION 5: PROHIBITIONS

5.1 No person within the County of Santa Clara shall construct, or seal a well, unless a written permit has first been obtained from the Santa Clara Valley Water District.

SECTION 6:
PERMIT PROCEDURES

6.1 Application – Permits required by this ordinance shall be subject to conditions set forth in this ordinance or as required by law. The General Manager shall prescribe and provide a regular form of application for permits under the terms of this ordinance. Said application form shall contain space for the name and address of the applicant, together with such information as in the judgement of the General Manager is necessary to establish the location of the well, the purpose of the permit and the extent of any proposed work. Drawings and specifications for any proposed work shall accompany the application form and shall be detailed enough to demonstrate compliance to the standards.

6.2 Fees – Fees to cover District costs required for the review of applications, issuance of permits and inspection of work under this ordinance, and the method of payment of such fees may be as established and adopted by the Board from time to time by resolution.

6.3 Waiver or Payment of Fees and Costs, Hardship Claims – At the recommendation of the General Manager and

approval by the Board, all or any part of the fees and costs of compliance with this ordinance may be waived or paid by the District in accordance with guidelines and procedures as may be established by the Board.

6.4 Term of Permit and Completion of Work Work authorized by a permit issued pursuant to this ordinance shall begin within ninety (90) days from the date of issuance of the permit unless officially extended. If the work is not so begun, or extension requested by permittee, the permit shall become void. The permittee shall notify District as specified on the permit before starting any work authorized by the permit.

6.5 Guarantee of Performance – Prior to the issuance of a permit, the applicant shall post with the General Manager a cash deposit or bond guaranteeing compliance with the terms of this ordinance, such bond to be in an amount determined by the General Manager as necessary to protect the District and the public against faulty or uncompleted work. The amount of said bond shall not exceed the total estimated cost of the work. Such deposit or bond may be waived by the General Manager if he determines other assurances of compliance are adequate.

6.6 Liability – Permittee shall assume all liability imposed by law for personal injury or property damage resulting from any work performed by permittee or his agent under the permit, or resulting from failure of permittee to perform his obligation under said permit. If any claim of such liability is made against the District, their officers, employees, or agents, permittee shall defend, indemnify and hold them and each of them, harmless from such claim.

6.7 Review and Appeal – Any person aggrieved by the refusal to issue a permit, the terms of a permit, or any decision made by the Inspecting Officer required by this ordinance may, upon written request, have the matter reviewed by the General Manager. Upon receipt of such a written request, the General Manager shall schedule the matter for review within two weeks and give applicant at least ten (10) days written notice of the time and place of said review unless applicant agrees to a lesser time. If the applicant is not satisfied with the results of the review by the General Manager, he may present his appeal to the Board. Such appeals must be in writing and must be submitted within two weeks after the General Manager's decision has been mailed to or served upon the applicant. The Board shall hold a hearing of said appeal within two weeks of receipt of such appeal and shall mail notice in writing of the date thereof to the applicant at least five (5) days before the hearing date. The decision of the Board shall be final and binding upon all parties.

SECTION 7: STANDARDS

7.1 Standards for the construction, or sealing (permanent abandonment) of wells will be in accordance with the latest revision of "Standards for the Construction of Wells, Santa Clara County" and "Standards for the Sealing of Abandoned Wells, Santa Clara County" prepared by the Santa Clara Valley Well Construction/Sealing Standards Review Committee in cooperation with the Santa Clara Valley Water District and the Environmental Health Services.

SECTION 8: ENFORCEMENT

8.1 Notice of Violation – In the event a well subject to this ordinance is found to be a public nuisance constructed or sealed contrary to the terms of this ordinance or the permit issued pursuant to this ordinance, the General Manager shall give written notice to the owner of the land as shown on the most recent equalized assessment roll, or to the permittee at his address listed on the permit if a permit has been issued; which notice shall state the nature of the violation, the corrective measures to be taken, and a reasonable time within which such corrections must be made. Said notice shall include a statement that if the landowner or permittee fails to make corrections within the period specified, the District may abate the condition at owner or permittee's expense.

8.2 Abatement by District – If the corrections listed in the notice given pursuant to 8.1 above are not made as required in said notice, the General Manager with the approval of the Board, and after a reasonable opportunity for the person notified to be heard by said Board, may abate the condition. The owner or permittee shall be liable for the cost thereof.

8.3 Emergency Abatement – If the General Manager finds that a well subject to this ordinance is, by reason of condition, operation or maintenance, causing significant irreparable damage to the groundwater or presents an immediate danger to health and safety, and that it is impracticable to notify the owner or permittee, the General Manager may perform emergency work necessary to abate the condition without giving notice as required in 8.1 above, and the owner of the land as shown on the last equalized assessment roll, shall be liable for the cost thereof.

SECTION 9

9.1 Conflicts – All ordinances of the District in conflict with the terms and conditions of this ordinance are hereby repealed to the extent of such conflict.

SECTION 10

10.1 Severability – If any section, subsection, paragraph, subparagraph, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the validity or constitutionality of the remaining portions of this ordinance; and the Board declares that this ordinance and each section, subsection, paragraph, subparagraph, sentence, clause and phrase thereof would have been adopted irrespective of the fact that one or more of such section, subsection, paragraph, subparagraph, sentence, clause or phrase be declared invalid or unconstitutional.

SECTION 11

11.1 This ordinance shall take effect and be in force in thirty (30) days from and after the date of its passage and before the expiration of fifteen (15) days after its passage it shall be published once with the names of the members voting for and against the same in the San Jose Mercury, a newspaper of general circulation published in the County of Santa Clara.

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District on October 14, 1975, by the following vote:

AYES: Directors: J. Chiri, M. E. Dullea, P. T. Ferraro, J. J. Lenihan, E. A. Mirassou, C. Rush, R. T. Sapp.

NOES: Directors: None.

ABSENT: Directors: None.

SANTA CLARA VALLEY
WATER DISTRICT
By: ROBERT T. SAPP
Chairman of the
Board of Directors.

ATTEST:
VIOLET V. ENANDER
Clerk of said
Board of Directors

Amended July 27, 1976

STANDARDS FOR THE CONSTRUCTION OF WELLS SANTA CLARA COUNTY (Abridged)

PURPOSE

The purposes of standards for well construction are not only to provide adequate protection of water in wells but equally, if not more importantly, to protect and preserve the groundwater supply in aquifers for future uses. These purposes are to be accomplished by properly locating the well site, by requiring an annular seal in the upper portion of the well to prevent well contamination from surface sources, and by specifying construction requirements to prevent interaquifer transfer or mixing of degraded groundwaters with good quality waters through wells. Furthermore, wells properly constructed could be easily and adequately destroyed after their usefulness is over without having to resort to complicated and expensive procedures in order to protect the aquifers. The protection of groundwater supplies is a complex problem, and, although poor well construction may not be the principal cause of groundwater contamination, the problem of aquifer contamination must be attacked from all possible aspects.

WATER WELL LOCATION WITH RESPECT TO CONTAMINANTS AND POLLUTANTS

All water wells shall be located an adequate horizontal distance from potential sources of contamination and pollution. Most of the factors involved in determining safe distances are usually not known. The following distances, on the basis of past experience and general knowledge, are safe where dry upper unconsolidated formations, less permeable than sand, are encountered:

Sewer	50 feet
Subsurface sewage leaching field, septic tank, or pit privy	100 feet
Cesspool or seepage pit	150 feet

No water well shall be located closer than the above distances from the specified sources of contamination. Where, in the opinion of the enforcing agency, adverse conditions exist, the usual distances shall be increased or special means of protection shall be provided.

If possible, the well shall be up the groundwater gradient (upstream) from the specified source of contamination.

WATER QUALITY ZONES

Since subsurface conditions vary from place to place, the standards must be formulated so as to conform to the groundwater geohydrologic and water quality conditions of the specific areas within the ground water basins of Santa Clara County. For well construction and sealing purposes, the groundwater basins of Santa Clara County have been divided into three water quality zones. Zone 1, which is the largest portion of the basins, represents the areas where the quality of water at all pumping depth intervals is generally good. Zone 2, near San Francisco Bay, is a multi-aquifer area where the shallow zone (0 to 150 feet) may be contaminated or could become contaminated by sea water. In Zone 3, the Evergreen area, degraded quality water occurs below a depth of 300 feet with good quality water overlying this zone. These water quality zones are delineated on Figure 1.

The bedrock areas outside the groundwater basins have their individual potential problems and well construction requirements for these areas are also included in these standards.

WELL CONSTRUCTION REQUIREMENTS

All wells are to be constructed in such a way that they will not serve as a channel allowing surface waters to enter the groundwater body nor will they serve as a channel for interaquifer groundwater flow when such a flow may result in the deterioration of the quality in any or all water-bearing formations penetrated. The following paragraphs present examples of well construction standards that meet the protection objectives in the various water quality zones and in the bedrock areas. If the enforcing agency finds that compliance with any of the requirements prescribed herein is impractical for a particular location because of unusual conditions and would result in construction of an unsatisfactory well, the enforcing agency may prescribe alternative requirements which are equivalent to these standards in terms of protection obtained.

Zone 1

In Zone 1, where the quality of water within the groundwater basin is generally unimpaired, the objective of the construction standards is to prevent well and aquifer contamination from surface sources. Here, a "general construction standard" will apply which entails the requirement of an effective surface seal. This is to be accomplished by the placement of a neat cement, cement grout, or concrete seal in the annular space between the well and the wall of the drilled hole to a minimum depth of 50 feet below the surface. In stratified formations the seal should terminate in a clay or other impermeable material. Special sealing depth requirement on an individual basis will be set forth by the enforcing agency for application of wells to be constructed less than 50 feet in depth. The sealing material shall be applied from the bottom of the interval to be sealed to the top in a manner that will prevent bridging, dilution, or segregation of the sealing material (by employing either a tremie pipe or a pressure grouting method). The thickness of the seal shall be in accordance with the State of California Standards.

A concrete floor slab, or base, shall be constructed around the top of all pumping or injection wells. The top of the floor slab shall slope away from the casing and the outer edge of the slab shall be at least six inches above the ground surface.

For a pump above the surface, a concrete pedestal shall be constructed atop the floor slab on which the pump is to be placed.

Examples of acceptable sealing construction for Zone 1 for nongravel packed wells are shown on Figure 2 and for gravelpacked wells on Figure 3.

Zone 2

In Zone 2, adjacent to San Francisco Bay, degraded quality water occurs in the shallow zone to a depth of 150 feet with good quality water in the lower aquifers. The specific objectives of the well construction standards are to prevent interaquifer flows from the shallow aquifer into the lower aquifers through wells and, in addition, to meet the construction objective for Zone 1. In order to accomplish these, all provisions stated under "general construction standards" discussed under Zone 1 shall be employed plus the extension of the surface seal into a clay or other impermeable layer at a minimum depth of 150 feet. An example of acceptable well construction in Zone 2 is shown on Figure 4.

If a gravel packed well were to be constructed in Zone 2, the construction of an annular seal as shown on Figure 3 would have to be extended into a clay layer at a depth of around 150 feet.

Zone 3

In Zone 3, the portion of the Evergreen area where aquifers below a depth of 300 feet have yielded poor quality water, the specific objectives of the well construction standards are to prevent interchange of groundwater between the lower aquifers containing mineralized

connate water and the upper unimpaired water quality aquifers, and also to meet the objective for Zone 1. In order to accomplish these, all provisions stated under "general sealing standards" for Zone 1 shall be employed plus limiting the depth of wells to be constructed to a maximum of 300 feet. An exception in regards to the maximum depth can be made if the owner can prove to the enforcing agency that waters at a greater depth are of good quality. This has to be based on the results of laboratory testing of a sample obtained only from the lower zone. In order to obtain such a sample, the lower zone shall be isolated from the upper zones during sampling.

BEDROCK AREAS

Bedrock areas present special conditions for the safe construction of water wells in that waters in bedrock could be, in part, recharged and transmitted unfiltered through open fractures. This is in contrast to the filtering that occurs as water is recharged and transmitted through unconsolidated granular materials of the groundwater basins.

For wells constructed in bedrock, the objective is to prevent contamination from surface sources, just as for wells constructed within the groundwater basin. This is to be accomplished by selecting the well site in a manner to obtain maximum security from potential sources of contamination and requiring the construction of an annular seal in the upper portion of the well.

In the selection of a well site, the conditions listed earlier under the heading "Water Well Location with Respect to Contaminants and Pollutants" shall be observed. In places where adverse conditions exist, the minimum distances listed shall be increased or special means of protection shall be provided.

In order to construct the upper annular seal, an oversize hole must be constructed to the depth and diameter required for the seal and casing installed to retain the seal. All public water supply wells including individual domestic wells to be constructed in bedrock in subdivided lands under the jurisdiction of the County Land Development Regulations shall incorporate at least a 50-foot annular seal from the surface. Public water supply wells constructed in bedrock are also subject to Environmental Health Services approval before being placed into service. For individual domestic wells on lands not subject to Land Development Regulations shall also incorporate a 50-foot annular seal from the surface unless these wells are less than 65 feet deep. For these wells, the annular space shall be sealed in the upper three-fourths of the depth of the well. All other requirements of the general well construction standards shall apply to wells in bedrock.

A typical example of an acceptable seal for well construction in bedrock is shown in Figure 5.

CATHODIC PROTECTION WELLS

Cathodic protection wells (or "deep anodes") also present hazards to groundwater quality just as a water well may in that both represent an opening from the surface through various aquifers. Just as for water wells, it is the objective of these standards to protect the quality of water in aquifers by requiring cathodic protection wells to be constructed in such a manner that they will not serve as a channel allowing surface waters to enter the groundwater body nor will they serve as a channel for interaquifer groundwater flow when such flow may result in the deterioration of the quality in any or all the aquifers penetrated. It is also the purpose of these standards to facilitate the effective sealing of these wells when their useful life has expired.

The sealing requirements for Zones 1 and 2 are similar to that of water wells constructed in these respective zones as illustrated in Figure 6, examples A and B, respectively (the latter, in Zone 2, if the well is deeper than 150 feet). In Zone 3, if the well is deeper than 300 feet, the annular seal would have to be extended to a depth of 300 feet as shown in Figure 6, example C, in order to protect the upper aquifers from rising waters from the degraded lower aquifers. If the cathodic protection well is to be less than 150 feet in depth in Zone 2 and less than 300 feet in Zone 3, general sealing requirements as for Zone 1 shall apply.

The top of the well shall be protected against the entrance of surface water draining from the surrounding land by installation of watertight caps, covers, plugs or similar devices. In drainage ways, exclusive of highways, streets, paved surfaces (such as parking lots, equipment yards, etc.), sidewalks, and the like, the top of the well shall terminate above, or otherwise be protected against, known conditions of flooding. When extended above ground surface, the vent pipe shall be terminated at the rectifier housing or other protective housing at an elevation which is above known conditions of flooding.

The diameter of the vent pipe is to be of sufficient size in order to be properly backfilled when the useful life of the anode has expired (sealing of an abandoned well).

DISINFECTION OF WELL

All public water supply, individual domestic, and industrial wells shall be disinfected following construction, repair, or when work is done on the pump, before the well is placed into service.

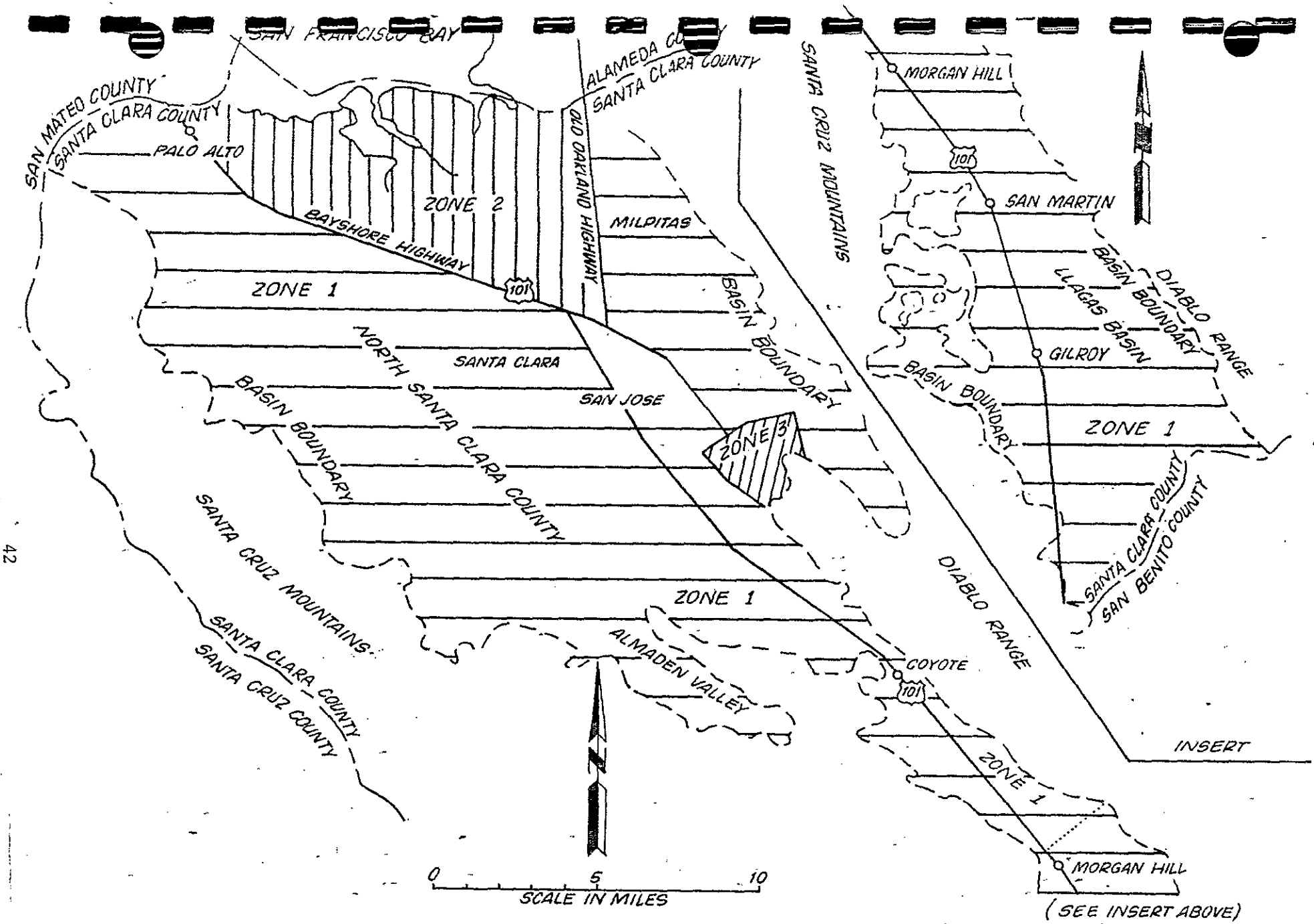
COMPLIANCE WITH STATE CODES

In complying with these standards, the well driller must also comply to the provisions of the various State codes relating to water well drilling. These include provisions regarding Contractor's License Law and the filing of notice of intent and well completion reports under the provisions of the Water Code.

REFERENCE

Reference is made to the unabridged version of the Well Construction Standards for a more detailed account of the *purposes, objectives, and well construction* requirements in addition to the bibliography and other pertinent information. The Well Construction Standards is one of two documents pertaining to water well ordinance, the companion document being "Standards for the Sealing of Abandoned Wells, Santa Clara County", October, 1972. The "Sealing Standards" also contain as Appendix A – "Geology", Appendix C – "Definition of Terms", and Appendix D "Water Quality Criteria" which will not be repeated in the Well Construction Standards Document.

The general requirements along with specifications on procedure, materials, surface construction features, disinfection, water quality sampling, and other pertinent features conform to Chapter II of California Department of Water Resources Bulletin 74, "Water Well Standards State of California", February 1968, except where exceptions are noted in these Standards.



GROUNDWATER QUALITY ZONES
SANTA CLARA COUNTY

FIGURE 1

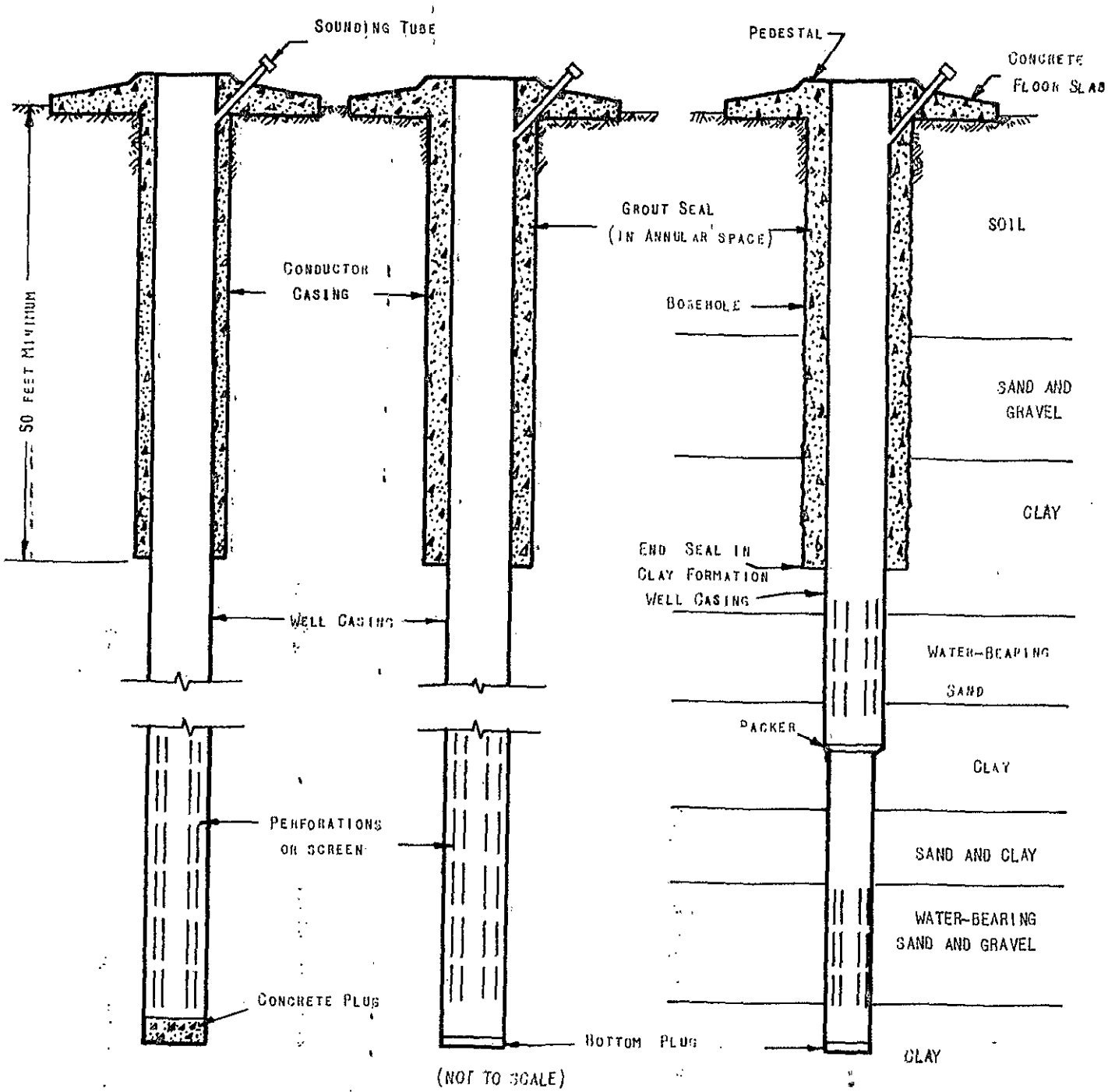


FIGURE 2. SEALING CONDITIONS FOR UPPER ANNULAR SPACE NONGRAVEL PACKED WELLS

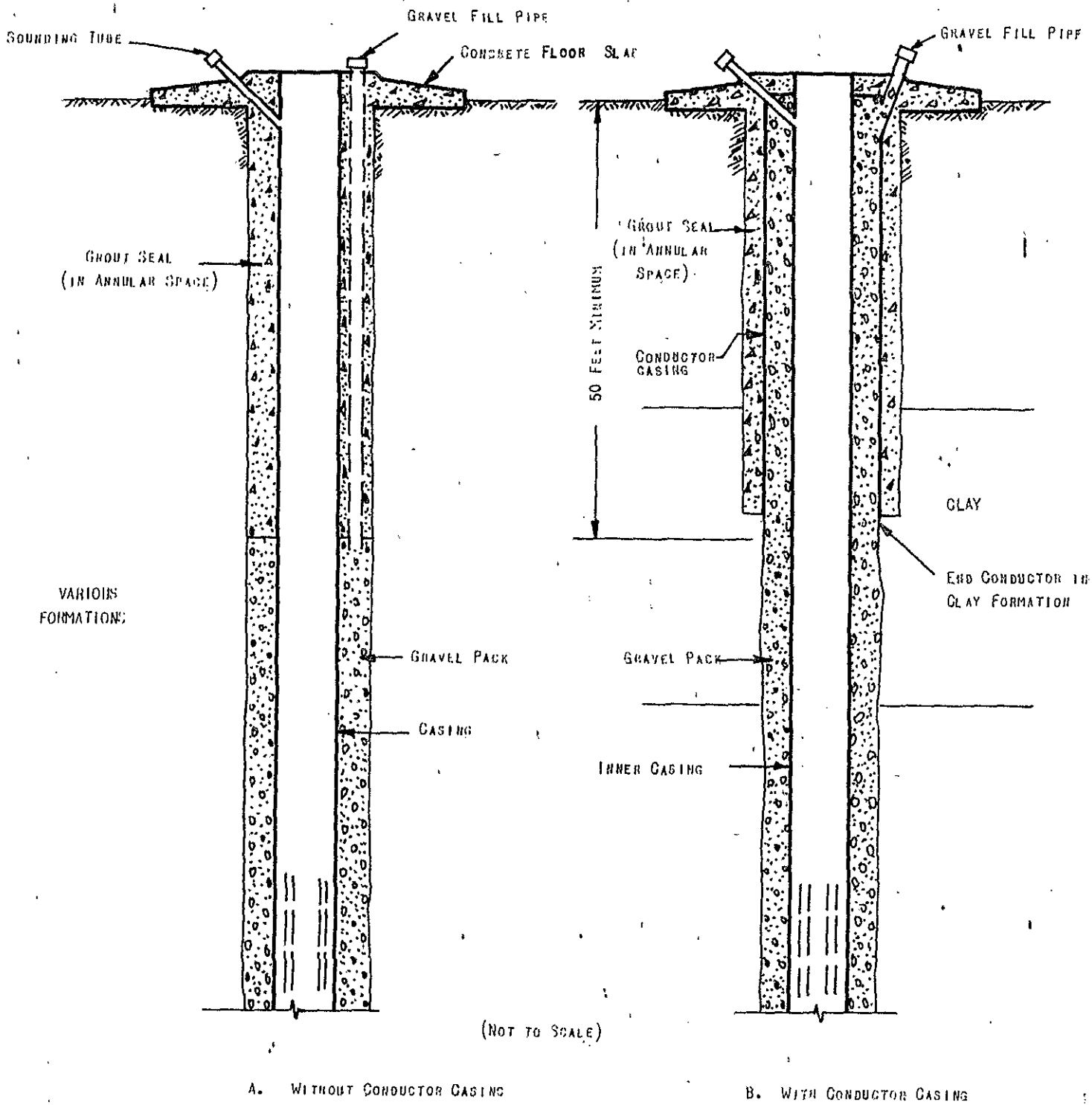


FIGURE 3. SEALING CONDITIONS FOR UPPER ANNULAR SPACE
GRAVEL PACKED WELLS

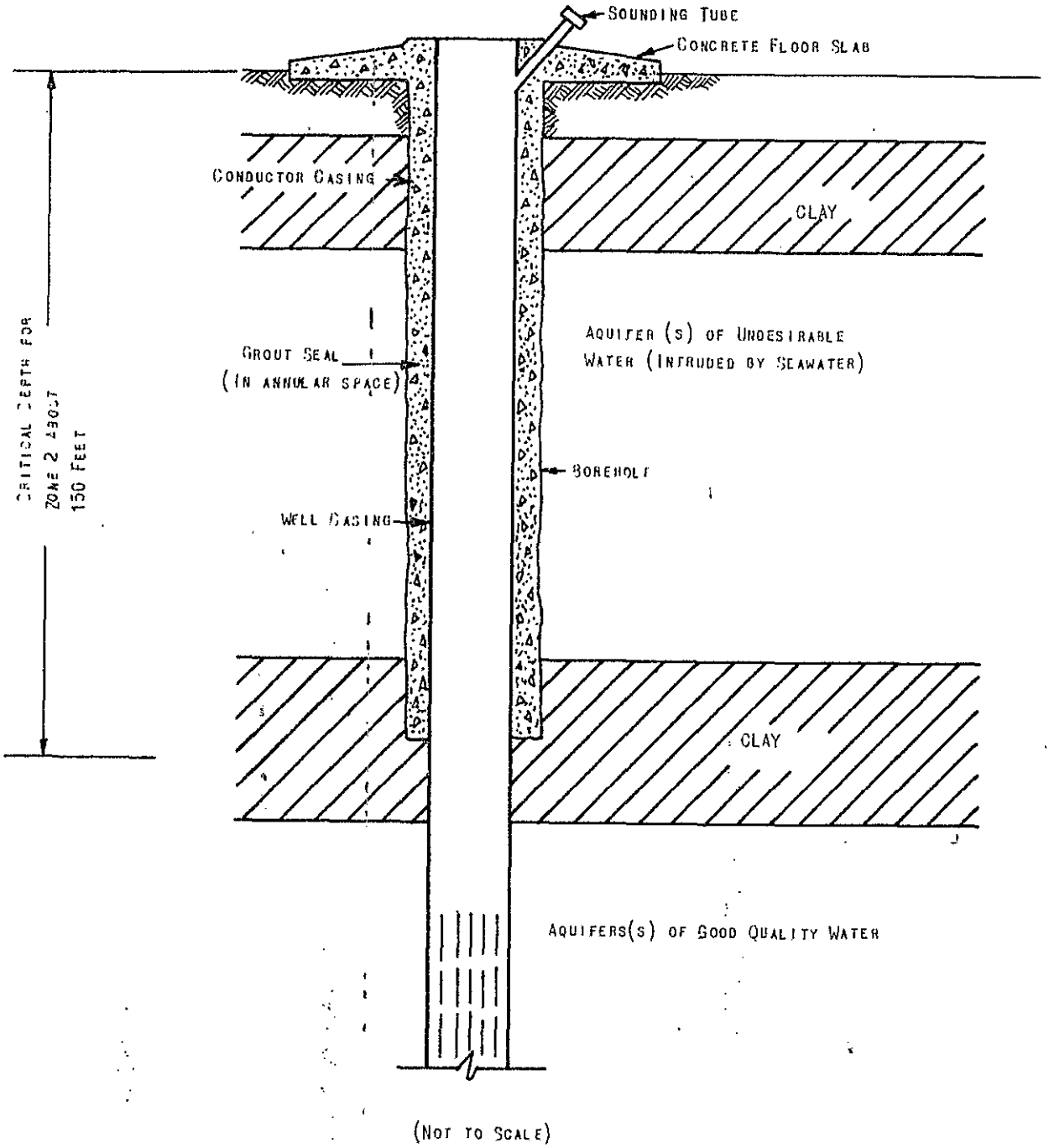


FIGURE 4. EXAMPLE OF SEALING UPPER AQUIFER ZONE WELL IN ZONE 2

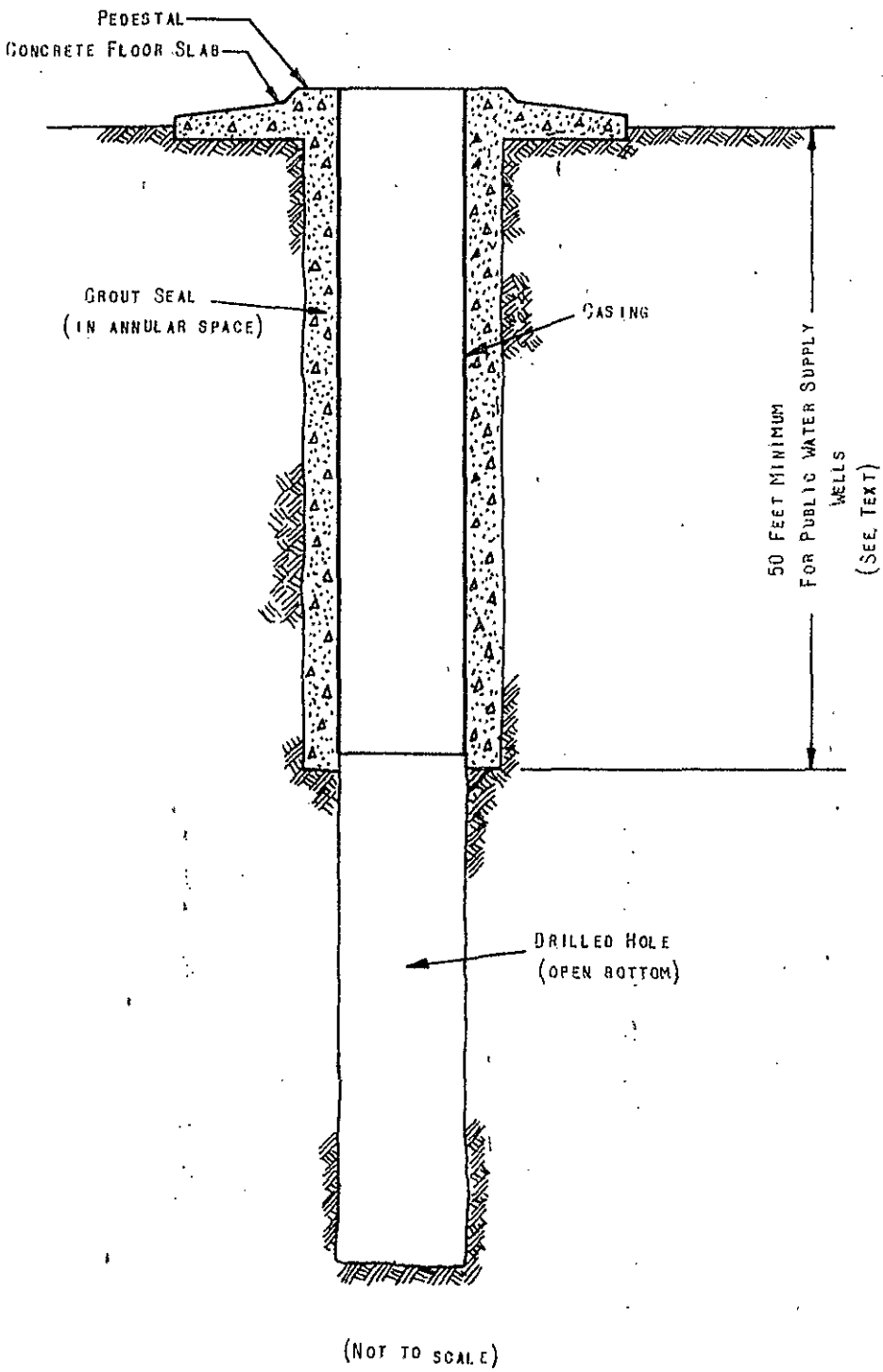
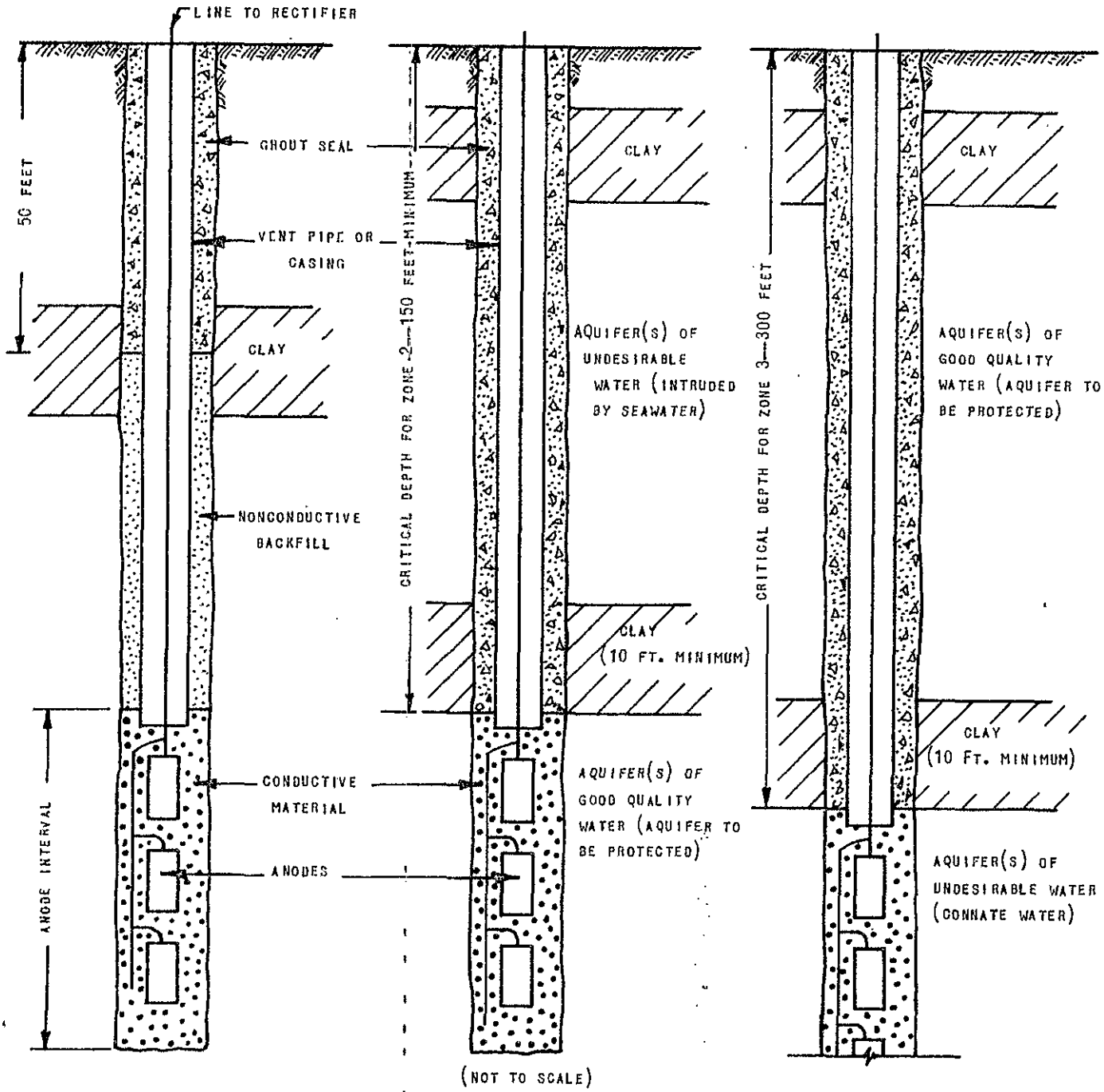


FIGURE 5. EXAMPLE OF SEALING UPPER ANNULAR SPACE
WELL IN BEDROCK FORMATION



A. GENERAL REQUIREMENT, ZONE 1.

B. SEALING REQUIREMENT FOR WELLS DEEPER THAN 150 FEET IN ZONE 2.

C. SEALING REQUIREMENT FOR WELLS DEEPER THAN 300 FEET IN ZONE 3.

FIGURE 6. EXAMPLES OF SEALING CONDITIONS CATHODIC PROTECTION WELLS

STANDARDS FOR THE SEALING OF ABANDONED WELLS SANTA CLARA COUNTY (ABRIDGED)

PURPOSE

The purpose of standards for the sealing of abandoned wells is to protect and preserve the groundwater supplies for future uses and to eliminate the potential physical hazard that exists from wells that are not being used. This is to be accomplished by restoring, as nearly as possible, those subsurface conditions which existed before the well was constructed. Since subsurface conditions vary from place to place, such standards must be formulated so as to conform to the groundwater geohydrologic and water quality conditions of the specific areas within the groundwater basins of Santa Clara County.

WATER QUALITY ZONES

For well sealing purposes, the groundwater basins of Santa Clara County have been divided into three water quality zones, based on the different quality of waters present and on the local geologic conditions. Zone 1, which is the largest portion of the basin, represents the areas where the quality of water at all pumping depth intervals is generally good. Zone 2, near San Francisco Bay, is a multiaquifer area where the shallow zone (0 to 150 feet) may be contaminated or could become contaminated by seawater. In Zone 3, the Evergreen area, degraded quality water occurs below a depth of 300 feet with good quality water overlying this zone. These water quality zones are delineated on Figure 1.

WELL SEALING PROCEDURE

All "abandoned" wells shall be destroyed in such a way that they will not produce water or act as a channel for the interchange of water, when such interchange may result in deterioration of the quality of water in any or all water-bearing formations penetrated, or present a hazard to the safety and well-being of people and animals.

Zone 1

In Zone 1, where the quality of water is generally unimpaired, the objective of the sealing standard is to prevent contamination of the aquifer from surface sources. Here, a "general sealing standard" will apply which will entail the filling of the well with an impervious filler material (inorganic soils of low permeability, bentonite, concrete, or cement grout) from the bottom of the well to a depth of 50 feet. The upper 50 feet of the well shall be filled by the placement of cement grout, neat cement or concrete. Placement of the filler and sealing materials is to be performed in a manner that will prevent bridging, dilution or segregation of the sealing material (tremied into the well from the bottom). Placement of an annular grout seal in the upper 50 feet will be required if there is an annular opening or a gravel envelope around the well casing. Placement of the annular seal in the upper 50 feet, if necessary, shall be accomplished by either the removal of the upper casing or the perforation of the casing with the cement grout forced to pass into the annular opening or gravel pack. Typical general sealing features of a destroyed well are shown on Figure 2.

Zone 2

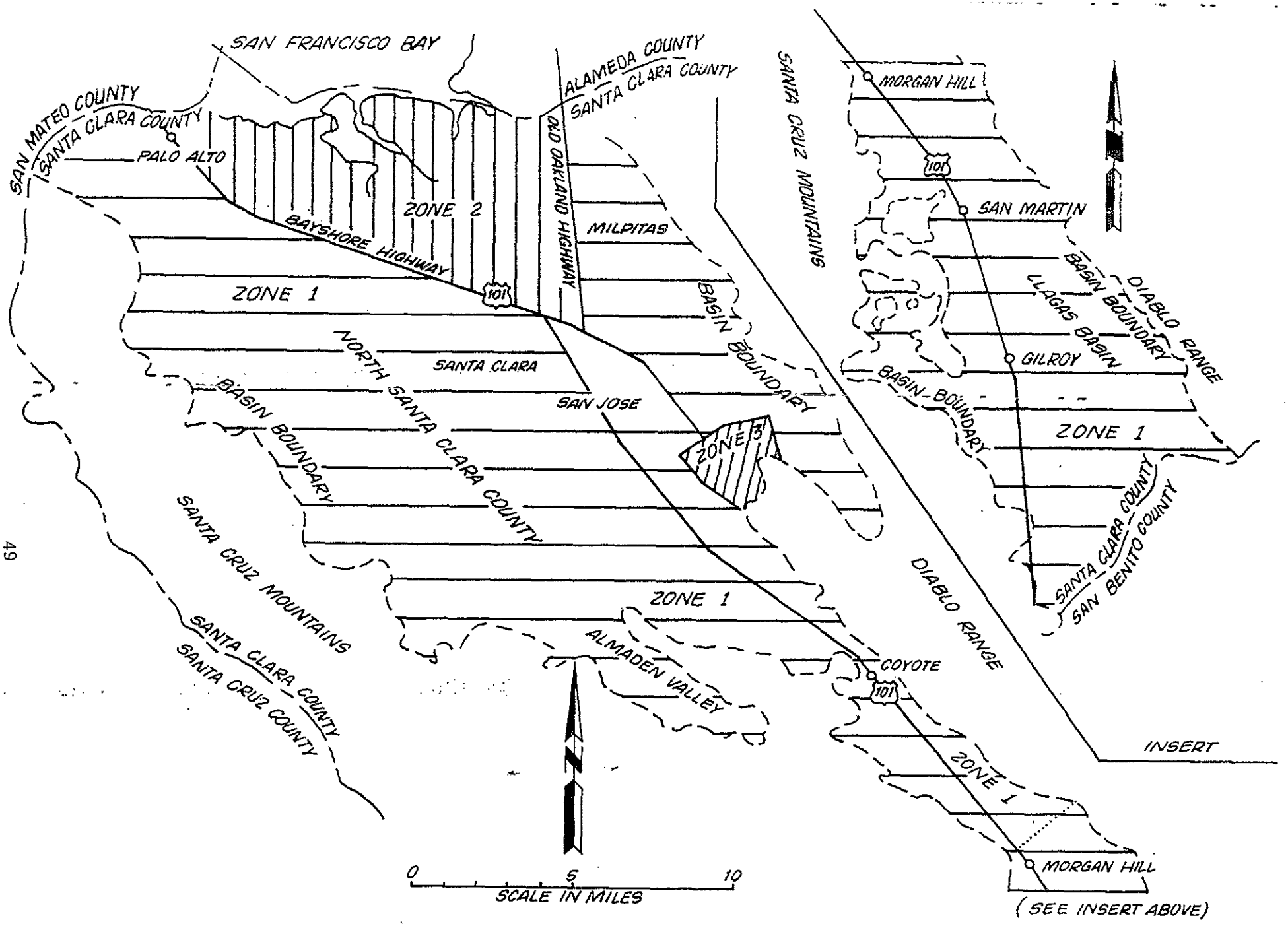
In Zone 2, adjacent to San Francisco Bay where degraded quality water occurs in the shallow zone to a depth of about 150 feet with good quality water in the lower aquifers, it is the objective of the well sealing standard to prevent inter-aquifer flows from the shallow aquifer into the lower aquifers through abandoned wells. In order to accomplish this, all the provisions stated under "general sealing standard" discussed under Zone 1 shall be employed plus the placement of an annular seal opposite a clay layer at a depth of about 150 feet. The annular seal is to be placed by perforating an interval not less than 10 feet at a depth of 150 feet, then filling the casing with cement grout and forcing the cement grout to flow into and seal the annular opening between the well casing and the clay formation or into and seal the gravel pack. Typical sealing features of a destroyed well for Zone 2 are presented on Figure 3.

Zone 3

In Zone 3, the portion of the Evergreen area where aquifers below a depth of 300 feet have yielded poor quality water, it is the objective of the well sealing standard to prevent interchange of water between the lower aquifers containing mineralized connate water and the upper unimpaired water quality aquifers. In order to accomplish this, all provisions stated under "general sealing standards" in Zone 1 shall be employed plus the placement of an annular seal opposite a clay layer at a depth of about 300 feet. The annular seal is to be placed in a similar manner as discussed under Zone 2 and the upper 300 feet of the well shall be sealed with concrete or cement grout. Typical sealing features of a destroyed well for Zone 3 are presented on Figure 4.

REFERENCE

Reference is made to the unabridged version of the Standards for a detailed account of the purposes, objectives, well sealing procedures, sealing materials, additional requirements in urban areas, definition of terms, bibliography, geology of the groundwater basin, water quality criteria, and other pertinent information. Said unabridged version is available for inspection in the District office.



GROUNDWATER QUALITY ZONES
SANTA CLARA COUNTY

FIGURE 1

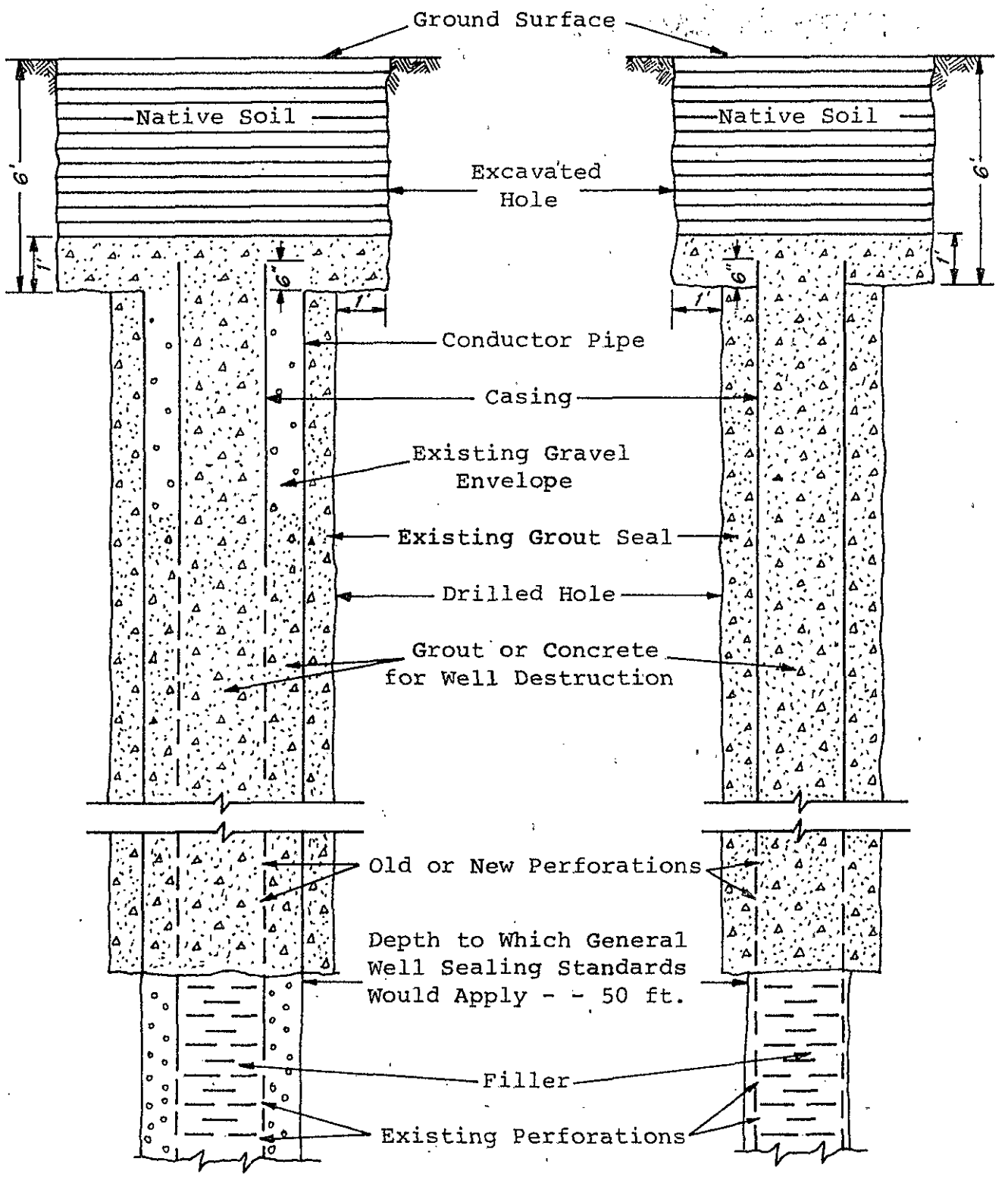


Figure 2(a) Well With Gravel Pack

Figure 2(b) Well Without Gravel Pack

NOT TO SCALE

FIGURE 2. TYPICAL SEALING FEATURES OF DESTROYED WELLS

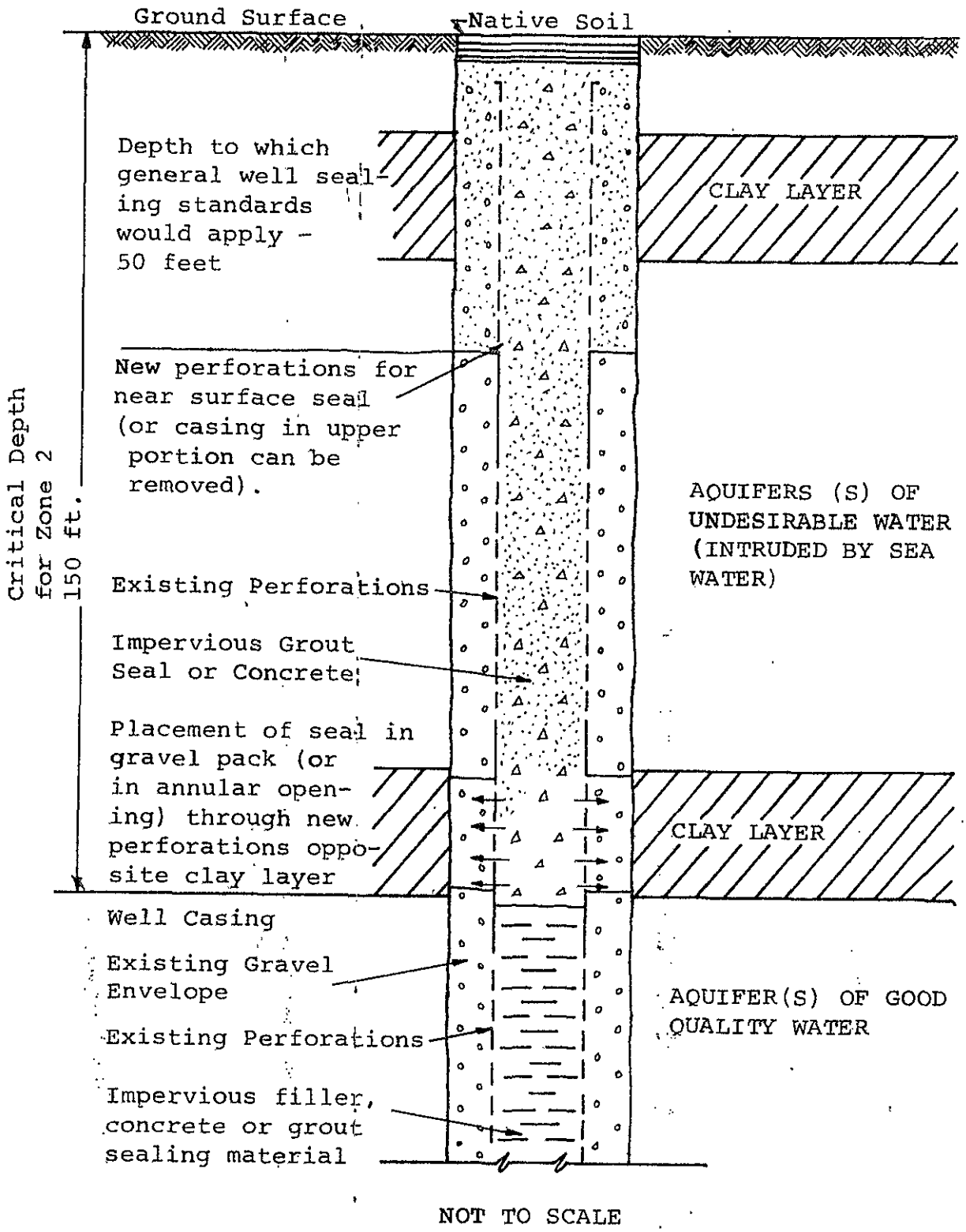


FIGURE 3. TYPICAL SEALING FEATURES OF DESTROYED WELLS FOR ZONE 2 (for gravel packed wells)

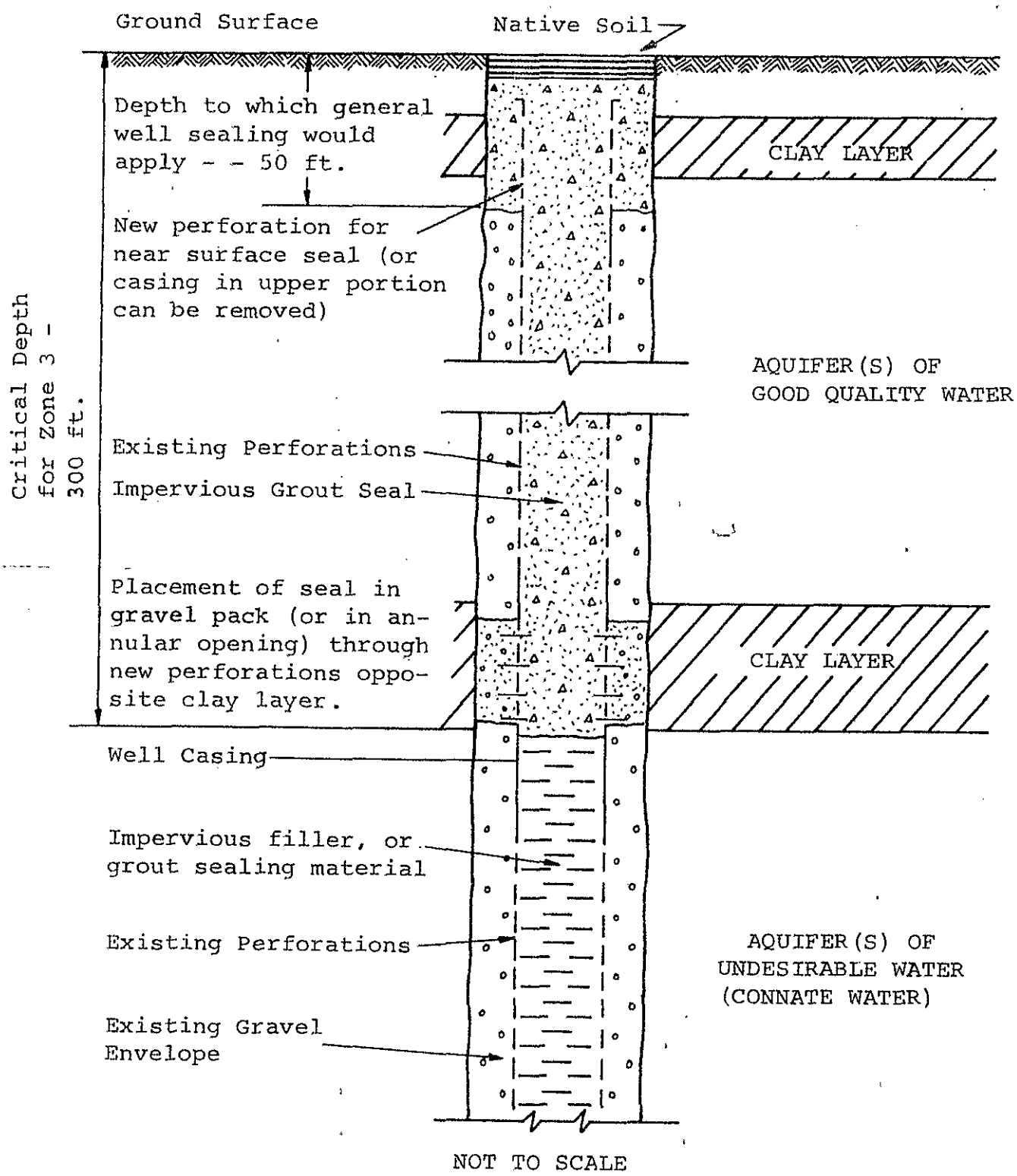


FIGURE 4. TYPICAL SEALING FEATURES OF DESTROYED WELLS FOR ZONE 3 (for gravel packed wells)

Oct 23

#121

OAKLAND SCAVENGER CO.
2601 PERALTA ST.
OAKLAND, CA, 94607

MR HAROLD SINGER
DIVISION OF TECHNICAL SERVICES
STATE WATER RESOURCES CONTROL BOARD
P.O. BOX 100
SACRAMENTO, CA 95801

DEAR MR SINGER:

These are our comments regarding the proposed regulations on underground tanks.

General

Many parts of these regulations are to be conformed to "if feasible" or "if possible". Who is to make such a determination? How will uniformity among various jurisdictions be assured?"

Parts 2611 and 2643

We recommend that underground tanks used to collect waste motor oil for recycling as part of the State's Project SOAR be exempt from these regulations or, at least, exempt from the Inventory Control requirements. Such tanks are usually small and are filled a few gallons at a time. Accurate measures of input will be difficult to make. The contents are not particularly hazardous, and saddling this program with these requirements may just make collecting used oil impractical.

Part 2643

We Recommend that requirements for managerial personnel to do the Inventory measurements on tanks be deleted or changed to "personnel authorized by management".

#122

Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118
TELEPHONE (408) 265-2600

October 22, 1984

Mr. Harold Singer
California State Water Resources
Control Board
Post Office Box 100
Sacramento, CA 95801

Dear Mr. Singer:

Subject: Comments on Subchapter 16 of Chapter 3, Title 23, Calif. Adm. Code (23 CAC Section 2610-2704). Draft proposal regulations governing underground storage of hazardous substance.

The following comment relates to monitoring wells for validation of underground storage tank performance.

The principal objective of the program is to protect the groundwater from hazardous substance spills from underground storage facilities. This is to be accomplished by having the owner either upgrade his facility to a new proposed standard and/or by assessing antecedent and concurrent performance of the facility through a system of validation.

Although we concur with the concept, in certain instances which may arise under the sections on monitoring, the proposed regulations unfairly make the owner accountable for matters that may be beyond his control. The particular reference is to circumstances where the water table occurs at great depths (50 to 200 feet) and deep monitoring wells would be required. Should contamination be found at such depths, the proposed regulations assume the overlying owner to be responsible unless he can prove otherwise. Any attempts at obtaining proof can be excessively burdensome on the owner without any guarantee of success.

We suggest that deep monitoring does not measure the concurrent performance of an underground storage but rather is a groundwater monitoring program; this is not necessarily the responsibility of the facility owner. An otherwise good and valuable legislative action that is unfair in operation will prove ineffective.

Regarding how best to satisfy the requirements of the program, it is my opinion that the Santa Clara Valley Water District's "Monitoring Guidelines" prepared in December 1983, appear to be a practical approach under prevailing conditions in Santa Clara County. A copy is attached. We have specified under "Responsibility of Performance" that the owner shall enlist a qualified consultant to design (within prescribed limits) and install the validation system, based upon the consultant's preliminary exploration and his experience and judgment of local subsurface conditions. We specify minimum requirements. Additional requirements above minimum may have to be applied should exploration results show these are necessary in the judgment of the owner, or his consultant or the regulatory agency. We recognize no one proposal will completely satisfy all the possible conditions or be completely fool-proof. What is needed is a plan that is reasonably effective, practical and fair in the sense that it makes the owner responsible only for matters that are within his control.

Thank you for considering these comments.

Sincerely,

John T. O'Halloran

John T. O'Halloran
General Manager

Enclosure: SCVWD "Monitoring Guidelines"

cc: Mr. Harold E. Eagle (w/enclosure)
California State Water
Resources Board
Post Office Box 100
Sacramento, CA 95801

#122-B HS

Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118
TELEPHONE (408) 265-2600

December 18, 1984

Mr. Harold Singer
California State Water
Resources Control Board
Post Office Box 100
Sacramento, California 95801

Dear Mr. Singer:

Last year, at the request of the various jurisdictions in Santa Clara County, the District developed "Groundwater Monitoring Guidelines" (December 1983) for the cities and county to use as a technical reference to the underground storage ordinance now being implemented. The Guidelines were developed with the benefit of input from representatives of industry and local and state government. However, two cities within Santa Clara County have not adopted the local ordinance and, therefore, may fall under the jurisdiction of the state Sher Bill. With this background, we offer the following comments on the November 9 draft of the state underground tank regulations.

1. Objectives

In Article 4, Section 2640(b), words have been deleted so that the program now does not attempt to identify tanks which have been responsible for unauthorized releases in the past. The implication is that soil or groundwater contamination from previous leaks does not pose a threat to groundwater quality. The District disagrees and suggests that the program should address past leaks so that groundwater quality will be adequately protected.

2. Tank Testing

Several of the monitoring alternatives require tank testing as one of the means of verifying the tank's integrity. The accuracy required of the tank test is 0.05 gallons per hour. At this level of accuracy, a tank could leak as much as 34 gallons per month and still pass the test. Allowing this type of test is inconsistent with the Sher Bill where, in Section 25284.1(a) it specifies that "the (tank) owner shall outfit the facility with a monitoring system capable of detecting unauthorized releases." Thirty-four gallons per month should certainly be considered an "unauthorized release."

Received DTS
DEC 19 1984

3. Inventory Reconciliation

Inventory Reconciliation by means of input and withdrawal meters is required for three of the monitoring alternatives. However, since the required accuracy of the input meter is 1/2 cubic inch per gallon, a 10,000 gallon tank which is filled once per week could leak 175 gallons per month and still satisfy the inventory reconciliation requirements. A leak of that magnitude poses a serious threat to the underlying groundwater quality.

4. Groundwater Monitoring Wells

The District suggests that groundwater monitoring wells are the best means of verifying the integrity of existing underground storage tanks. Since the purpose of the program is to protect the soil and groundwater from contamination, direct monitoring of the soil and groundwater for all existing underground tanks would provide the best protection from extensive contamination of the groundwater.

The District is concerned, however, with the requirement of wells up to 120 feet deep could provide a pathway for contamination to travel to deeper portions of the underlying aquifer. In the District-developed Guidelines, we require a maximum depth of 45 feet for monitoring wells. If properly located and constructed, wells of this depth will, in our opinion, detect contamination before a major problem develops. Also, the shallower wells would not be as much of a financial burden on the tank owner.

I appreciate the Board's consideration of the District's comments on this important program.

Sincerely,

John T. O'Halloran

John T. O'Halloran
General Manager

#123

NATIONAL COTTONSEED PRODUCTS ASSOCIATION, INC.

Established 1897

TELEPHONE (901) 324-4417 | MEMPHIS, TENN. 38112 | MAIL ADDRESS P. O. BOX 12023

October 23, 1984

State of California
State Water Resources Control Board
901 P Street
P. O. Box 100
Sacramento, California 95801

RE: Proposed regulations governing underground storage of hazardous substances.

Gentlemen:

The following statement is submitted in response to the invitation extended by the State Water Resources Control Board in a public notice requesting comments regarding the proposed changes and additions to Subchapter 16 of Chapter 3, Title 23, California Administrative Code (23 CAC Section 2610-2704).

The National Cottonseed Products Association (NCPA) is the national trade association of the cottonseed crushing industry, representing more than 90% of the cottonseed crushers in this country and virtually every cottonseed crushing mill in California. All of the cottonseed crushers in California untilize hexane for extracting oil from the seed kernel. Hexane is primarily stored in underground tanks due to flammability considerations. These tanks were installed in accordance with the specifications of the American Petroleum Institute (API) and the National Fire Protection Association (NFPA). The tanks are located within the controlled area of the extraction plant. Any type of drilling or boring activities within the controlled area of an extraction plant would not be permitted under specifications of NFPA #36. Consequently, this underground tank regulation, if promulgated as it currently reads, may create safety hazards and confusion.

Any regulation covering existing facilities, (which were constructed under approved procedures) should provide employers with a maximum freedom of implementation. We strongly prefer performance oriented standards to those which are tightly specified.

The cottonseed crushers are currently utilizing a daily inventory control system which employs accepted technological procedures. The purpose of this daily inventory control is to detect any unauthorized or inadvertant releases. Such a daily inventory control system is equivalent to daily visual inspections since immediate leak detection is possible. Thus further monitoring is unnecessary and burdensome.

Respectfully submitted,

Tom Wedegaertner

Thomas C. Wedegaertner
Assistant Director
Research and Education

#123C

NATIONAL COTTONSEED PRODUCTS ASSOCIATION, INC.

Established 1897

TELEPHONE (901) 324-4417

MEMPHIS, TENN. 38112

MAIL ADDRESS P. O. BOX 12023

November 21, 1984

State of California
State Water Resources Control Board
P. O. Box 100
Sacramento, California 95801

Gentlemen:

This statement is submitted in response to your public notice requesting comments on the proposed changes and additions to Subchapter 16 of Chapter 3, Title 23, California Administrative Code.

The National Cottonseed Products Association is the national trade association of the cottonseed crushing industry. This statement is submitted on behalf of our members in California.

The proposed section covering storage tank monitoring criteria for existing underground storage tanks (Article 4), in our opinion, goes well beyond the intent of Assembly Bill 1362. The methods described are more than what is necessary and in some cases even exceed currently available "state of the art" technology. If we are expected to develop the necessary technology, then time for research and development of acceptable methods must be permitted.

The cottonseed crushers in California utilize hexane for the extraction of the oil from cottonseed. Hexane is a volatile, combustible, petroleum product with many required safety considerations. These considerations will preclude complete compliance with any of the proposed alternative methods of monitoring.

Hexane should be considered like gasoline since it is not sufficiently different from gasoline to warrant its exclusion from the alternative monitoring methods designed for motor vehicle fuel tanks. Hexane is derived from the gasoline production process and could actually power an internal combustion engine. If monitoring procedures for gasoline storage tanks cannot be used, then the appropriate monitoring alternative for a hexane storage tank would not be at all clear. Daily tank gauging and inventory reconciliation are currently used by cottonseed crushers as a means of detecting unauthorized releases.

Hexane and other similar petroleum products clearly should be allowed to comply with the monitoring requirements set forth for motor vehicle fuel storage tanks.

We agree that the residents of California need reasonable assurances that their ground water will not be contaminated, but this proposed regulation goes well beyond any sort of reasonableness, and should be reconsidered.

Respectfully submitted,

Tom Wedegaertner

Thomas C. Wedegaertner
Assistant Director
Research and Education

Received D15
NOV 30 1984

#124

7-ELEVEN FOOD STORES • WESTERN REGION MARKETING DEPARTMENT
1475 S. STATE COLLEGE BLVD., SUITE 206 • ANAHEIM, CALIFORNIA 92806-5769 • PHONE (714) 520-0458

October 22, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
Paul R. Bonderson Building
901 P. Street
P. O. Box 100
Sacramento, California 95801

Re: Proposed Regulations Governing Underground Storage of Hazardous Substances

Dear Mr. Singer,

The Southland Corporation appreciates this opportunity to comment on the State Water Resources Control Board's proposed regulations governing underground storage of hazardous substances. We support the Board's attempts to fashion a responsible program and we offer our assistance in developing a practical program which protects public health and the environment.

We respectfully submit the following comments:

1. Alternative Inventory Control and Leak Detection Technology. The Board has understandably relied upon existing inventory control and leak detection technology to fashion the proposed requirements. In fact, the Board has failed to consider innovative electronic inventory control and leak detection systems which are currently available. For example, Tidel Systems, a division of The Southland Corporation, has developed an electronic system which provides tank gauging, temperature compensation, inventory control and leak detection services with much greater reliability and accuracy (within + - .10 inch) than the conventional methods which the proposed regulations envision. This system is currently being used in field locations with outstanding success. We urge the Board to consider electronic systems such as Tidel's as a reliable substitute for vadose and groundwater monitoring.

2. Construction Standards for New Motor Vehicle Fuels Tanks. We believe that the proposed construction standard for new motor

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vehicle fuels tanks is inconsistent with the letter and spirit of Section 25284(a) (7) of Chapter 6.7 of the Health and Safety Code. The clear intent of this statutory provision was to excuse fuel tanks from secondary containment requirements if (1) the tanks are constructed of specified materials, (2) the tanks are installed in conjunction with a leak detection system, and (3) certain monitoring practices are implemented. The Legislature recognized that fuels tanks represented less of a hazard to public health than tanks containing other hazardous substances. However, the effect of the proposed construction and monitoring standards in Sections 2633 and 2634 in the proposed regulations is to subject fuel tanks to more rigorous requirements (including secondary containment) than tanks containing toxic chemicals. We urge the Board to restore the equity which the Legislature intended to apply to new motor vehicle fuels tanks.

3. Non-Pressurized Piping Systems. The regulations establish requirements for "pressurized piping systems", see e.g. Section 2633(f). However, the definition of "pipe", "tanks" and "underground storage tank" do not distinguish pressurized from non-pressurized piping. Non-pressurized piping includes vent piping and vapor recovery. We suggest that the definition of "pipe" in Section 2620 be revised to reflect this distinction and to exempt non-pressurized piping from the regulations.

4. Loss or Gain of Hazardous Substances. Sections 2634(d) and 2643(f) invoke specific requirements if certain losses or gains of hazardous substances are observed. We have two comments pertaining to loss or gain:

   a. The regulations should refer to "a gain of water or a loss of hazardous substances" rather than a "loss or gain of hazardous substances."

   b. Given the normal accuracy of conventional stick gauging we believe that the daily loss or gain criterion of 50 gallons is too low. We have conducted computer simulations of no-leak situations assuming a stick gauging accuracy of ±1 inch. Those simulations yield a daily deviation of up to ±139 gallons and show deviations of more than ±50 gallons in 16 out of 30 days in the simulated month. We would be happy to share these computer simulations with you and to assist you in developing a more realistic daily loss or gain figure.

5. Notification of Owner. Sections 2634(e) (1) requires the operator to notify the owner of the specified gain or loss within 24 hours of the completion of the daily reconciliation. We recommend that "24 hours" be changed to "one working day."

6. Operator Reconciliation. Section 2634(e) (2) requires an operator to review inventory records within two (2) hours to determine whether or not an initial loss or gain finding is in error. We believe that this requirement is impractical and we suggest that the review should be conducted within twelve (12) hours instead.

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7. Inventory Control. Section 2643(a) requires "owners" to implement an inventory control program. Inventory control is an essential responsibility of operators. A successful inventory control program must be implemented at the retail outlet level. Accordingly, we recommend that the reference to "owners" in Sections 2643(a) and (b) be changed to "operators" where appropriate to conform with industry practices.

8. Tank Testing Schedule. Section 2642(d) outlines a tank testing schedule for categories of tanks. We believe that a rigid schedule is unnecessary. Tanks need only be tested when inventory control and other monitoring measures indicate a potential leak situation.

9. Assurance Groundwater Monitoring. We are very concerned from a public health viewpoint about the assurance groundwater monitoring requirements set fourth in Section 2647. A monitoring well which extends into a deep aquifer could serve as a conduit of contamination from a shallow system into an important drinking water supply. We strongly encourage the Board to reconsider the placement of assurance groundwater monitoring wells.

Once again, we appreciate the opportunity to comment on these regulations. If you have any questions regarding our comments, please contact me at (714) 520-0458.

Sincerely,

Bob Johnson

Bob Johnson
Western Region
Gasoline Marketing Manager

BJ:laj

#124

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 1.00 GALLONS PER HOUR WILL START ON DAY 12
THE TANK GAUGE HAS AN ACCURACY OF +/- 0.100 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	1077.0	0.0	4923.0	4915.0	0.0	-8.0	NEUTRAL
2	1061.0	0.0	3862.0	3863.0	0.0	1.0	NEUTRAL
3	988.0	0.0	2874.0	2871.0	0.0	-3.0	NEUTRAL
4	1012.0	4000.0	5862.0	5854.0	0.0	-8.0	NEUTRAL
5	1002.0	0.0	4860.0	4857.0	0.0	-3.0	NEUTRAL
6	1003.0	0.0	3857.0	3860.0	0.0	3.0	NEUTRAL
7	1067.0	0.0	2790.0	2780.0	0.0	-10.0	NEUTRAL
8	1124.0	4000.0	5666.0	5667.0	0.0	1.0	NEUTRAL
9	1123.0	0.0	4543.0	4551.0	0.0	8.0	NEUTRAL
10	872.0	0.0	3671.0	3668.0	0.0	-3.0	NEUTRAL
11	1113.0	0.0	2558.0	2549.0	0.0	-9.0	NEUTRAL
12	943.0	4000.0	5615.0	5602.0	24.0	-13.0	DOWN
13	983.0	0.0	4632.0	4589.0	48.0	-43.0	DOWN
14	1126.0	0.0	3506.0	3430.0	72.0	-76.0	NEUTRAL
15	978.0	4000.0	6528.0	6443.0	96.0	-85.0	DOWN
16	915.0	0.0	5613.0	5498.0	120.0	-115.0	DOWN
17	1037.0	0.0	4576.0	4436.0	144.0	-140.0	DOWN
18	1006.0	0.0	3570.0	3391.0	168.0	-179.0	DOWN
19	1109.0	4000.0	6461.0	6258.0	192.0	-203.0	DOWN
20	892.0	0.0	5569.0	5350.0	216.0	-219.0	DOWN
21	1134.0	0.0	4435.0	4185.0	240.0	-250.0	NEUTRAL
22	967.0	0.0	3468.0	3217.0	264.0	-251.0	DOWN
23	1055.0	4000.0	6413.0	6114.0	288.0	-299.0	DOWN
24	1025.0	0.0	5388.0	5079.0	312.0	-309.0	DOWN
25	1121.0	0.0	4267.0	3939.0	336.0	-328.0	DOWN
26	859.0	0.0	3408.0	3048.0	360.0	-360.0	DOWN
27	970.0	4000.0	6438.0	6054.0	384.0	-384.0	DOWN
28	863.0	0.0	5575.0	5174.0	408.0	-401.0	NEUTRAL
29	850.0	0.0	4725.0	4279.0	432.0	-446.0	DOWN
30	1127.0	0.0	3598.0	3138.0	456.0	-460.0	DOWN

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 1.00 GALLONS PER HOUR WILL START ON DAY 12
THE TANK GAUGE HAS AN ACCURACY OF +/- 1.000 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	927.0	0.0	5073.0	5143.0	0.0	70.0	NEUTRAL
2	910.0	0.0	4163.0	4033.0	0.0	-130.0	NEUTRAL
3	1138.0	0.0	3025.0	3128.0	0.0	103.0	NEUTRAL
4	861.0	4000.0	6164.0	6237.0	0.0	73.0	NEUTRAL
5	852.0	0.0	5312.0	5445.0	0.0	133.0	NEUTRAL
6	853.0	0.0	4459.0	4349.0	0.0	-110.0	NEUTRAL
7	916.0	0.0	3543.0	3570.0	0.0	27.0	NEUTRAL
8	973.0	0.0	2570.0	2480.0	0.0	-90.0	DOWN
9	972.0	4000.0	5598.0	5538.0	0.0	-60.0	UP
10	1025.0	0.0	4573.0	4687.0	0.0	114.0	UP
11	962.0	0.0	3611.0	3649.0	0.0	38.0	DOWN
12	1093.0	0.0	2518.0	2485.0	24.0	-33.0	DOWN
13	1132.0	4000.0	5386.0	5246.0	48.0	-140.0	DOWN
14	976.0	0.0	4410.0	4446.0	72.0	36.0	NEUTRAL
15	1127.0	0.0	3283.0	3184.0	96.0	-99.0	DOWN
16	1064.0	4000.0	6219.0	6025.0	120.0	-194.0	DOWN
17	887.0	0.0	5332.0	5084.0	144.0	-248.0	DOWN
18	856.0	0.0	4476.0	4328.0	168.0	-148.0	DOWN
19	958.0	0.0	3518.0	3375.0	192.0	-143.0	DOWN
20	1042.0	4000.0	6476.0	6384.0	216.0	-92.0	UP
21	984.0	0.0	5492.0	5304.0	240.0	-188.0	NEUTRAL
22	1116.0	0.0	4376.0	4101.0	264.0	-275.0	DOWN
23	904.0	0.0	3472.0	3239.0	288.0	-233.0	DOWN
24	874.0	4000.0	6598.0	6188.0	312.0	-410.0	DOWN
25	971.0	0.0	5627.0	5236.0	336.0	-391.0	DOWN
26	1008.0	0.0	4619.0	4135.0	360.0	-484.0	DOWN
27	1119.0	0.0	3500.0	2999.0	384.0	-501.0	DOWN
28	1013.0	4000.0	6487.0	6017.0	408.0	-470.0	NEUTRAL
29	999.0	0.0	5488.0	5057.0	432.0	-431.0	DOWN
30	977.0	0.0	4511.0	4154.0	456.0	-357.0	DOWN

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 0.05 GALLONS PER HOUR WILL START ON DAY 12
THE TANK GAUGE HAS AN ACCURACY OF +/- 0.100 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	889.0	0.0	5111.0	5099.0	0.0	-12.0	NEUTRAL
2	874.0	0.0	4237.0	4234.0	0.0	-3.0	NEUTRAL
3	1099.0	0.0	3138.0	3131.0	0.0	-7.0	NEUTRAL
4	1123.0	4000.0	6015.0	6003.0	0.0	-12.0	NEUTRAL
5	1114.0	0.0	4901.0	4895.0	0.0	-6.0	NEUTRAL
6	1116.0	0.0	3785.0	3784.0	0.0	-1.0	NEUTRAL
7	881.0	0.0	2904.0	2917.0	0.0	13.0	NEUTRAL
8	939.0	4000.0	5965.0	5963.0	0.0	-2.0	NEUTRAL
9	935.0	0.0	5030.0	5033.0	0.0	3.0	NEUTRAL
10	985.0	0.0	4045.0	4039.0	0.0	-6.0	NEUTRAL
11	927.0	0.0	3118.0	3104.0	0.0	-14.0	NEUTRAL
12	1055.0	4000.0	6063.0	6069.0	1.2	6.0	UP
13	1095.0	0.0	4968.0	4966.0	2.4	-2.0	NEUTRAL
14	940.0	0.0	4028.0	4018.0	3.6	-10.0	NEUTRAL
15	1088.0	0.0	2940.0	2945.0	4.8	5.0	NEUTRAL
16	1029.0	4000.0	5911.0	5906.0	6.0	-5.0	NEUTRAL
17	850.0	0.0	5061.0	5053.0	7.2	-8.0	NEUTRAL
18	1119.0	0.0	3942.0	3945.0	8.4	3.0	UP
19	919.0	0.0	3023.0	3001.0	9.6	-22.0	DOWN
20	1004.0	4000.0	6019.0	6002.0	10.8	-17.0	DOWN
21	946.0	0.0	5073.0	5047.0	12.0	-26.0	NEUTRAL
22	1080.0	0.0	3993.0	3988.0	13.2	-5.0	DOWN
23	869.0	0.0	3124.0	3097.0	14.4	-27.0	DOWN
24	1136.0	4000.0	5988.0	5972.0	15.6	-16.0	NEUTRAL
25	933.0	0.0	5055.0	5042.0	16.8	-13.0	DOWN
26	972.0	0.0	4083.0	4062.0	18.0	-21.0	NEUTRAL
27	1084.0	0.0	2999.0	2978.0	19.2	-21.0	NEUTRAL
28	974.0	4000.0	6025.0	6006.0	20.4	-19.0	NEUTRAL
29	962.0	0.0	5063.0	5050.0	21.6	-13.0	DOWN
30	940.0	0.0	4123.0	4093.0	22.8	-30.0	NEUTRAL

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 0.05 GALLONS PER HOUR WILL START ON DAY 12
THE TANK GAUGE HAS AN ACCURACY OF +/- 1.000 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	1114.0	0.0	4886.0	4992.0	0.0	106.0	NEUTRAL
2	1096.0	0.0	3790.0	3698.0	0.0	-92.0	NEUTRAL
3	1027.0	0.0	2763.0	2639.0	0.0	-124.0	NEUTRAL
4	1049.0	4000.0	5714.0	5823.0	0.0	109.0	NEUTRAL
5	1042.0	0.0	4672.0	4560.0	0.0	-112.0	NEUTRAL
6	1039.0	0.0	3633.0	3562.0	0.0	-71.0	NEUTRAL
7	1105.0	0.0	2528.0	2586.0	0.0	58.0	NEUTRAL
8	861.0	4000.0	5667.0	5598.0	0.0	-69.0	DOWN
9	859.0	0.0	4808.0	4785.0	0.0	-23.0	UP
10	912.0	0.0	3896.0	3764.0	0.0	-132.0	NEUTRAL
11	851.0	0.0	3045.0	3112.0	0.0	67.0	DOWN
12	981.0	4000.0	6064.0	6083.0	1.2	19.0	UP
13	1023.0	0.0	5041.0	4979.0	2.4	-62.0	NEUTRAL
14	862.0	0.0	4179.0	4037.0	3.6	-142.0	NEUTRAL
15	1016.0	0.0	3163.0	3188.0	4.8	25.0	UP
16	952.0	4000.0	6211.0	6164.0	6.0	-47.0	DOWN
17	1074.0	0.0	5137.0	5063.0	7.2	-74.0	UP
18	1045.0	0.0	4092.0	4139.0	8.4	47.0	DOWN
19	1144.0	0.0	2948.0	3022.0	9.6	74.0	UP
20	930.0	4000.0	6018.0	5891.0	10.8	-127.0	DOWN
21	871.0	0.0	5147.0	5223.0	12.0	76.0	NEUTRAL
22	1006.0	0.0	4141.0	4153.0	13.2	12.0	NEUTRAL
23	1093.0	0.0	3048.0	3120.0	14.4	72.0	UP
24	1062.0	4000.0	5986.0	5904.0	15.6	-82.0	NEUTRAL
25	858.0	0.0	5128.0	5089.0	16.8	-39.0	DOWN
26	894.0	0.0	4234.0	4128.0	18.0	-106.0	DOWN
27	1008.0	0.0	3226.0	3121.0	19.2	-105.0	UP
28	900.0	4000.0	6326.0	6276.0	20.4	-50.0	NEUTRAL
29	890.0	0.0	5436.0	5452.0	21.6	16.0	DOWN
30	866.0	0.0	4570.0	4684.0	22.8	114.0	UP

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 0.00 GALLONS PER HOUR WILL START ON DAY 0
THE TANK GAUGE HAS AN ACCURACY OF +/- 0.100 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	853.0	0.0	5147.0	5146.0	0.0	-1.0	NEUTRAL
2	1135.0	0.0	4012.0	4020.0	0.0	8.0	NEUTRAL
3	1064.0	0.0	2948.0	2952.0	0.0	4.0	NEUTRAL
4	1086.0	4000.0	5862.0	5861.0	0.0	-1.0	NEUTRAL
5	1078.0	0.0	4784.0	4789.0	0.0	5.0	NEUTRAL
6	1077.0	0.0	3707.0	3717.0	0.0	10.0	NEUTRAL
7	1143.0	0.0	2564.0	2561.0	0.0	-3.0	NEUTRAL
8	901.0	4000.0	5663.0	5672.0	0.0	9.0	UP
9	898.0	0.0	4765.0	4750.0	0.0	-15.0	DOWN
10	950.0	0.0	3815.0	3819.0	0.0	4.0	NEUTRAL
11	888.0	0.0	2927.0	2925.0	0.0	-2.0	NEUTRAL
12	1017.0	4000.0	5910.0	5900.0	0.0	-10.0	DOWN
13	1058.0	0.0	4852.0	4863.0	0.0	11.0	NEUTRAL
14	900.0	0.0	3952.0	3955.0	0.0	3.0	NEUTRAL
15	1053.0	0.0	2899.0	2892.0	0.0	-7.0	DOWN
16	992.0	4000.0	5907.0	5919.0	0.0	12.0	UP
17	1113.0	0.0	4794.0	4805.0	0.0	11.0	NEUTRAL
18	1080.0	0.0	3714.0	3709.0	0.0	-5.0	NEUTRAL
19	881.0	0.0	2833.0	2831.0	0.0	-2.0	NEUTRAL
20	966.0	4000.0	5867.0	5870.0	0.0	3.0	NEUTRAL
21	906.0	0.0	4961.0	4957.0	0.0	-4.0	NEUTRAL
22	1044.0	0.0	3917.0	3909.0	0.0	-8.0	NEUTRAL
23	1130.0	0.0	2787.0	2787.0	0.0	0.0	NEUTRAL
24	1099.0	4000.0	5688.0	5697.0	0.0	9.0	NEUTRAL
25	897.0	0.0	4791.0	4778.0	0.0	-13.0	NEUTRAL
26	933.0	0.0	3858.0	3867.0	0.0	9.0	UP
27	1045.0	0.0	2813.0	2822.0	0.0	9.0	NEUTRAL
28	937.0	4000.0	5876.0	5861.0	0.0	-15.0	NEUTRAL
29	925.0	0.0	4951.0	4943.0	0.0	-8.0	NEUTRAL
30	905.0	0.0	4046.0	4048.0	0.0	2.0	NEUTRAL

TIDEL TANK SIMULATION PROGRAM (c) 1984

FOR THIS SIMULATION:

A LEAK OF 0.00 GALLONS PER HOUR WILL START ON DAY 0
THE TANK GAUGE HAS AN ACCURACY OF +/- 1.000 INCHES

DAY	GAS SOLD	GAS DELIVERED	ACCNT GALLONS	MEASURED GALLONS	TOTAL LOSS	PROD VARI.	TREND
1	1077.0	0.0	4923.0	4850.0	0.0	-73.0	NEUTRAL
2	1061.0	0.0	3862.0	3874.0	0.0	12.0	NEUTRAL
3	988.0	0.0	2874.0	2845.0	0.0	-29.0	NEUTRAL
4	1012.0	4000.0	5862.0	5797.0	0.0	-65.0	NEUTRAL
5	1002.0	0.0	4860.0	4855.0	0.0	-5.0	NEUTRAL
6	1003.0	0.0	3857.0	3890.0	0.0	33.0	NEUTRAL
7	1067.0	0.0	2790.0	2686.0	0.0	-104.0	NEUTRAL
8	1124.0	4000.0	5666.0	5705.0	0.0	39.0	UP
9	1123.0	0.0	4543.0	4627.0	0.0	84.0	UP
10	872.0	0.0	3671.0	3643.0	0.0	-28.0	NEUTRAL
11	1113.0	0.0	2558.0	2466.0	0.0	-92.0	DOWN
12	943.0	4000.0	5615.0	5744.0	0.0	129.0	UP
13	983.0	0.0	4632.0	4681.0	0.0	49.0	UP
14	1126.0	0.0	3506.0	3474.0	0.0	-32.0	NEUTRAL
15	978.0	0.0	2528.0	2654.0	0.0	126.0	UP
16	915.0	4000.0	5613.0	5677.0	0.0	64.0	DOWN
17	1037.0	0.0	4576.0	4617.0	0.0	41.0	UP
18	1006.0	0.0	3570.0	3452.0	0.0	-118.0	DOWN
19	1109.0	4000.0	6461.0	6377.0	0.0	-84.0	DOWN
20	892.0	0.0	5569.0	5557.0	0.0	-12.0	DOWN
21	1134.0	0.0	4435.0	4345.0	0.0	-90.0	NEUTRAL
22	967.0	0.0	3468.0	3594.0	0.0	126.0	DOWN
23	1055.0	4000.0	6413.0	6333.0	0.0	-80.0	DOWN
24	1025.0	0.0	5388.0	5426.0	0.0	38.0	NEUTRAL
25	1121.0	0.0	4267.0	4352.0	0.0	85.0	UP
26	859.0	0.0	3408.0	3422.0	0.0	14.0	UP
27	970.0	4000.0	6438.0	6451.0	0.0	13.0	UP
28	863.0	0.0	5575.0	5651.0	0.0	76.0	NEUTRAL
29	850.0	0.0	4725.0	4586.0	0.0	-139.0	DOWN
30	1127.0	0.0	3598.0	3558.0	0.0	-40.0	UP

ARCO Petroleum Products Company
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Los Angeles, California 90051
Telephone 213 486 1733

F. N. Fletcher
Manager
Legislative Issues

#125

October 19, 1984

State of California
State Water Resources Control Board
901 'P' Street
P.O. Box 100
Sacramento, CA 95801

Attention: Mr. Harold Singer
Division of Technical Services

Gentlemen:

Atlantic Richfield Company appreciates the opportunity to comment on the **ADOPTION OF PROPOSED REGULATIONS GOVERNING UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES, TO BE CODIFIED IN SUBCHAPTER 16 OF CHAPTER 3, TITLE 23, CALIFORNIA ADMINISTRATIVE CODE (23 CAC SECTION 2610-2704)** in this written form and to present oral testimony at the public hearing on this subject.

Atlantic Richfield Company representatives have actively participated in the development of comments on the Draft Regulations covering Underground Tank Storage of Hazardous Substances which will be submitted by both the Western Oil and Gas Association (WOGA) and the Chemical Industry Council of California (CICC). We want to enter into the record that Atlantic Richfield Company is in agreement with those comments and supports the positions taken and the arguments presented in the written submissions of these two trade associations.

We have some general concerns related to the specific provisions in the draft regulations which appear to be in excess of the language and apparent intent of the statute and its amendments to date. We also believe the draft regulations are mute on certain specifics contained in the language and apparent intent of the statute as amended. The language of the statute is consistently expressed in the present and future tenses, never the past tense, while there are many requirements in the draft regulations which deal with history. This should be corrected and made consistent throughout the regulations. Certain alternative monitoring methods are provided for in Section 25284.1, as amended by AB-3781, and in particular a provision specifically for monitoring tanks containing motor vehicle fuels is spelled out.

The draft regulations ignore this specific alternative which is applicable to, by far, the largest number of underground tanks in use in the state. We believe that this is a very serious deficiency in the draft regulations which must be corrected for the benefit of owners of motor vehicle fuel tanks and the many local agencies who will be enforcing the law. The differing financial impacts of allowing the use of this alternative are potentially huge. This is particularly true for small, independent owner/operators of service stations who will not be able to stay in business under the financial requirements of the present draft regulation provisions. Their demise could potentially leave vast rural areas without reasonable access to motor fuel supply.

Definitions used in the final regulations must be consistent with the amendments to AB-1362 passed by the 1984 legislature and signed into law. In particular, the refined definition of an underground tank contained in AB-3565 must be included.

The list of hazardous materials to be specified may contain materials which are gaseous at normal temperatures and pressures. We request that such gaseous materials be specifically excluded from final regulations by any means necessary for such exclusion. That gases need not be regulated under a program such as this was recognized by the Congress of the United States in passing H.R. 2867 which includes a Federal underground tank program.

The following are some of our more specific detailed concerns:

DRAFT REGS	AB 1362 STATUTE*	COMMENTS
2620	25281(d)	Although the language of the regulation defines "hazardous substance" as "the following liquid and solid substances ..." [emphasis added], the regulation is ambiguous as to substances which are liquid in the tank, but gaseous if released from the tank. A clarification is needed for substances that are not liquid at standard temperature and pressure.
2620	25281	The definition of "motor vehicle fuel" should be consistent with the intent of the statute to control the storage of fuels, not the end use of the fuel which now appears limited to highway vehicles only.

*as amended by AB-3781 (1984) and AB-3565 (1984).

DRAFT REGS	AB 1362 STATUTE	COMMENTS
2620	25281	The definition and use of the word "pipe" should exclude lines that do not normally contain liquids, such as vapor recovery and vent lines.
2632(e) and 2645-2646	25291(b) and 25292(b)	The statute does not call for expensive "continuous" monitoring as specified in the draft regulations. With secondary containment, such monitoring should be based on the half life of the secondary container. In general, continuous monitoring is an unproven technology with very little field experience/exposure. Visual or mechanical monitoring is better suited, more cost effective and practical.
2633	25291(a)(7)	Double wall tanks more than satisfy the provisions specified for new motor vehicle fuel tanks but the tank testing requirements should not apply.
2634(d)(1) and 2643(f)	---	A 24 hour loss or gain of 50 gallons at a high volume service station is not uncommon. Suggest the daily trigger for investigative action be set at 100 gallons or 5% of daily throughput whichever is higher. Weekly accumulative losses are a better trigger mechanism on the same basis. Also, daily review should be specific to days of operation. This use of "daily" is also found in other parts of the draft regulations where it may not apply.
2635 (f)&(g)	25291(c)	Overfill protection <u>may</u> be required by the local agency. The draft regulation should reflect more clearly that this is an option.
2635(g)(1)	---	During delivery, the facility operator <u>or</u> the delivery vehicle operator should be in control of the filling operation. We prefer the delivery vehicle operator as he is always on site during delivery and is in control of and a professional in operation of the delivery process.

DRAFT REGS	AB 1362 STATUTE	COMMENTS
2635(g)(2)	---	Available capacity of the tank to be filled should be 103% of compartment to be delivered. 110% is much too large.
2640(f)	25292	Add a new section to be consistent with (b)(3) the motor vehicle fuel alternative as provided in the statute, as amended.
2642-2646	25292(b)	Adjust all alternative methods to make them optional as to be determined by the local agencies.
2642(d)	---	Fiberglass tanks should not require annual testing until 25 years from installation.
2644 and 2647	---	Exploratory boring and assurance monitoring are not provided for in the statute. Soils testing is only required to establish a baseline for future monitoring.
2645(f)(1)	---	A single demonstration of a vadose monitoring system should be available where similar substances are stored at multiple locations in similar backfill materials.
2646 (c)&(d)	---	Where groundwater is near the surface, vadose monitoring should not be required with groundwater monitoring. Both referenced sections should be deleted.
2646 (c)(1)	---	Maximum radial distance between monitoring wells should be 40 feet for hydrocarbons because of the wide lateral spreading consistent with hydrocarbon leaks.
2646 (e)(3)	---	Two inch monitor well casings are sufficient versus 4 inch.
2646-2647 2648	---	Reference that WOGA comments will deal with the more technical problems concerning well construction and monitoring requirements.

DRAFT REGS	AB 1362 STATUTE	COMMENTS
2647	---	For more effective monitoring, monitoring of groundwater should be restricted to depths of 50 feet or less.
2651 & 2652	---	Requirements for cleanup costs and hazardous waste information should be deleted from reporting. It is duplicative and unnecessary.
2672(d)	25298	If the tank has been properly cleaned or removed, there should be no need for "ongoing" leak detection monitoring for a permanent closure.

As has been discussed with individual Water Resources Control Board members, Atlantic Richfield Company sincerely believes in the protection of our groundwater resources. We and our families all drink that water and use it in many other ways every day. Many of the requirements of AB-1362, as amended, have already been met in our established, ongoing tank testing and upgrading programs. Since 1981, we have tested every tank we own in service station use. About a third have been tested twice in that period. We have developed a computer model which rates every tank we own as to its potential to leak in the future and established a priority list for tank replacement. We plan to essentially effect total tank replacement in ten (10) years or less. Double containment tanks are being installed, regardless of tank age, wherever drinking water sources are in close proximity to our steel tanks, wherever we market. We have been and will continue to apply present, state of the art, technology and look at any new, developing technology in a cost effective, planned program of the application of sufficient capital resources to prevention of future leaks from our underground tanks wherever we market motor fuels.

When we object to the draft regulations on this matter, we do so because of our perception of unnecessary and excessively costly or punitive requirements being proposed in over-reaction to a recently popularized recognition of a problem responsible marketers have effectively dealt with for over 75 years.

Sincerely,

F. N. Fletcher

F. N. Fletcher

FNF:cab

AtlanticRichfieldCompany 515 South Flower Street
Mailing Address: Box 2679 - T.A.
Los Angeles, California 90051
Telephone 213 486 3511

11/26 Orig. Bd.
CC: MAC
WGP
Singer
Anton
#125D

November 26, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
901 P Street
Sacramento, CA 95814

Dear Mr. Singer:

The following letter has been delivered to each Member of the Board:

Atlantic Richfield Company appreciates this opportunity to comment on the revised draft of proposed regulations covering the underground tank storage of hazardous substances, the Subchapter 16 regulations, under date of November 9, 1984. We commend the efforts of the staff, under extreme time pressure, in drafting these revisions to more closely reflect the necessary protective measures required and the concerns expressed by industry representatives in prior hearings.

The time pressure is also a factor in preparing our comments. Only a very few working days have been available since we received this revised draft. We suggest that any final action on approving final regulations be set over to some date later than November 27, 1984 to provide more time for careful analysis and final comment.

The Western Oil and Gas Association has provided written comments on the revised draft regulations to your staff. We at Atlantic Richfield Company fully endorse the WOGA comments and fully support the positions and suggestions for change they contain. In addition, we want to emphasize the following points and/or suggestions for general changes:

1. The implementation date of July 1, 1984 cannot be logically complied with by all affected entities. Some legislative relief should be sought by the Board from this time requirement.

2. Any exemptions the Board may provide for "Interim Alternate Monitoring" should be available to all, not limited to any special categories of tank owners.

(Continued)

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3. Every effort should be made by the Board to allow maximum flexibility to local agencies in setting local standards, in establishing monitoring parameters and methods applicable to local requirements and conditions. Local agencies should not be over-controlled, unnecessarily, in any way by the Board and its requirements.

Sincerely yours,

F. Noel Fletcher /dcb

F. Noel Fletcher

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Los Angeles, California 90051
Telephone 213 486 3511

11/26 CC'S #125-D
Bd
MAC
WGP
Singer
Anton

November 26, 1984

Mr. Kenneth Willis
State Water Resources Control Board
901 P Street
Sacramento, CA 95814

Dear Mr. Willis:

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2. Any exemptions the Board may provide for "Interim Alternate Monitoring" should be available to all, not limited to any special categories of tank owners.

3. Every effort should be made by the Board to allow maximum flexibility to local agencies in setting local standards, in establishing monitoring parameters and methods applicable to local requirements and conditions. Local agencies should not be over-controlled, unnecessarily, in any way by the Board and its requirements.

Sincerely yours,

F. Noel Fletcher/dcb

F. Noel Fletcher

JAN 11 1985 - OY WCP Anton CC Bd

125-E

John Richards

HS

ARCO Petroleum Products Company
515 South Flower Street
Mailing Address: Box 2679 - T.A.
Los Angeles, California 90051
Telephone 213 486 3554

R. Walter Simmons
Senior Representative
Environmental/Health Regulatory Affairs

January 4, 1985

The Honorable Carole A. Onorato, Chairwoman
California State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Dear Ms. Onorato:

I would like to thank you for the opportunity to meet with you and the Water Board staff on December 18, 1984 to discuss the important issue of underground tank testing. This letter summarizes the discussions at that meeting, and our thoughts on the question of certification for underground tank testing methods.

ARCO Petroleum Products Company has been actively involved in underground tank testing for many years. The ARCO Underground Tank Leak Detector was developed at our research laboratories to meet our own need for a simple, reliable method for detecting underground tank leaks down to 0.05 gallons per hour. This technology meets these objectives, as well as the tank testing requirements outlined in the draft Subchapter 16 underground tank regulations.

The technology uses an ultrasensitive photo optic device to measure the position of a float inserted into the tank for the test. All external variables are compensated for during the period of the test. These include temperature stratification, tank end deflection, evapoaration, and pressure changes. The float is positioned so that temperature induced changes in tank volume will be exactly offset by changes in buoyancy of the liquid in the tank. Leak detection, including a check for line leaks, occurs under conditions similar to normal service station operation.

Tests conducted at our research laboratories show excellent agreement between simulated and measured leaks as low as 0.03 gallons per hour. The U.S. EPA has evaluated tank testing technology currently on the market, and the ARCO Technology is under consideration as one of three test methods to be used for a nationwide underground tank survey.

Received DTS
JAN 15 1985

The ARCO Underground Tank Leak Detector has been in commercial operation for over three years. To date, over 7000 tanks have been tested, including all ARCO-owned underground tanks in operation at our service stations. We are making this technology available to the public through licenses to trained, responsible parties. Currently, ten firms have been granted a license, including three firms operating in California.

The ARCO Underground Tank Leak Detector has been approved by regulatory agencies in New York, Colorado, Connecticut, Wyoming, and Ohio. Approvals or certifications in several other states are expected shortly. The County of Los Angeles has approved the ARCO technology, but we understand that there is no mechanism for statewide approval.

Tank testing will apparently play a key role in California's regulatory program for underground tanks. Several of the existing tank monitoring alternatives would require annual tank testing. There are many testing methods on the market which cannot accurately perform the NFPA precision test. ARCO urges the Water Resources Board to review the methods proposed for tank testing in California. A certification program should be set up so that users of tank testing services can be assured that their method meets the requirements of the draft Subchapter 16 underground tank regulations. Such a certification program would have the following elements:

(1) An engineering review of the proposed testing method to ensure that all external variables are accounted for by the test.

(2) A review of data submitted by the developer of the test which compares induced leak rates to measured leak rates down to 0.05 gallons per hour.

(3) An actual field demonstration.

The data developed by EPA in their nationwide testing program could be used as the basis for a California certification program.

If you would like further information on the ARCO tank testing program, or if we may assist you in any way, please contact me.

Sincerely,

Walter Simmons

R. Walter Simmons

RWS:cf
cc: Harold Singer
California State Water Resources Control Board

R. W. Simmons
ARCO Petroleum Products Company

515 South Flower Street
Los Angeles, California 90071

PRESORTED FIRST CLASS

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U.S. POSTAGE 17

The Honorable Carole A. Onorato, Chairwoman
California State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

APPC-8104
(6-84)

#126

Presented by George Soares → K. B. Smith

October 23, 1984

TO: THE STATE WATER RESOURCES CONTROL BOARD

FROM: CALIFORNIA COTTON GINNERS ASSOCIATION

SUBJECT: PROPOSED UNDERGROUND STORAGE TANK REGULATION

Members of the Board:

The California Cotton Ginners Association (Association) consists of over 220 cotton gins that gin 98% of the total volume of cotton produced in the state.

It has come to the Association's attention that underground storage tanks containing gasoline and diesel fuel used in equipment involved in cotton ginning are not exempt from the Board's proposed regulations, even though the Board intends to exempt such tanks in other segments of the agricultural industry. The Association believes this is an incorrect interpretation of the enabling legislation, AB 1362 (Sher), and welcomes this opportunity to explain why.

I. APPLICABILITY AND CONSISTENCY

The Board has interpreted §25280 of the Health and Safety Code to exempt tanks located on a farm and used to propel vehicles used for

agricultural purposes, and tanks within one mile of a farm and used by licensed pest control operators. The proposed regulations have fallen short of their mark, however, in that they do not take into consideration all aspects of production agriculture, including cotton ginning. By way of illustration, cotton gins use underground storage tanks in rural area just like farmers do to "propel farm vehicles". In fact, some gins are owned by farmers although the gin may not be located on the farmer's property. It therefore seems both logical and essential, if the law is to maintain any degree of consistency, that all underground storage tanks involved in agricultural production be exempt from the proposed regulations.

Support for this position is contained in a letter from Assemblyman Norm Waters, Chairman of the Assembly Committee on Agriculture, which accompanies this statement. The letter states in part that agriculture, including cotton ginning, be deleted from your proposed regulations. He bases his opinion on the fact that "when AB 1362 was presented by Assemblyman Sher on the Assembly Floor, I raised the question as to whether or not his bill would adversely impact agriculture." He responded by stating he was "accepting an amendment exempting agriculture," which in his words, "would assure that my bill would not adversely impact the agricultural industry." Assemblyman Waters goes on to say in his letter that based on this assurance he voted for the bill. If, however, he had known the bill would be interpreted to include only some segments of agriculture, he would have voted against it. He concluded his letter by saying, "I request that agriculture, including cotton ginning, be deleted from

your proposed regulations, or, in the alternative, that clarifying legislation be introduced and adopted prior to the implementation of any such regulations."

The Association agrees with Assemblyman Waters' request which is supported by the following facts. The categorization of cotton ginning as an agricultural endeavor is not new nor without precedence. It has been well established by various federal agencies (e.g. federal OSHA, federal labor standards, federal health and safety standards, federal power rating, federal transportation standards) that cotton ginning is a part of the harvesting process (cotton is unsaleable until it is ginned...lint separated from the seed) and therefore an agricultural rather than an industrial pursuit. In addition, 14 cotton producing states (e.g. New Mexico, Arizona, Texas, etc.) consider all aspects of the production and ginning of cotton an agricultural endeavor. California also has acknowledged that cotton ginning is an agricultural activity. For example, the Cal-OSHA Standards Board held that cotton ginning is agricultural in nature, not industrial, and therefore exempt from the Hearing Conservation Act.

Perhaps a closer look at the author's intention when he introduced this legislation would be helpful to the Board. From his own statement it is clear that he was seeking to regulate underground storage tanks in populated areas (e.g. the Silicon Valley) to prevent contamination of underground water. By accepting an agricultural exemption it seems obvious that he did not see a need to extend

regulations to rural areas where the density of underground storage tanks and the threat to underground water is far less.

The regulations proposed by the Board give rise to another issue as well, that being equal protection under the law. How can one segment of agriculture be treated in a different fashion than any other? Consider the following. Under the Board's proposal, underground storage tanks on a cotton farm are exempt from the regulations while underground storage tanks owned by a cooperative cotton gin located on property owned by the cooperative may not be exempt. To make matters more confusing, the cooperative gin may be located across the street from farm property containing exempt underground storage tanks.

Yet another example is a situation where a farmer owns a cotton gin located on his farm and underground storage tanks containing gasoline and diesel are used to supply vehicles used in the ginning operation. As I understand the proposed regulations, these tanks would be exempt, but such would not be the case for gins owned by companies which do not farm and, therefore, cannot show that the ginning facility and underground storage tanks are located on "their farm".

The California Constitution contains a number of provisions calling for uniformity in legislation and goes even farther than the 14th Amendment of the United States Constitution in invalidating legislation where the basis for classification is wholly unreasonable. Unequal treatment of people engaged in the same or

substantially similar types of business or activity is obviously suspect and the court will carefully examine the circumstances to determine whether any substantial difference exists between the classified businesses (Witkin, 5 Sum.Cal.Law pg. 3646).

Cases involving a denial of equal protection because of an arbitrary classification between similar types of business activity are too numerous to mention at this time. However, by way of example, I cite Gawzner v. Minier (1975) 47 Cal. App. 3d 780, 120 Cal. App. Rptr. 344. In this case, the Legislature enacted a law making it illegal for motels to post outside signs listing rates for accommodations unless all the various rates were listed. However, hotels were specifically exempted as outside the classification subject to the law. The court struck down the statute when it found that hotels and motels relied to a large degree upon the motoring public for business and, therefore, it was discriminatory to restrict the outdoor rate advertising of one in an attempt to protect the motoring public and not to restrict the other's advertising of the same nature. To discriminate between the two types of businesses was to deny motels the equal protection of the law.

I believe there is a very close parallel between the facts of this case and the earlier scenario I have described to you regarding cotton farmers and cotton gins. The motel/hotel case ruled the statute invalid because of an arbitrary distinction, and I believe that the statute on which you base these proposed regulations will also be held invalid in court should it ever come to that. But

litigation should not be necessary, especially if the Board will heed the request of Assemblyman Norm Waters and this Association, and either exempt agriculture or, in the alternative, request that the Legislature clarify the law prior to adoption of regulations.

II. COMPLIANCE COSTS

In addition to the equal protection problems with the statute, the Board must consider the Porter-Cologne balance test which requires government to weigh compliance costs in relation to public health benefits before adopting regulations. In this regard, and using the Board's own cost figures under alternative number 3 of the Fiscal Impact statement, the cost to regulate the 100 underground gas and diesel tanks used at cotton gins is staggering.

Consider the first year alone. The initial cost for groundwater monitoring alternatives has been calculated by the Board's staff to be $14,700 per tank or a total of $1.47 million annually. Thereafter there would be an annual cost estimated to be $3,500 per tank. In addition, the cost for permits and the surcharge per gin will at least total $160 per year. On top of all this, tank closures could cost $1,300 per tank. Further, the Board's willingness to consider variances may cause even more costs than the original proposed regulations. For example, the Board could charge up-front $26,000 per categorical exemption and $7,750 per site-specific variance. This price tag must be weighed against the risk to public health.

In light of the cost; the author's intent to solve a problem in a populated area (e.g. Silicon Valley); and the fact that cotton gin tanks are used exclusively in rural areas, the Board should conclude that the cost of compliance outweighs the proven risk to the public health and revise the proposed regulations accordingly.

In conclusion, the Association feels that more questions have been raised by these proposed regulations than there are reasonable, defensible answers. The Association therefore opposes their adoption.

encl. #126

MEMBERS
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Rusty Areias
Vice Chairman
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Assembly
California Legislature

Assembly Committee on Agriculture

CHAIRMAN
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ASSEMBLYMAN, SEVENTH DISTRICT

STAFF
Phil Dowd
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Consultant
Betty J. Johnson
Secretary

State Capitol
Sacramento, California 95814
(916) 445-1918

October 22, 1984

Ted Finster
Water Resources Control Board
901 P Street
Sacramento, CA 95813

Dear Mr. Finster:

The purpose of this letter is to state my understanding of the legislative intent of AB 1362 (Sher). For the following reasons, I believe AB 1362 does not apply to California's agricultural industry, including the production of food and fiber and all related activities.

When AB 1362 was presented by Assemblyman Sher on the Assembly Floor, I raised the question as to whether or not his bill would adversely impact agriculture. He responded by stating he was accepting an amendment exempting agriculture, which in his words, "would assure that my bill would not adversely impact the agricultural industry." Based on this assurance, I voted for the bill.

Had I known that AB 1362 would be interpreted to include only some segments of agriculture, I would have voted against the bill. This being the case, I request that agriculture, including cotton ginning, be deleted from your proposed regulations, or, in the alternative, that clarifying legislation be introduced and adopted prior to the implementation of any such regulations.

Your favorable consideration of this request will be greatly appreciated. Please contact me if I can provide you with any additional information.

Sincerely,

Norm Waters

NORM WATERS
NW:plj

126-B.

LAW OFFICES
KAHN, SOARES & CONWAY

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A PROFESSIONAL CORPORATION
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REPLY TO: ~~Sacramento~~

November 27, 1984

MEMORANDUM

TO: STATE WATER RESOURCES CONTROL BOARD

FROM: GEORGE H. SOARES, LEGAL COUNSEL,
CALIFORNIA COTTON GINNERS ASSOCIATION

RE: PROPOSED UNDERGROUND STORAGE TANK REGULATIONS

Assembly Bill 1362 relating to the above-referenced matter was approved by the Governor September 23, 1983 and took effect January 1, 1984. Since the effective date of the legislation, and perhaps even before that date, staff for the State Water Resources Control Board has been involved in drafting proposed regulations for adoption by the Board on or before January 1, 1985.

The enormity of your task is self evident. This is clearly a highly technical issue of great interest to the business community and the public in general. The difficulties you face, however, shrink to insignificance when compared to the difficulty industry has in understanding what your staff has prepared for you and us.

It has been over a year since AB 1362 was enacted and yet those of us affected by its various resulting regulations are given comparatively little time to respond. Now we are faced with a second draft

of proposed regulations which describes better than I can, the inadequacies of the first draft. Page after page of the original draft has been deleted or amended and now we are given even less time than was allowed for the first go around to respond. I received my copy on November 15, 1984 with the public hearing scheduled for November 27, 1984. Further, the statement of reasons and the Financial Impact Statement which accompanied the first draft were not, according to your staff, available to the public as of 2:00 pm on November 26, 1984.

The foregoing is not intended to question the integrity of the Board or staff but rather to suggest that we as potentially affected parties are entitled to better treatment than this. With regulations of this complexity, one should be entitled to more time for thorough and thoughtful evaluation rather than the hurry up, piecemeal approach that is the case here.

Once your proposed regulations are complete, including the Financial Impact Statement and the Statement of Reasons, and once we have been given ample opportunity to evaluate the "package" we will provide you with our opinion. But until that occurs, we, unfortunately, have more questions than we have answers and frankly find this approach to the regulatory process to violate the intent if not the actual letter of the Administrative Procedures Act.

The following are just a few of the important questions that we believe remain unanswered at this time.

1. There are probably thousands of people in the state who own an underground storage tank that will be subject to these proposed regulations. Based on information provided in your first draft, we have calculated that appropriate monitoring alternatives would cost an individual nearly $15,000 per tank and approximately $8,000 per tank for a site specific variance. In

the real world, such an expense for a small business operator is absolutely prohibitive and down-right ludicrous. If there must be regulations, then I believe the Board and its staff must find a better way in which to deal with the requirements of AB 1362. Unless the above figures have changed drastically in your second draft, you are in effect forcing small business people to violate the law. There is absolutely no way that they will be able to tolerate the foregoing expenses and we need to face up to that fact now.

2. Health and Safety Code §25280 exempts specified activities. However, our research shows that this statute may well deny equal protection under the law because of an arbitrary classification between similar types of business activity. We have yet to receive a response from the Board's staff regarding this claim made during your first hearing. Through this testimony, we once again invite your response so that issues like this can be dealt with in a meaningful way. In our opinion, it is not enough for you to respond by saying that the Legislature, not the Board, is the proper forum for this concern. We believe the Board has an overriding obligation to speak out when it believes that statutes, for whatever reason, contain ambiguous language which is difficult, if not impossible to administer.

3. We continue to hear that AB 1362 requires implementation of regulations on or before January 1, 1985. This should not be the controlling consideration in the development of these regulations. Again we believe that the Board should set a more reasonable timetable so that we can all become familiarized with the content of the proposal before us. By way of analogy, Governor Deukmejian was instructed by the people of California to implement Proposition 37 (Lottery) within 135 days of its passage. However, he has correctly and wisely stated, that he may not meet the deadline because his number one priority is to

adopt a lottery system that works. I encourage the Board to keep in mind the Governor's statesman like approach in dealing with the lottery as it deals with these proposed regulations.

4. Your August 23, 1984 Statement of Reasons references the impact of these proposed regulations on small business. In this regard staff states in part that, "we believe these costs are less than the liability a tank owner may incur to investigate and clean up contamination resulting from a leak and the possible law suits if health implications are associated with the leakage." Staff continues, "given the high percentage of tanks that, once investigated prove to be leaking, the staff of the State Board believes that the statewide implementation of these regulations will reduce costs to society." By way of this testimony we are requesting permission to view staff research that has led to the foregoing conclusions. Frankly, we question whether there is any basis in fact to support these statements which seem to be, at best, self serving.

5. It is our understanding that the Board has not, to date, responded to a letter from Assemblyman Norm Waters regarding whether these proposed regulations properly reflect the intent of AB 1362 which is not to adversely impact the agricultural industry. Further, the Association's testimony of October 23, 1984, brought into issue the Porter-Cologne Act which requires government to weigh compliance costs against public health benefits before adopting regulations. To ensure that this issue does not escape the attention of the Board and its staff, we request through this testimony that our testimony of October 23, 1984 be incorporated by reference.

In conclusion, I request on behalf of the Association that another properly noticed public hearing be held by the Board once it has developed and made available to the public, 1) answers to the issues

raised in this testimony as well as the testimony of other interested parties; and 2) an understandable and well reasoned Statement of Reasons, Financial Impact Statement and properly proposed regulations. Only then, can this Association respond to the various provisions of the proposal before us.

11/27 orig WGP 127-B
cc - BL

CALIFORNIA FOREST PROTECTIVE ASSOCIATION
Senator Hotel Office Building • 1121 L Street, Suite 307 • Sacramento, CA 95814
(916) 444-6592

November 26, 1984

Ms. Carole Onorato, Chairwoman
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

RE: Proposed Regulations for Underground Tank Storage of Hazardous Substances

Dear Ms. Onorato:

Please enter this letter into the record of the November 27 public hearing for the above-referenced regulations.

Although the November 9 draft of the proposed regulations contains numerous substantive changes over the previous draft, the proposal is still unacceptable to California Forest Protective Association and the forest products companies which we represent.

We continue to see no need for the excessive verbiage and explicit detail of the proposed regulations. It serves no purpose other than to confuse the reader. Redundancies occur repeatedly. We are reminded of a Dudley Moore comedy routine in which he portrays a concert pianist who keeps repeating the closing passage of a piece because he does not know the final chord.

It should not be necessary to repeat statutory provisions in the regulations. For example, although a number of previous provisions have been deleted, Section 2611 of the regulations is entirely duplicative of Sections 25281, 25284 and 25299.2 of the Health and Safety Code. There are numerous other similar examples. It seems as if the intent is merely to add bulk to the regulations.

We refer you to our letter of October 23, 1984, conveying our comments regarding the August 23 draft of the proposed regulations. With the exception of the revisions to the definitions section, the current draft addresses none of the concerns we raised in our letter. By reference, we reiterate our previous comments.

Received DTS
NOV 30 1984

Thank you for this opportunity to add our voice to that of the overwhelming opposition to these proposed regulations.

Sincerely,

Matt R. Anderson
Director, Environmental Affairs

cc: Assemblyman Byron Sher
Gordon Duffy, Secretary of Environmental Affairs

CALIFORNIA FOREST PROTECTIVE ASSOCIATION
Senator Hotel Office Building • 1121 L Street, Suite 307 • Sacramento, CA 95814

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Ms. Carole Onorato
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

#128

MILLER REDWOOD COMPANY

Manufacturers of Forest Products

P.O. BOX 247 / CRESCENT CITY, CALIFORNIA 95531 / PHONE 707 464-3144

October 22, 1984

State Water Resources Control Board
901 P Street
Sacramento, CA 95801

Comments on Adoption of Proposed Regulations Governing Underground Storage of Hazardous Substances, to be Codified in Subchapter 16 of Chapter 3, Title 23, California Administrative Code (23 CAC Section 2610-2704).

I. Miller and Rellim Redwood Companies have thoroughly reviewed the proposed regulations governing underground tank storage. Aside from the oppressively prescriptive tone of this set of "rules," we find the bulk of the draft's contents to border on the ridiculous.

Although the intent of these regulations is acknowledged, such overkill is hardly necessary. In fact, in light of current efforts to encourage voluntary cooperation between private enterprise and governmental regulatory agencies, this document is little short of destructive. We expect more professional and conciliatory treatment.

We find it amazing that the state believes we would voluntarily allow our underground facilities to leak their contents unchecked into the surrounding soil and aquifers, and yet that is the implication to be drawn from reading the proposed rules. Our families, neighbors and employees depend on clean water, and we are acutely aware of this responsibility. In addition, the tone of this draft flies in the face of economic reality. After all, the material stored in underground tanks is hardly without value. It behooves any responsible business manager to closely monitor his own inventory and consumption rates without a mandate from the government.

MR REDWOODS FOREVER

II. Recognizing the state's intent to more closely control underground storage, we offer the following:

The tanks employed by our companies, as well as the bulk of other firms in the forest/wood products industry, are used primarily to store motor vehicle fuels, i.e., gasoline and diesel. These tanks are rarely subjected to stresses which result in an absolute rupture; rather, slow corrosion over time is the only apparent factor of concern.

Therefore, the most sensible and feasible means of monitoring tank condition is regular static pressure-testing (which we already do). We see little objection to shortening the interval between such tests, and reporting the results. Adherence to specific tank repair/replacement guidelines and spill clean-up procedures also presents little problem; these have already been established.

Anything beyond these measures is an economic waste, and in our opinion, will do very little to prevent future contamination from existing underground tanks.

III. Failing acceptance by the state of these general recommendations, Miller and Rellim Redwood Companies request a specific exemption for ourselves (and other members of our industry) as members of the agricultural community. Our equipment is engaged in the parallel activity of crop production and transportation; and motor vehicle fuel is the primary use for our underground tanks. I quote Section 22 of the California Food and Agriculture Code:

"Inasmuch as the planned production of trees is distinguishable from the production of other products of the soil only in relation to the time elapsing before maturity, the production of trees shall be considered a branch of the agricultural industry of the state for the purposes of any law which provides for the benefit or protection of the agricultural industry of the state."

Thank you for the opportunity to comment on these proposed regulations.

Respectfully submitted,

Sheal L. Anderson
Assistant General Manager
Miller & Rellim Redwood Companies

cc: Matt Anderson, CFPA
Assemblyman Byron Sher
Office of Administrative Law

MILLER PALL
EZ ERASE
COPY CONTROL

#129

COMMENTS OF THE CALIFORNIA GRAIN AND FEED ASSOCIATION RELATIVE TO THE PROPOSED REGULATIONS GOVERNING UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES

Presented by
Paul W. Stephany
Associate Director
October 23, 1984

The California Grain and Feed Association (CGFA) is an agricultural trade association representing over 500 companies that manufacture, handle, and merchandise grain and feed products throughout the state. Many of our members have underground storage tanks and are concerned as to the impact of the proposed regulations.

While CGFA appreciates the public concern relative to the underground storage of potentially hazardous materials, our organization contends that the regulatory controls promulgated by the State Board should reflect a reasonable assurance of groundwater protection that is economically feasible for the industry.

The regulations proposed by the State Board, in our opinion, extend beyond the intent of AB 1362 (Sher) and should be modified to reflect an appropriate degree of control with flexibility for alternative methods of monitoring.

Our principle concerns deal with the monitoring of existing storage facilities, the variance procedures, and the need to provide consideration for seasonal agricultural operations.

Article 4 of the proposed regulations specifies in great detail the procedures for monitoring existing storage tanks. CGFA recommends that the regulations be modified to allow alternative monitoring procedures that would provide sufficient protection against leakage. We contend that the procedures prescribed in Article

4 are duplicative and excessive. Additionally, the methods allowed for the monitoring of underground tanks are narrowly defined and disallow alternative procedures.

The regulations for existing tanks should take into account the many different types of operations and the need for more flexibility in the monitoring procedures. CGFA recommends that the proposed regulations be modified to provide for performance oriented standards that would allow for more diversified monitoring procedures.

In respect to Section 25284 of the Health and Safety Code, we contend that the proposed regulations are more narrowly defined than what is provided for in the law. Reasonable alternatives to the procedures specified in the regulations should be allowed.

Regarding the categorical and site-specific variance procedures in Article 8 of the proposed regulations, CGFA is adamantly opposed to the proposed application fees. The purpose of the variance procedure is to allow for alternatives to the regulations. The variance procedure is a valuable mechanism to correct oversights in the regulatory process and also to provide for logical alternatives to the specific regulations. The establishment of fees at $26,000 for categorical variances and $7,500 for site-specific variances would severely impair the ability of the industry to present alternative procedures. The cost of applying for a variance will essentially exclude any industry involvement in modifying or improving upon the regulations.

CGFA recommends that the State Board establish a program that would evaluate the

applicability and effectiveness of the underground storage tank regulations on an ongoing basis. The program should take into account individual considerations, local agency interpetation of the regulations and the practical application of the regulations. We believe that such a program should involve representatives from industry, local government, and the State Board.

The final area we wish to address in our comments is consideration for seasonal agricultural operations. In the proposed regulations, the exemption for agricultural motor vehicle fuel tanks does not include many facilities that are essential to the production of food and fiber. Clearly, the legislative intent of AB 1362 was to exempt motor vehicle fuel tanks used for farming. This exemption is very limited in the reguations and excludes many farming operations.

Specifically, cotton ginning operations are an essential part of the production of cotton. The underground fuel tanks are only utilized at the cotton gins during the harvest and should rightfully be included in the on farm exemption.

CGFA requests that the State Board carefully review the proposed regulations and give careful consideration to the recommendations presented in our comments. The concern for groundwater quality is shared by all of us. We appreciate the need for some degree of control over the use of underground storage tanks, but we firmly believe the regulations should be reasonable and allow for suitable alternatives.

CGFA strongly encourages the State Board to work closely with industry in developing, administrating and implementing regulations relative to underground storage of hazardous materials.

#127

CALIFORNIA FOREST PROTECTIVE ASSOCIATION
Senator Hotel Office Building • 1121 L Street, Suite 307 • Sacramento, CA 95814
(916) 444-6592

October 23, 1984

Ms. Carole Onorato, Chairwoman
State Water Resources Control Boad
P.O. Box 100
Sacramento, CA 95801

RE: Proposed Regulations for Underground Tank Storage of Hazardous Substances

Dear Ms. Onorato:

Please enter this letter in the record of the October 23 public hearing for the above-referenced proposed regulations.

California Forest Protective Association represents the major timber producers in the state, most of whom also operate forest products manufacturing facilities. Underground storage of hazardous substances by CFPA member companies consists primarily of motor fuel storage -- diesel oil and gasoline. In addition, some companies store other substances which are necessary to their manufacturing activities. Characteristically, storage tanks are located in relatively remote locations, with two to six tanks per site. The underground storage of hazardous substances by the forest products industry poses a relatively minor threat to the quality of the waters of the state.

We recognize that the State Water Resources Control Board is under a statutory deadline for promulgation of underground tank storage of hazardous substances. And that the deadline is rapidly approaching. Nonetheless, the scope, complexity and potential awesome burden of the proposed regulations prompts us to recommend that the State Board give this matter careful consideration and the deliberation which it deserves. If it is necessary to have something in place in order to satisfy the statutory deadline, we suggest adoption of a considerably abbreviated set of regulations which will address only the most pressing problems.

In their present form, the proposed regulations are unacceptable to us. The shear magnitude of the proposed monitoring requirements, alone, would impose a financial burden upon the forest products industry far outweighing any benefit, considering the limited potential for water quality problems arising from the underground storage facilities of our industry.

The very language of many of the provisions of the proposed regulations seems to be designed to confound the reader. For example, Section 2635(b)(9) states, "The secondary container shall at a minimum encompass the area within the system of vertical planes surrounding the exterior of the primary containment unit. If backfill is placed between the primary and secondary containment then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment over the vertical distance between the primary and secondary containment. The secondary containment shall extend beyond the vertical planes an additional distance defined above equal to the radius of lateral spread plus one foot." Surely there must be a better way of stating this, assuming that it is even necessary to include such a provision in the first place. This is merely one example of several provisions which we feel provide compelling reason for sending the regulations back to the drawing board. It should not be necessary to have a PhD in engineering in order to read a set of regulations which every "mom and pop" gasoline station in the state will have to live by.

Most of the ponderous verbiage in the proposed regulations could be eliminated by a basic realignment of the regulatory approach that is taken. The regulations unquestionably are highly prescriptive, right down to requiring locked caps on monitoring wells. The amount of "how to" detail in the proposed regulations, quite frankly, is an insult. The firms represented by CFPA are quite capable of understanding and employing good engineering practices. We strongly recommend that the proposed regulations be limited to establishing performance standards. Let us decide how to meet those standards. This is the regulatory approach which the State Board and the regional boards have traditionally taken under the Porter-Cologne Water Quality Act.

Sections 2611(a)(3) and (4) provide an exemption for certain underground storage tanks used in conjunction with farming operations. These subsections should be rewritten to clearly state the provision of Section 22 of the Food and Agricultural Code which states, "Inasmuch as the planned production of trees is distinguishable from th production of other products of the soil only in relation to the time elapsing before maturity, the production of trees shall be considered a branch of the agricultural industry of the state for the purposes of any law which provides for the benefit or protection of the agricultural industry of the state."

The proposed regulations should provide for recognition of those underground storage situations which do not warrant the same degree of regulation as may be justified in major problem areas. For example, reduced monitoring requirements could be provided in those instances where the local permitting authority has determined that there is a limited potential for harm to water quality. Consideration should also be given to some type of de minimus provision, perhaps one which is based on through-put, tank size or some other indicator of minimal potential impact.

The definition of "motor vehicle" found in Section 2620 casts the regulations in a use-oriented mode rather than a substance-oriented one. Why should diesel oil or gasoline used in off-highway vehicles be treated any differently than diesel oil or gasoline used in vehicles which travel "upon a highway?" The nature of the substance should determine the manner by which it is regulated, not the use to which it is put.

Hazardous substances, as defined by Section 2620, could include a number of substances which for the purposes of the proposed regulations need not be considered hazardous. A provision should be added for determining whether in fact a substance is hazardous or non-hazardous. Specific criteria should be provided for exempting those substances which are not adverse to water quality.

We find a number of other provisions in the proposed regulations which warrant specific comment; however, suggesting piecemeal improvements would do nothing to correct the basic structural flaws which we see. In our opinion, the State Board should refer the regulations back to staff, with strong direction to return with revised regulations which do not exceed minimum statutory requirements, which provide performance standards instead of prescribing the method of compliance, which recognize cost-effectiveness and which are written in language which is easily understandable by the persons who must abide by them. The present draft of proposed regulations falls far short in all categories.

We appreciate this opportunity to comment on the proposed regulations and stand ready to assist the State Board in developing reasonable regulations which realistically address the problem.

Sincerely,

Matt R. Anderson
Director, Environmental Affairs

cc: Assemblyman Byron Sher

H. M. HOWE

DBDudgeon(6711)/DGAday(6906):sb

bcc: w/attachment
RVBettinger
DABrand
PEDeYoung
VCFurtado
HMMcKinley
DAOglesby
KDOleson
BPSadler
Division Environmental Coordinators

w/o attachment
Division Managers
NHDaines
JYDeYoung
EBLangley, Jr.
EFKaprielian
JEKoehn
GAManeatis
JDShaffer

Attachment

#114

PACIFIC GAS AND ELECTRIC COMPANY

PG&E 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

H. M. HOWE
CHIEF SITING ENGINEER

October 22, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

Comments on Proposed Regulations on
Underground Tank Storage of Hazardous Substances

The Pacific Gas and Electric Company (PGandE) fully supports the State Water Resources Control Board's efforts to develop effective regulations to protect public health and the environment from hazardous materials stored in underground storage tanks. We also appreciate the opportunity to comment on the proposed regulations (Title 23, California Administrative Code, Chapter 3, Subchapter 16) for storage of hazardous substances. Our review of these proposed regulations reveals several areas that require further clarification or possible amendment. As requested by you at the September 18, 1984 workshop in Sacramento, PGandE submits the attached comments.

We hope these comments prove useful to you and your staff. Please contact Mr. J. F. McKenzie of my staff at (415) 972-6901 if you have any questions or wish to discuss our comments further.

Sincerely,

HMHowe JFMckenzie

Attachment

PACIFIC GAS AND ELECTRIC COMPANY'S COMMENTS ON
THE STATE WATER RESOURCES CONTROL BOARD'S (SWRCB)
AUGUST 23, 1984 DRAFT REGULATIONS FOR STORAGE OF
HAZARDOUS SUBSTANCES (UNDERGROUND TANK REGULATIONS)
TITLE 23, CALIFORNIA ADMINSTRATIVE CODE,
CHAPTER 3, SUBCHAPTER 16

General Comments

We feel the proposed regulations, as currently written, do not adequately provide for the utilization of future technology. Indications are that new, more cost-effective technology will soon be commercially available that will satisfy the objectives of the Sher Bill. We recommend the regulations include a waiver clause that provides for any such demonstrably viable technology to be implemented in lieu of any or all of the proposed monitoring standards, as appropriate.

Section 2620, Definitions

We recommend modifying the definition of "motor vehicle" by striking the words "upon a highway". Such distinction may be necessary in the Vehicle Code for licensing purposes, but is not appropriate here. This will eliminate any possible confusion as to whether construction equipment qualifies as a motor vehicle.

We also recommend modifying the definition of "motor vehicle fuel tank" to "a tank that contains a product which is used or is capable of being used to fuel motor vehicles".

Tanks which contain gasoline, diesel fuel oil, aviation fuel, etc., should be treated in the same manner whether the product is used to fuel cars, trucks, construction equipment, airplanes, generators, etc. because the environmental risks are identical in each case. The SWRCB has presented no rational basis for dividing such tanks into various classes, either from the standpoint of legislative intent or environmental protection.

Section 2631, Construction Standards for New Underground Storage Tanks

Subsection (e) requires that if the storage facility is open to rainfall, the secondary container must be able to accommodate the volume of a 24-hour one hundred-year storm. This requirement should not apply to facilities where double-walled tanks are used. Double-walled tanks preclude the runoff from entering the secondary containment, thus this requirement is impractical and economically prohibitive in such cases.

Section 2634, Monitoring Standards for New Motor Vehicle Fuel Tanks

Subsection (a)(2) requires an inventory reconciliation system to be established for all new motor vehicle fuel tanks constructed according to the standards of Section 2643. However, we seriously question the SWRCB's legal authority to implement this requirement. Section 25284 of the Health and Safety Code provides standards for construction and monitoring of new underground tanks. Nowhere in this section is a requirement for inventory control for new tanks either stated or implied. The SWRCB is authorized to require inventory control only for existing (i.e., installed before January 1, 1984) motor vehicle fuel tanks, under the authority of Section 25284.1(b)(3) of the Health and Safety Code.

Even if inventory control were required for new motor vehicle fuel tanks, those tanks whose secondary containment meets the volumetric requirements of Section 2631 should be exempt. These tanks provide such a degree of protection that inventory control is unnecessary. Indeed, the SWRCB should exempt such tanks from burdensome inventory control requirements as an incentive for their use.

Finally, the inventory control action levels specified in Section 2634(d) are unduly restrictive and will result in a large number of false alarms. The value of inventory control is in detecting small leaks over a period of time. Therefore, action should be required only when daily readings show a consistent trend over a minimum period of one week.

Section 2635, General Construction Standards

Subsection (b)(3) requires hydrostatic or pressure testing of all tanks following installation. However, underground storage tanks constructed and monitored according to the standards of Sections 2631 and 2632 should be exempt from such testing. Such tanks will have continuous monitoring systems to detect any leak of primary or secondary containment at an early stage; hence, such testing is redundant and unnecessary. Further, not requiring such testing for tanks constructed according to the new standards may act as an economic incentive to replace an existing single-walled tank with a new double-walled tank.

Subsection (b)(9) provides that ". . .if backfill is placed between the primary and secondary containment then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment."

Such an analysis should not be required for tanks whose secondary containment meets the volumetric standards of

Section 2631. When such an analysis is required, uniform assumptions should be stated by regulation regarding the size and location of the point leak in the tank.

Section 2642, Underground Storage Tank Testing

The requirement that the tank testing device be able to detect a leak of 0.05 gallons per hour presupposes that such devices actually exist. To date, no independent laboratory has, to our knowledge, verified that testing equipment is currently available that can detect leaks of 0.05 gallons per hour. We recommend that the regulations require testing to a level of detection that has been proven viable by an independent laboratory, such as Underwriters Laboratory.

Section 2643, Inventory Control

This section requires that ". . . all owners of existing underground storage tanks subject to this subchapter shall . . . implement an inventory control program as described in subsections (c) through (f) of this section." Exemptions are provided by subsection (b) for those substances ". . . not susceptible to accepted technologically available metering".

We recommend that the exemption be broadened to include all tanks whose contents are not normally metered, such as waste oil tanks. The requirement for inventory control appears to be based on Section 25284.1 of the Health and Safety Code. However, this section of the Code requires inventory control only for existing motor vehicle fuel tanks.

Section 2644, Soil Testing and Exploratory Borings

This section requires that, if possible, one slant boring be drilled as close as possible to the tank, to a depth of 50 feet beneath the tank invert. Soil samples are to be obtained to the target depth or to the groundwater level in borings encountering groundwater, whichever occurs first.

If the groundwater level is known to be shallow, it does not appear beneficial to drill a slant boring only to discover groundwater after a few feet. We recommend that slant boring be required only for areas where it can be proven or assumed that the groundwater level is a minimum of 50 feet beneath the tank invert. This would permit vertical wells to be installed as a first step in such areas. If groundwater is subsequently discovered to be greater than 50 feet beneath the tank invert, then slant boring and sampling should be required.

This section also requires that all borings be logged by a registered civil engineer, registered geologist or certified engineering geologist. This requirement is not practical. We have reason to believe that there are not currently

enough such qualified individuals in the State to accomplish the work in a timely manner, (i.e., by the compliance dates). This requirement will also significantly increase the costs to industry as a result of higher compensation for the professionals, without necessarily ensuring better results. We recommend that qualified staff engineers and geologists, as designated by one of the aforementioned professionals, be permitted to perform the work.

Section 2646, Groundwater Leak Detection Monitoring

This section requires groundwater wells be monitored for leaks from existing underground storage tanks. It is not specified what is meant by "monitored". In the case of volatile hydrocarbons such as gasoline, we are confident that a visual/olfactory check of a transparent bailer sample would be adequate to determine if any product is present in the groundwater. Laboratory analysis of groundwater samples should be required only if other indications of a leak are present, such as positive vapor monitoring results or if a tank testing device indicates a leak.

Section 2647, Verification Groundwater Monitoring

The requirements to employ dry drilling techniques for exploratory borings and, where groundwater is encountered within a depth of 200 feet, to use a minimum 4-inch ID casings, necessitate the use of 12-inch OD hollow-stem augers. These augers permit well casing installation through the auger stem and allow sampling below the water table. However, few contractors utilize 12-inch OD hollow stem augers; their limited number may make meeting the compliance dates an impossibility. Further, such drill rigs are very expensive to operate. We recommend allowing 8-inch hollow stem augers (2-inch well casings) as a substitute method of construction when it can be demonstrated that the well can be developed and evacuated properly using an in-well intake and a surface suction pump.

Section 2670, Applicability

Subsection (e) refers to "... cessation of waste storage..." The use of the term "waste" appears to be in error; it should be replaced with "hazardous material" for consistency with the remainder of this section.

Section 2712, Permit Conditions

Subsection (a) requires a permittee to notify the local agency at least 30 days prior to repair or replacement of any part of an underground storage tank. The requirement for prior notification should be waived in the case of emergency repairs.

We recommend adding to the end of Subsection (b) an item (7) to read: "(7) Any written reports submitted to local agencies for unauthorized release occurances"; this would help ensure that the record of the tanks' recent history is complete.

#130

WOOLSEY OIL, INC.

Chevron Jobber

P.O. BOX 686, I-5 AND FRENCH CAMP RD., FRENCH CAMP, CA 95231

October 22, 1984

State Water Resources Control Board
P.O. Box 100
Sacramento, Calif. 95801

Attn: Mr. Harold Singer

Dear Sir:

This letter is in regard to "the adoption of proposed regulations governing underground storage of hazardous substances."

While we, operating a small business in the state, want to do what is necessary to have a satisfactory enviroment, it would appear that the guidelines as outlined target a specific group that has little potential of creating the kind of problem the law is intended to eliminate. Our business is to deliver products picked up from refineries to the small end user. We cater to such businesses as bakeries, dairies, food distributors, ambulance services, police and fire stations, school districts, utility companies, hospitals, taxi services, canneries, construction, etc. These customers do not look to the local service station for supply, because to do so the financial impact to their business is too extreme; it becomes much harder to control the time spent fueling and the vehicle being fueled at a retail outlet. During times of shortage, and there have been two extended periods during the last ten years, being forced to fuel with the general public would have put most small businesses into chapter 11. If all of these small independent businesses were forced to fuel their fleets, the impact to them could put them out of business; but also it could create a much greater problem for the public in general!

The potential and probability of contamination are highest where there is the least economic impact to the on sight manager with the loss of fuel, there is little effect on him if fuel is lost. This describes retail operations, or large facilities that are not owner-operated. If fuel is lost, there is little motivation to be concerned. **This group should be targeted, as your bill has done effectively.**

Chevron

WOOLSEY OIL, INC.

Chevron Jobber

P.O. BOX 686, I-5 AND FRENCH CAMP RD., FRENCH CAMP, CA 95231

Conversely, these regulations as now written also target the small owner-operator. By definition, these folks watch their inventories closely, since fuel costs well over a dollar a gallon, and a gallon lost is a dollar out of their pocket. An inventory monitoring system is in place simply because economics demand it! A loss is fully investigated, because it represents dollars out of their take-home pay!

May I suggest that the guidelines would serve the people best, and as effectively, by ammending the proposed guidelines to read:

"Existing underground storage tank monitoring as applies to the motor vehicle fuel tanks of 4,000 or less capacity used by activities other than petroleum resellers open to the motoring public, be held responsible for accurate inventory control, manditory reporting of shortages or overages that exceed 10 gallons per week, or a 24 hour inactive or idle period for each tank, showing no change in the level of the tank for that 24 hour period. Such a monitoring test must be done weekly."

This change would protect the enviroment, still forcing the high risk retailer or the disinterested operator to comply and guarantee the standard. This change, if ammended, would protect our enviroment and still allow the small businessman to continue the fleet operation, therby impacting neither the enviroment nor the public at service stations.

Sincerely,

Bruce Woolsey

Bruce Woolsey
President

STOCKTON 948-9412 • TOLL FREE (800) 692-3782

Original Comments 131-140

Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations 1985

#131

L & M PETROLEUM DISTRIBUTORS
PHONE 209-466-8035
P.O. BOX 1371
STOCKTON, CALIFORNIA 95201

October 22, 1984

State Water Resources Control Board
P.O. Box 100
Sacramento, Calif. 95801

Attn: Mr. Harold Singer

Dear Sir:

This letter is regarding "the adoption of proposed regulations governing underground storage of hazardous substances."

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L & M PETROLEUM DISTRIBUTORS
PHONE 209-466-8035
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STOCKTON, CALIFORNIA 95201

small owner-operator. By definition, these folks watch their inventories closely, since fuel costs well over a dollar a gallon, and a gallon lost is a dollar out of their pocket. An inventory monitoring system is in place simply because economics demand it! A loss is fully investigated, because it represents dollars out of their take-home pay!

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Sincerely,

Durrel Woolsey
President

#132

PEST CONTROL OPERATORS of CALIFORNIA, Inc.

October 23, 1984

State Water Resources Board
State of California
1416 9th Street
Sacramento, California 95814

Dear Member of the Board,

I am writing to you today on behalf of the Pest Control Operators of California, Inc. regarding your proposed regulations concerning underground storage tanks.

The Pest Control Operators of California (P.C.O.C.) is a Statewide Association of Pest Control Operators. Some 700 plus companies are members representing 80% of the pest control work done in the State of California. The average size of a pest control company is five people. The people we represent are in many cases the Mom and Pop operations frequently referred to.

We were appraised of your public hearing only yesterday and after a cursory review of the draft regulations it becomes readily apparent that the financial impact will be catastrophic to our members.

We support your endeavors to prevent ground contamination of water, however, we feel this should be accomplished through regulations dealing with new tanks, installed after January 1, 1985 rather than existing tanks.

We are in the process of inventoring our membership now and would like the opportunity to file a written brief more specifically detailing our concerns and suggestions and therefore, request that your hearing date be held open until November 7th, 1984.

Your consideration of this request is greatly appreciated.

Sincerely,

Harvey L. Logan
Executive Director

HLL/bd

Executive Offices: 3031 Beacon Boulevard • West Sacramento, California 95691 • Phone (916) 372-4363

#133

FLORIN FIRE PROTECTION DISTRICT

• 8481 FLORIN ROAD • SACRAMENTO, CA 95828

• TELEPHONE (916) 383-7550

October 23, 1984

State Water Resources Control Board
Division of Technical Services
P.O. Box 100
Sacramento, CA 95801

Re: Proposed Regulations For
Underground Tank Storage Of Hazardous Substances

Our agency has conducted a review of your agency's proposed regulations as noted above and offer the following comments for your review and consideration.

Art. 1, 2611(a)-(3), Page 1.4:

Even though the Sher legislation set forth the requirement for the exemption, we disagree that underground fuel storage tanks that are located on farms should be excluded. It would appear that a considerable number of agricultural operations are still conducted next to residential and commercial areas and the hazards remain the same in terms of exposures. The same comment would apply to the fuel storage used by a licensed pest control operator as addressed in 2611(a)-(4).

Art. 2, 2620 (3), Page 2.1 & 2.2:

This paragraph should be amended to identify flammable liquids as Class I liquids to maintain the terminology of N.F.P.A. Standard 30. We also question the need to refer to a particular edition of the aforementioned standard as this was not consistantly done throughout the requlations.

Art. 3, 2631 (c), Page 3.2:

It appears that some concern is required in this section that would identify the need for product compatibility for a longer duration than is currently stipulated. There is a possibility that the secondary containment material will deteriorate after exposure to a release and will not be capable of containing another release should one occur.

Art. 3, 2633 (b), Page 3.6:

It would appear that a compatibility comment should be placed in this paragraph as various types of motor vehicle fuels may be developed in the near future. We have just recently become aware of the problems that develop between diesel fuel and galvanized piping.

Art. 3, 2634 (a-1), Page 3.8:

Although the proposed regulations set forth several forms of limits on the daily gauging operations, our agency's experience has been that this method of record keeping is totally unacceptable as there are too many problems in developing any type of accuracy. The actual tank sizes appear to vary, the human error in properly inserting the stick results in varied readings, changes in the time that the tank is measured brings forth errors due to temperature changes, etc...

Art. 3, 2634 (e-6), Page 3.12:

We suggest that no reference be made to editions when specifying N.F.P.A. Standard 329.

Art. 3, 2635 (b-4), Page 3.14:

Your attention is directed to the fact that steel tanks manufactured to U.L. 58 Standards may or may not be cathodically protected as a standard practice. In addition to those tanks that are manufactured with a sacrificial annode, other tank installations have a cathodic protection system engineered and constructed for a particular site.

Art. 3, 2635 (c-1), Page 3,16 & 3.17:

The tank distance criteria set forth in your proposed regulations is in direct conflict with most nationally recognized codes that address the storage of flammable and combustible liquids. We believe that your criteria is too restrictive and may present some serious design problems for emergency fuel storage installations in high rise building construction.

Art. 3, 2635 (h-2), Page 3.19:

Our agency suggests that this paragraph be expanded to read as follows: "Approved corrosion-resistant materials, non-metallic, reinforced plastic coatings, composites, or equivalent systems." This will allow for all of the nationally recognized tank construction methods to be included without the need for interpretation.

Art. 4, 2642 (c), Page 4.9:

While we acknowledge that the tests described in N.F.P.A. 329 is probably the best method presently known, we would point out that the proposed regulations will still permit a leak of 1.2 gallons per day or 438 gallons per year. It would appear that a Catch 22 situation will develop when the monitoring indicates that a leak exists and yet the tank tests out within the limits.

Art. 4, 2642(d), Page 4.10:

It appears that the categories developed for determining when a tank should be tested only addressed external corrosion as a factor. Some consideration should be given to internal corrosion when developing this type of criteria.

Art. 4, 2643(c), Page 4.13:

Our experience indicates that the wholesale meter on the delivery vehicle may cause additional errors in the inventory control as only too often, product that has already been metered but yet remains in the hose is discarded somewhere other than in the tank. It becomes an impossibility to determine where this loss occurred.

Art. 4, 2643(d-1), Page 4.13:

We would again like to point out that the daily guaging of the tanks is not reliable due to human error in the manner and method of sticking the tanks and that a 1/8 inch error in a 10,000 gallon tank can represent a considerable amount of product. It has been our experience that the actual volume of manufactured tanks varies considerately in comparison to the standardized sticks.

Art. 4, 2643(d-6), Page 4.14:

Just a note to point out that most underground fuel storage tanks are installed with one end of the tank lower than the other to avoid picking up any water in the dispensing system.

Art. 6, 2661 (c-1), Page 6.2:

As you might already have discovered, there is a considerable difference of opinion among the oil industry, tank lining purveyors and the fire service in terms of what is a repairable tank. Additional research is certainly warranted in terms of your proposed criteria when it is an accepted fact that splits near the end caps lead to subsequent failures after a tank has been repaired due to the flexing of the tank during fuel drops. Many of us in the fire service are not convinced that a complete bonding of the lining material can take place as there is no way to completly clean under the lap seams of the tank.

Art. 6, 2662(b), Page 6.4:

Our agency takes exception to the State of California referencing a recommended practice as an acceptable standard when the recommended practice in question is strictly a proprietary one that is controlled by the oil industry. We suggest that you give strong consideration in changing the reference to reflect the Underwriter's Laboratories Listed Standard For The Lining Of Underground Tanks.

Art. 6, 2663(a), Page 6.5:

Our agency questions the rational for requiring new tanks to undergo certain tests in order to qualify for a U.L. label and then not require a tank that has undergone mechanical damage to meet the same criteria. The apparent deletion of a vacuum test after a tank has been repaired with the lining process seems to go against established engineering practices. The vacuum test is recognized by U.L. and is currently being performed in the field by those tank lining firms that have confidence in their workmanship.

Again, we would suggest that you address the latest edition of N.F.P.A. Standard 30 in lieu of listing a single edition.

Art. 7, 2670(b), Page 7.1:

The proposed policy for temporary closure is extremely liberal and is in conflict with the majority of existing local ordinances that are in effect throughout California. Some language should be included that would leave the local ordinances dealing with this subject in tact with your proposal coming into play if no conflict exists.

Art. 7, 2671(b-3), Page 7.3:

Experience has indicated that tanks that have contained flammable or combustible hydrocarbons are almost impossible to completely clean and therefore, the disposal of any liquids that may have been placed in the tanks becomes extremely difficult. The waste water or other types of liquid are often disposed of by pumping into the storm drain system of spread on vacant properties. We believe that this item should be deleted.

Art. 7, 2672(a), Page 7.5:

Many local agencies have specific ordinances against the abandonment of tanks in place unless there is physically no way to remove same. We would suggest that the proposed regulations be amended to permit the local ordinance to prevail in this matter with your regulations taking effect when a local ordinance is not applicable.

I would be willing to discuss any or all of the aforementioned items in more detail at your convenience if your agency desires to do so. Thank you in advance for your consideration of our comments.

Sincerely,

Curt Grieve
Fire Marshal

#134

ASSOCIATED GENERAL CONTRACTORS OF CALIFORNIA

SKILL RESPONSIBILITY INTEGRITY

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3095 Beacon Boulevard
West Sacramento, California 95691
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8301 Edgewater Drive
Oakland, California 94621
(415) 568-8839

Southern California Labor Dept.
2551 Beverly Boulevard
Los Angeles, California 90057
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DISTRICT OFFICES
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Kinnear Smith, *Immediate Past President*
Richard B. Munn, *Executive Vice President*

October 23, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

The Associated General Contractors (AGC) appreciates the opportunity to respond to the State Water Resources Control Board's proposal for Subchapter 16, "Underground Tank Regulations."

Generally, AGC questions the statutory authority used as the basis for the scope of the regulatory program, e.g. the specific monitoring techniques required to be implemented by all as contrasted to AB1362 which permits the Board to designate several monitoring methods from which the operator and local government can choose. We also query the authority for Sec. 2634(f) response plans, Sec. 2635(c)(2) submittal of drawings, et al.

Moreover, numerous sections of the proposed regulations duplicate present sections of the Health and Safety Code, i.e. Section 2611(a), (HSE, Sec. 2528(m)), Section 2610(b), (HSC, Sec. 25284.2).

AGC expresses its concern that the drafters of the proposal are unfamiliar with actual conditions in the "workplace". As an example, industrial motor fuel tanks are usually in operation with no paving around either the filler cap of the dispensing pump. Although spills around these tanks would be detected in soils samples, the tank itself would, in most cases, be secure. Soil contamination naturally found in some work situations may represent no threat if it is unlikely to contaminate the water system, as in this example.

Section 2641(b)(4) is also a case in point. This section should be clarified to indicate that visual monitoring during a normal work week will be sufficient and that other monitoring methods will not be required for the days the facility is closed since there will be no activity during the period when a facility is not manned. Most facilities are normally manned five days a week.

The use of multiple tests because each test is imperfect to strive for "pure" water seems to represent overkill. The water supply naturally contains impurities. The effeciency of testing depends on a great extent on who is doing the testing. Multiple tests create an enormous cost to those required to test, without a guarantee that the result of multiple testing is more certain than those of a single test. We are also concerned that the alternate construction and monitoring for new motor fuel tanks seems to be more complicated than for general tanks (see Secs. 2633 and 2634 as compared to Secs. 2631 and 2632). Monitoring requirements for motor fuel tanks should be less stringent than for hazardous chemicals tanks, such as those storing acids. Also, access casing requirements in 2634(b) (motor fuels) are for no apparent reason more detailed than that identified in 2632(d) (general).

We ask that you consider the above before adopting the proposed Subchapter 16 Regulations on underground storage tanks.

Very truly yours,

J. B. Earl

J. B. Earl, Co-Chairman

Don McGrew

Don McGrew, Co-Chairman
Environmental and Energy Committee

JBE:cl

#135 HS

CALIFORNIA CARWASH ASSOCIATION

State Office:
2468 Huntington Drive
San Marino, CA 91108
(818) 285-1277

George R. Voigt
Executive Director

October 17, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Dear Mr. Singer:

In preparation for the public hearing scheduled in Sacramento on October 23, we would like to submit the following comments on the proposed new regulations governing underground storage tanks.

We recognize the need for the precautions embodied in the regulations to protect the environment. Also, as an industry, we recognize our special obligations to take all necessary precautions to avoid any further pollution of the environment. We are as concerned about this problem in our State as all other citizens.

However, in reviewing the regulations, we find some sections and requirements that we feel are unnecessarily onerous on our industry, or requiring overly expensive technology (and, in some cases, technology not readily available today), that does not, in our view, provide any greater protection than other less costly technology available and in use today.

Also, although the Small Business Impact Statement accompanying the regulations acknowledges the special circumstances that small business operators face under these regulations, we find few provisions in the regulations that give any consideration or allowances for small business. And our comments are addressed to these concerns, which we submit for your consideration.

For example, Sections 2632 & 2634 deal with two categories of underground tanks, providing for two types of tests for each of the types of tanks, requiring 100% electronic monitoring, 24 hours per day.

With the double containment and pressure-test requirements, we do not see the need for such expensive electronic monitoring

President
ARMANDO FIGUEROA
Carson Car Wash
Carson, CA

Vice Presidents
ROBERT WETZEL
Riverside Auto Lab
Riverside, CA
JOHN THOMASON
Valley Car Wash
Van Nuys, CA

Treasurer
CHUCK SOCKETT
Huntington Park Car Wash
Huntington Park, CA

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JACK BEAVER
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Bixby Knolls Car Wash
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Rosecrans Car Wash
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JON RICE
Rice Enterprises
Culver City, CA

Immediate Past Presidents
MARV BERKMAN
Foothill Car Wash
La Canada, CA
SUNNY SUNSHINE
Santa Palm Car Wash
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BERT SWEARINGER
Carson Car Wash
Carson, CA

Received DTS
OCT 23 1984

INTERNATIONAL CARWASH ASSOCIATION
NATIONAL CARWASH COUNCIL

on new steel tanks. We feel we can check leaks on such tanks just as effectively by probe test measuring, by regular stick measure, and by visual means, rather than electronically.

Also, where Section 2642, subsection (3) requires hydrostatic testing of tanks every two years, we feel that such frequency is totally unnecessary on such tanks. Every three or four years, until the tanks begin to age, should be sufficient.

Section 2644, dealing with soil testing and exploratory boring to check for leakage, based on our experience does not provide an accurate method of determining and locating leakage.

Prior to vapor recovery requirements, all gasoline storage tanks suffered from spillage, primarily due to sloppy handling of the fuel by delivery men transferring the fuel from their tank trucks into the storage tanks. (And this still is occurring in those areas, like Carmel, where vapor recovery still is not required.) And this gasoline and oil seepage or overflow over the years, as well as seepage from old leaks that have been repaired years ago, can still be found in underground soil or water pools, even where there has been no spill or leakage in recent years. Also, the way gasoline can move through the soil, following underground cracks and passages, a soil test will not always pinpoint the source of leakage.

In one case, in San Diego, evidence of gasoline in the soil was found near a service station. Its tanks were pulled and tested, and found not to have any leak. It was subsequently found, in following up on the source of leakage, that the contamination came from another source, a leaking tank, two and one-half miles away. In another case, where 1800 gallons of gasoline escaped from a leaking tank, the gasoline spread off somewhere through underground channels, and none could be detected in soil within the immediate vicinity of the leaking storage tank.

We therefore question some of the requirements for soil testing that can involve some very expensive technology, when other testing systems are more reliable in checking leakage and gasoline loss in storage tanks.

Also, we question whether the requirements for wells as a testing method is really feasible. Under the regulations, there could be as many as four or five wells required for every service station in the State. This adds up to so many thousands of wells that it could cause problems for water companies and affect the underground water supplies more than any gasoline leakage.

In reading the regulations, we have some questions about which of the many testing systems cited are required. In the explanatory letter announcing the October 23 public hearing, it states that "four or more monitoring methods must be used". But in sections of the regulations, it appears that seven or more methods may be required.

Aside from clarification on this point, we would like to suggest that there are four testing methods, now in use, which we believe would provide full and adequate protection for the detection of leaks, without placing unnecessary burdens or cost on the industry:

1. Bi-annual pressure testing of any and all tanks 10 years or more of age. Such a test will detect any existing leak in a tank. If a leak is discovered under pressure testing, owners of such tanks would have to repair (through relining) to the Board's or local jurisdiction's satisfaction, or provide double containment.

(We strongly question the figures that have been cited saying that 50% of all existing tanks currently have some leakage. A study by the Western Oil & Gas Association produces figures much lower than this. Also, the Board's regulations refer to "unwrapped tanks", and all of the tanks used in our car washes are wrapped.)

2. Strict enforcement of inventory controls, daily, weekly and monthly, by stick measurement, using a uniform record system that will easily show any unusual loss. We believe this is the most effective method of inventory control if used and enforced by all storage tank owners.

(We are aware that there seems to be some feeling at the Board staff level that we are unconcerned about environmental issues and do not care about some gasoline inventory loss. We know there are some operators who have not, in the past, paid much attention to inventory control. But we want to assure the Board that this is not true of most of us in the industry. We do care about the environment, and we are fully aware and concerned about our responsibility to help protect the environment. We also are concerned about inventory loss that can greatly reduce or eliminate our operational profits. And we feel that strict enforcement of the inventory control requirements would cause those few operators who are negligent in this regard to conform to the requirements.)

3. Require that tank protection (on the bottom of tanks) be installed or that a protective cushion be attached to the bottom of measuring sticks to protect against damage and eventual weakening of the tank bottom by sticks dropping onto the bottom time after time. (It should be noted that all new tanks require an extra steel cushion on the bottom of the tank to avoid such damage or wearing out of the tank skin.)

4. Install leak detectors in all pressurized sections of the system.

We believe that these four testing and monitoring methods will provide full protection against any leak going undetected. And, pending development of new testing technology, we don't believe there is any existing technology that will provide greater protection.

It has been said that pressure testing of tanks will not accurately detect very small or minor leaks. We do not agree. Using the criteria of the regulations, aimed at detecting leakage of .05 gallon per hour, current standard testing methods available today will detect such leaks, and no other testing method available today will detect leakage any more accurately. And a .05 gallon per hour leak is so insignificant that the escaped gasoline would not even show up in any method of soil testing. The standard pressure testing method is valid and acceptable for insurance companies, fire requirements, and all other requirements currently in existence, and should be sufficient for existing tanks, as well as new tanks.

Regarding consideration for the impact on small business, we feel that any such consideration should extend to any requirements demanding new technology.

For example, the major oil companies, which also own most of the storage tanks, have the resources to develop new technology to meet any additional testing or monitoring requirements. They have the equipment, technical experts and other staff, geologists, etc., and the financial resources to undertake development of new and better testing and monitoring technology.

We would like to ask the Board to consider a time-phasing schedule under which small business operators would have some extension of time to comply with any newer or developing testing and monitoring technology after the major oil companies have developed such technology.

We note in the material sent to us by the Board that there is a consideration that it may take as much as five years to gain full compliance with all the regulations, but we think that small business oeprators, like our carwash facilities, should not be placed in the same category with the major oil companies. We would like to see an extension of time for compliance by small business beyond the time of compliance for these large, major companies.

For example, we would like to see some provision that small businesses would be required to comply within 18 months after the time that the major companies must comply (with any new technology they develop to achieve compliance), or even within 18 months after the major companies have reached 70% compliance. We think such consideration for small business is justified, measuring the comparative impact on a small business's resources and that on the major oil companies.

We assure you that our Association of carwash operators, and members individually, want to comply with all regulations under the new legislation, and want to cooperate to the fullest extent with your Board. And we submit these comments and suggestions in the best of faith, hoping that you will give them serious consideration before adopting your final regulations.

Respectfully yours,

Armando Figueroa
President

AF:rc

#136

HS

Diablo Petroleum Inc.

October 9, 1984

State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Attn: Harold Singer

Dear Ladies and Gentlemen:

The following comments are submitted for your public hearing of October 23, 1984, on proposed regulations governing underground storage of hazardous substances:

AB 1362 seemed to take a reasonable approach to the problem of water contamination by underground tanks. The bill recognized a difference between motor vehicle fuels and other hazardous substances, and also industry practices which set the fuel industry apart from other tank users.

Specifically, the bill set different design and construction standards for motor vehicle fuels; a different method for monitoring filling operations; and a clearly stated paragraph which describes gauging and inventory records as the method for monitoring tanks containing motor vehicle fuels.

The draft regulations very narrow interpretation of the bill eliminates the separate provisions accorded motor vehicle fuels. Article 3, paragraph 2633 (b) removes the exemption granted by AB 1362 and actually calls for a much more elaborate containment system.

Article 4 of the draft regulations gives no weight to the alternative method for monitoring motor vehicle fuel tanks which AB 1362 quotes in Section 25284.1 (b), (3). This again is based on interpretation. We believe the legislature is setting a monitoring method for motor vehicle fuel tanks in lieu of wells. The regulation writer interprets this to mean gauging and inventory is merely supplemental to some very elaborate well installations, etc. The proposed regulations for soil testing and exploratory boring, vadose zone detection monitoring, ground water leak detection monitoring, and assurance ground water monitoring are excessive.

Received DTS
OCT 23 1984

4333 Pacheco Boulevard • Martinez, California 94553
(415) 228-2222 Martinez
(415) 634-3013 Brentwood
(707) 553-9127 Vallejo
(415) 447-2815 Livermore

There are numerous small tanks within the State, (they represent less than 1% of the total storage), where the costs of monitoring, soil boring, etc. would render it economically infeasible to maintain them. This would in turn cause a severe economic depression to small distributors who serve these tanks. I am referring to tanks with a diameter of 6 feet or less, with annual throughputs of less than 60,000 gallons. Considering the statistical probability of these tanks causing a serious contamination problem, the Sher provision in Section 25284.1, subdivision (a) (3) for gauging and inventory reconciliation and periodic tank testing should be quite adequate.

Article 4, paragraph 2643 (c) requires that meters must be approved by the County Sealer of Weights and Measures. Many small tanks, where resale is not a factor, use registers which are not certified by the Sealer, but which can be calibrated and are quite accurate. I hope you will consider these and change the regulation.

To oppose the recommendations of your sincere staff puts one in the awkward role of appearing to be an enemy of the environment. I am not.

It is merely my honest belief that the use of corrosion resistant materials, stringent inventory controls, and periodic tank testing, will aggressively protect the underground water supply and will meet the spirit and the letter of AB 1362.

I hope you will agree and will modify the regulations accordingly, at least as they apply to motor vehicle fuel-- especially for those small users.

Very truly yours,

Richard H. Fahey

Richard H. Fahey

#136D

Diablo Petroleum Inc.

November 21, 1984

State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Attn: Harold Singer

Dear Ladies and Gentlemen:

The following comments are submitted on your draft regulations of November 9, 1984, for underground tanks.

I am quite pleased that you have recognized that daily monitoring of suction pipelines is an important and effective means of checking for motor vehicle fuel leaks.

The monitoring alternative in Article 4, Subsection 2641 (b) (5) allowed for motor vehicle fuels is much less onerous than earlier proposals. If the throughput error mentioned in paragraph (iv) of that section could be modified to ½ of 1 percent it would be more realistic, and would still trigger the operator's or owner's attention if exceeded.

Thank you for your consideration.

Richard H. Fahey

Received DTS
NOV 26 1984

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DPI
Diablo Petroleum Inc.

4333 Pacheco Boulevard
Martinez, California 94553

RETURN RECEIPT
REQUESTED

CERTIFIED
P 331 707 813
MAIL

MARTINEZ CALIF 10/21 84

$1.55

DW
11/26

State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Attn: Harold Singer

RETURN RECEIPT REQUESTED

#136-e HS

Diablo Petroleum Inc.

January 15, 1985

State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Attn: Harold Singer

Dear Ladies and Gentlemen:

Thank you for providing the opportunity to review and comment upon the draft regulations governing underground storage of hazardous substances during the last three or four months.

Our company is in general agreement with the comments submitted by the California Independent Oil Marketers Association, and urge your careful consideration of their testimony.

We particularly appreciate your recognition of the physical laws governing suction lines, and of the role of leak detectors in pressure lines. Your good sense will save extensive, unnecessary expenditures for double walled pipes.

The monitoring alternatives (7) and (8) in Article 4 are another example of the application of common sense, and we appreciate that as well.

Very truly yours,

Richard H. Fahey

Richard H. Fahey

Received DTS
JAN 17 1985

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#137

Can Manufacturers Institute

1625 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Telephone
202 232-4677

BEFORE THE

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

1416 Ninth Street
P.O. Box 100
Sacramento, California 95801

SUBMISSION OF COMMENTS

IN RE

PROPOSED REGULATIONS GOVERNING

UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES

Pursuant to

Chapter 6.7 of Division 20 of the Health and Safety Code

On behalf of the

Can Manufacturers Institute

Date Submitted:

October 23, 1984

Submitted by:

Can Manufacturers Institute
1625 Massachusetts North West
Washington D.C. 20036
(202) 232-4677

Can Manufacturers Institute

1625 Massachusetts Avenue, N.W.
Washington, D.C. 20036

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COMMENTS OF THE

CAN MANUFACTURERS INSTITUTE

ON THE PROPOSED STATE WATER RESOURCES CONTROL BOARD

SUBCHAPTER 16 REGULATIONS

The Can Manufacturers Institute (CMI) is a national trade association of manufacturers of metal, composite cans and suppliers to the industry.. The 110 member companies of the CMI account for more than 85% of the cans manufactured and distributed in the United States.

The Can Manufacturers Institute is pleased to have the opportunity to comment on the proposed Sub Chapter 16 Regulations relating to the design, construction and operation of underground tanks storing hazardous substances. CMI membercompanies operate 43 can plants in the State of California and operate over 100 underground storage tanks within the State.

The CMI and it's membership concur with the fundamental purposes of the legislation and regulation which seeks the prevention of the degradation of ground water quality resulting from leaking underground storage tanks. Further, it is evident that the proposed Sub Chapter 16 Regulations represent extensive and hard work by the staff of the State Water Resources Control Board. However, we have reservations on the timing of many of the increments to be complied with in the time frame encompassed in the proposed regulations. In addition, many of the monitoring and soil testing requirements presuppose that tanks are leaking, whereas, the fact of the leaking should be established prior to the time that soil testing is undertaken.

Of particular concern is the methodology of tank testing that is both accurate and reproducable. The U.S. EPA is conducting a study of test methods and we believe that the Board should defer the establishment of final test until that work has been completed.

Since CMI member companies utilize their existing underground storage tanks for the storage of materials produced by paint and coating manufacturers we endorse the more extensive comments offered to the Board by the National Paint and Coating Association.

We encourage the Board to review comments on the proposed regulations in order to move toward a cost effective means of minimizing potential ground water contamination.

Respectfully submitted,

George D. Payne

George D. Payne
Chairman, Environmental Quality Committee

cc: Committee Members

GP:cm

#138 HS

Union Oil Company of California

Environmental Sciences Department
Union Oil Center, Box 7600, Los Angeles, California 90051
Telephone (213) 977-7795

ELR84-287

union 76

Patricia M. O'Toole
Coordinator, Environmental
Legislation and Regulations

October 23, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Proposed Regulations Governing
Underground Storage of Hazardous
Substances.
Subchapter 16 of Chapter 3,
Title 23,
California Administrative Code
(23 CAC Section 2610-2704)

Dear Mr. Singer:

This letter provides the comments of Union Oil Company of California (hereafter "Union") on the State Water Resources Control Board's (SWRCB) proposed regulations governing the underground storage of hazardous substances.

Union agrees that it is essential to protect the waters of the state from discharges of hazardous substances stored in underground tanks. It now may be necessary to do more than has been done in the past, regardless of the higher costs imposed as a result. However, costs are an important factor in undertaking any major new environmental program. We believe that these regulations should focus on utilizing the most cost-efficient, proven control technologies and management techniques that will provide the necessary protection for groundwater. Requiring money to be spent on duplicative monitoring systems and unproven control technologies simply diverts money away from effective solutions to the problem of protecting groundwater while maintaining current levels of service to our customers.

Received DTS
OCT 25 1984
(CONFIRMING COPY
ORIGINAL REC 10/23/84)

Enclosed is a set of comments (Attachment A) with specific suggestions for changes in the regulatory language. The comments address all parts of the proposed regulations, but focus primarily on Articles 3 and 4 and their application to the storage of motor vehicle fuels.

Union has three major concerns with these proposed regulations:

- First, we believe that the proposal goes well beyond the statutory jurisdiction granted to the SWRCB in Chapter 6.7, Division 20 of the Health and Safety Code. The proposed regulations appear to preempt the decision-making authority expressly given to local agencies. For example, the regulations list a number of monitoring methods (Sections 2641 through 2647) required to be implemented by owners of existing tanks, thus depriving the local agency of any discretion or authority to choose among alternative monitoring methods to find the method best suited to local groundwater protection needs. The enabling statute for these regulations required the SWRCB to "develop regulations specifying monitoring <u>alternatives</u>" (emphasis added). Local agencies or their designees are supposed to "approve the location and number of wells, the depth of wells and the sampling frequency pursuant to these regulations." The monitoring methods stipulated in Article 4 are expressly presented as <u>all-inclusive</u> requirements, rather than alternatives, which appears to contradict the intent of the law to give local agencies a choice of monitoring systems. Furthermore, the detailed requirements (specifying the *location and number of wells, the depth of wells, and* the sampling frequency) associated with each of the proposed monitoring methods in Articles 3 and 4 directly contradict the statutory language that reserves those decisions to local agencies.

- Second, these regulations give low priority to daily gauging and inventory reconciliation. Union places special emphasis on good inventory control because we believe it is a particularly effective leak detection technique. We do not believe that a monitoring system can take the place of inventory reconciliation. The continuous monitoring devices required by these regulations can fail, but they give a facility a false sense of security. Good inventory control should continue to be the key element of any monitoring system for all new and existing underground motor vehicle fuel tanks (per Section 25284.1(b)(3) of the Health and Safety Code).

- Third, there is no distinction made in these regulations between a double-walled tank and a primary container (tank) that has secondary containment (liners). Union believes that in some situations a double-walled tank is the most protective system for leak prevention and detection. However, the regulations contain certain testing and monitoring requirements for new tank installation that are clearly inappropriate for a double-walled tank. These problems are addressed more fully in Attachment A. We hope that the SWRCB will make the necessary corrections or clarify these regulations to allow a double-walled tank storing motor vehicle fuel to use the same monitoring requirements applicable to single-walled tanks with secondary containment that are used to store motor vehicle fuels (Section 2634).

Union is hopeful that our comments and those of other affected parties will aid the SWRCB in its attempt to formulate workable regulations governing the underground storage of hazardous substances. Union requests that the foregoing comments and all attachments be made part of the written record on this issue and that the SWRCB supply us with copies of any new or modified regulation that is proposed or promulgated as a result of this public comment and hearing process.

If you have any questions concerning Union's comments or would like to discuss these issues further, please feel free to contact Howard Platt of our 76 Division - Marketing staff at (213)977-7533 or Grant Frost of my staff at (213)977-7699.

Very truly yours,

Patricia M. O'Toole

Patricia M. O'Toole

PMO:ml
Enclosure

ATTACHMENT A

COMMENTS & SUGGESTIONS ON

SWRCB UNDERGROUND TANK REGULATIONS

TO IMPLEMENT AB 1362 (8/23/84 DRAFT)

ARTICLE 2. DEFINITION OF TERMS

2620 Section 2620 Definitions

These regulations should be modified to exempt any pipeline or system of pipelines that do not normally contain hazardous substances and are used as vapor or vent lines. Regulation of these pipes would result in unnecessary expenditures for double containment and monitoring that would provide no environmental benefit since there should be no hazardous liquids in the pipes. Union suggests the following changes to the definitions in Article 2 in order to clarify the scope of these regulations:

20.1 To be consistent, the definition of tank should be changed to exclude "including connecting piping" so that it reads: "Tank means any single container which is used for the storage of hazardous substances and which is substantially or totally beneath the surface of the ground."

20.2 Add a definition for "daily" that would limit its meaning to any operating day in order to provide optimal operational efficiency and ease for facilities in complying with the regulations.

20.3 Add a definition for "motor vehicle fuel" that describes it as any substance used to power an internal combustion engine. This change would clarify that Sections 2633 and 2634 apply to a type of material (motor vehicle fuels) and not to the use of the material.

ARTICLE 3. NEW TANK CONSTRUCTION AND MONITORING STANDARDS

2631 Section 2631 Construction Standards for New Underground Storage Tanks

Union thinks that the requirement in Section 2631(e) should address the secondary container, not the storage facility, since many secondary containers such as double-walled tanks are not open to rainfall even though the "facility" in which they are located may be. In such cases, the extra capacity required for rainwater would be superfluous:

31.1 Change Section 2631(e) to read: "If the secondary container is open to rainfall, then the secondary container must be able to accommodate the volume of the twenty-four (24) hour-one hundred (100) year storm in addition to that required in subsections (d) and (f) of this section."

2632 Section 2632 Monitoring Standard for New Underground Storage Tanks

Union objects to the requirement that underground tanks be monitored with a continuous sensor and an alarm system. Such requirements limit design options in cases in which periodic sampling or inspection may be acceptable. Continuous monitoring with alarms may only increase total costs with little or no added protection of State Waters. Periodic monitoring, using visual observation or other means, can provide adequate protection to State Waters with an expenditure of approximately $6,000 less per facility. We suggest that the word "may" be used in place of "shall" to give local agencies the necessary discretion to deal with varying local situations.

One interpretation of this section, as currently written, could require a facility to have someone on call at all times to immediately take a sample of the liquid once the alarm has sounded. This resource-intensive requirement does not afford a commensurate amount of additional environmental protection. Union believes that a routine sampling program would provide the necessary environmental protection in most cases. Therefore, we suggest the following changes, which make the continuous monitoring/alarm requirement optional:

32.1 Change Section 2632(e) to read: "The sump shall be monitored as often as appropriate to ensure detection of the presence of a hazardous substance. Sensors, if used, shall be removed for calibration and maintenance as needed. The monitoring method shall be capable of either:

(1) Detecting within the sump 0.5 inches of standing liquid when any combination of a hazardous substance or water is present. All standing liquid shall be sampled and analyzed within a time specified by the local agency to best detection limits to determine the presence of hazardous substances. A continuous monitoring system cannot be used when water is normally expected to be present within the secondary containment; or

(2) Detecting within the sump 0.5 inches of the hazardous substance stored in the primary container(s) and activating a strategically-located, above-ground alarm system, if used."

32.2 Change Section 2632(f) to read: "The interstitial space between the walls of a double-walled tank may be monitored routinely using a pressure sensor. Double-walled tanks which utilize this leak detection system are exempt from requirements of Sections 2632(c) through (e) and Section 2648."

2633 Section 2633 Construction Standards for New Motor Vehicle Fuel Tanks

Union believes that the addition of the following subsection is important in order to clarify that a double-walled tank can be used to store motor vehicle fuel, and that when a tank of this type is used to store motor vehicle fuel the monitoring requirements of Section 2634 may be used. This conforms to Health and Safety Code Section 25284:

33.1 Add a new Section 2633(g) to read: "Underground tanks constructed with primary and secondary levels of containment, including double-walled tanks that satisfy the requirements in Section 2631, shall be considered to fulfill the requirements of this section."

Another subsection that Union believes should be added to Section 2633 would exempt suction piping from secondary container requirements. The operational principle of this type of piping provides the necessary self-testing. If the piping develops a leak, it will lose suction and not deliver product:

33.2 Add new Section 2633(h) to read: "Suction piping systems are exempt from secondary container requirements."

2634 Section 2634 Monitoring Standards for New Motor Vehicle Fuel Tanks

Union believes that the monitoring requirements in Section 2634 are technically sound and should be applicable to both new and existing motor vehicle fuel tanks. However, vadose zone detection monitoring should be allowed for existing tanks that do not have a secondary container. Monitoring or testing of the soil adjacent to these tanks should be considered equivalent to monitoring a secondary container. We suggest that the standards include:

34.1 (1) Monitoring (periodic, not continuous).
(2) Daily gauging and inventory reconciliation.
(3) Testing.
(4) Leak detection in pressurized piping systems.

Union suggests two revisions to the subsection on hydrostatic testing of tanks. The first change is necessary to eliminate unnecessary testing of double-walled tanks. Monitoring of the interstitial space of a double-walled tank provides better (i.e., cheaper and quicker) evidence of tank integrity than does hydrostatic testing. The second suggested change would increase administrative efficiency. Testing at least once every three years could be part of the three-year inspection program. A more frequent interval of testing could be

required by a local agency on a site-by-site basis, considering the age of the tank, stored materials, and local hydrogeologic conditions:

34.2 Change Section 2634(a)(3) to read: "Double-walled tanks are exempt from testing unless a hazardous substance or water is detected within the interstitial space. Testing of other tanks shall be conducted at least every three years according to criteria in the National Fire Protection Association pamphlet 329."

34.3 Union objects to the requirement for a continuous sensor/alarm for casing and suggests that Section 2634(c) be changed to read: "The casing shall be monitored as often as appropriate to ensure detection within the casing of 0.5 inches of the hazardous substance stored in the primary container. Sensors, if used, shall be removed for calibration and maintenance as needed. The determination of monitoring frequency shall be based on the following factors:

(1) The volume of the secondary container in relation to the volume of the primary container; and

(2) The amount of time the secondary container can be expected to provide containment in relation to the period of time between monitoring and completion of the clean-up of leaked materials."

There are a number of factors that can alter the results of daily gauging and inventory control, such as errors in reading the stick gauge (an error of one-eighth inch could cause a 20-gallon error in a 10,000 gallon tank), variations in the temperature and pressure (and thus the volume) of the stored substance, and variations in the calibration of the meter. Given the potential for miscalculations caused by these variables, the 50-gallon per day trigger for response action may be too low in many cases. In addition, daily inventory requirements should take account of throughput (i.e., the amount of product delivered and the amount sold), rather than merely the amount of product delivered, in order to provide an accurate indication of the amount of product in a tank:

34.4 Section 2634(d)(1) should be changed to read: "A daily loss or gain of 100 gallons or five percent of the total daily throughput of product, whichever is greater. A consistent gain for five or more days shall be cause to gauge for water in the tank."

34.5 Section 2634(d)(2) should be revised to read: "Seven (7) day loss or gain of five percent of the total throughput volume of hazardous substance over the seven days."

2635 Section 2635 General Construction Standards

The location of underground storage tanks, with respect to buildings, should not be addressed in the Health and Safety Code. The building code of a local Department of Public Works is a more appropriate place for such regulations and, in fact, these codes already contain such requirements:

35.1 Union suggests that subparagraph (1) of Section 2635(c) be deleted and the following subparagraphs be renumbered.

Fuel deliveries are made on a continuous basis, 24 hours a day, very frequently to closed facilities or when the facility operator is not present. Even if the facility operator were present, the delivery responsibility would remain with the vehicle operator according to standard industry practice:

35.2 Section 2635(g)(1) should be changed to read: "Both the fluid level is visually monitored and the filling operation is controlled by the delivery vehicle operator during filling of the underground storage tank."

Union has serious concerns about the requirement in Section 2635(g)(2) that the available tank capacity be ten percent greater than the amount of product delivered at any time. The normal size delivery vehicle contains over 8,000 gallons of motor vehicle fuel in two to four compartments. The 110 percent capacity requirement would mean that 800 gallons or more of the tank's capacity would not be subject to filling. This storage capacity is too

costly not to be utilized when a safety margin of 200 gallons or less could provide adequate protection against overfill. The 600-gallon difference could result in dealers being out of product and suffering a loss of business during the period prior to delivery:

35.3 Section 2635(g)(2) should be changed to read: "The available capacity of the tank to be filled is determined by tank-gauging immediately prior to filling to be:

(A) at least 200 gallons more than the volume of the entire delivery vehicle compartment(s) to be delivered into storage tank(s) of 4,000-gallon capacity or larger; or

(B) at least 100 gallons more than the volume of the entire delivery vehicle compartment to be delivered into storage tanks of less than 4,000-gallon capacity."

ARTICLE 4. EXISTING UNDERGROUND STORAGE TANK MONITORING CRITERIA

2640 Section 2640 Applicability

Union believes that observation wells should not be arbitrarily required for existing tanks. Wells may be necessary if inventory controls are not maintained as recommended, and a local agency should be able to require them as a result of a suspected tank failure or leakage.

The authorizing provisions of the Health and Safety Code (Sections 25284 and 25284.1) require alternate monitoring methods to be provided for tanks containing motor vehicle fuels, with approval of the location and number of wells, the depth of wells, and the sampling frequency resting with the local permitting agency. Union believes that the SWRCB should consider adding new sections covering monitoring for both new and existing motor vehicle fuel storage tanks:

40.1 A new Section 2640(j) should be added that would read: "Owners of underground storage tanks containing motor vehicle fuels subject to this section may be considered to comply with monitoring requirements herein when the following requirements are met:

(A) New motor vehicle fuel tanks:

(1) Primary and secondary containment with periodic monitoring of secondary container or interstitial space of double-walled tanks.

(2) Inventory control pursuant to Section 2643.

(3) Tank testing pursuant to Section 2642 when inventory control indicates a loss or gain.

(4) Monitoring of all pressure piping systems, utilizing an on-line pressure loss detector and flow-reduction device.

(B) Existing motor vehicle fuel tanks:

(1) Inventory control pursuant to Section 2643.

(2) Tank testing when required by permit or periodically when inventory control indicates a loss or gain. The periodic testing interval shall be annual for unprotected steel tanks and at least every three years for corrosion-resistant tanks.

(3) Monitoring of all pressure piping systems utilizing an on-line pressure loss detector and flow-reduction device.

(4) Installation of monitoring wells as required by the local agency on a site-by-site basis."

40.2 In order to be consistent with the statutory requirement that local agencies be given alternative monitoring methods from which to choose, Union suggests the following change to Section 2640(e):

"(1) All owners of existing underground storage tanks subject to this subchapter who are not able to implement visual monitoring as specified in Section 2641 of this article, shall implement each alternate monitoring method as specified below:

(A) Section 2642 -- Tank Testing;

(B) Section 2643 -- Inventory Control; and

(C) Section 2634(4) -- Monitoring of all pressure-piping systems utilizing an on-line pressure loss detector and flow-reduction device.

(2) A local agency may require one or more of the following additional methods prior to issuance of a permit:

(A) Section 2644 -- Soils Testing and Exploratory Boring

(B) Section 2645 -- Vadose Zone Detection Monitoring

(C) Section 2646 -- Ground Water Leak Detection Monitoring

(D) Section 2647 -- Assurance Ground Water Monitoring."

Union believes that it is unnecessary to install an assurance monitoring system absent detection, by vadose zone or soil monitoring, of a previously or currently stored hazardous substance. There is an expected 1:3 ratio of horizontal spreading to vertical migration associated with any leak of a hazardous substance from an underground tank. Thus, by the time a leaking substance has migrated 30 feet vertically, the horizontal plume should be about 10 feet wide. Vadose zone wells are placed, and soil bores taken, in much closer proximity to the tank than the outer limit of the horizontal plume. Therefore, these methods should detect a leak long before the substance reaches the 200-foot depth or groundwater at

which the assurance monitoring system is directed. It is highly unlikely that assurance monitoring would yield a positive result if all other monitoring results come back negative:

40.3 Union suggests the following change to Section 2640(g): "If a hazardous substance stored or previously stored in an underground tank is present in the soil or vadose zone adjacent to the tank, then the owners of the underground storage tank shall, if feasible, install an assurance monitoring system which monitors groundwater beneath the underground storage tank. Underground storage tank owners are exempt from this requirement if they meet the exemption criteria contained in Section 2647 of this article."

2641 Section 2641 Visual Monitoring

It is unclear to us whether the use of the term "exempted" in Section 2641 would prohibit visual inspection of a tank where the conditions cited in 2641(b)(1), (2), (3), or (4) apply. It is our belief that visual monitoring, where practical, provides one of the most reliable monitoring techniques set forth in these regulations, and that tank owners should have the option of using visual monitoring rather than other monitoring techniques, even if it is necessary to use personal protection equipment as in 2641(b)(3):

41.1 Union suggests that Section 2641(b) should be changed to read: "If any one of the following conditions are met, the owner may be exempted from implementing visual monitoring for that portion of the tank to which the condition applies."

Union believes that the requirement that tanks be visually monitored at least daily is excessive if the tank is located in a secondary containment structure that provides sufficient protection for groundwater in the event of a leak:

41.2 Union suggests the following change to the language in Section 2641(c)(3): "Visual inspections shall be performed on a periodic basis as specified in the permit. At least one inspection shall be performed when the liquid level in the tank is at its highest."

Union believes that recording the liquid level in the tank at the time of visual inspection and inclusion of this information in the annual report to the SWRCB should be sufficient, and that any more frequent routine reporting requirement would impose an excessive paperwork burden on tank owners with no commensurate environmental benefit:

41.3 Union suggests that the language in Section 2641(c)(4) be changed to read: "Recordation of the liquid level in the tank at the time of the inspection."

The requirement that any observed liquid be subject to a laboratory analysis seems excessive if the liquid can be easily identified by the tank owner/operator. We suggest that this requirement be applied only in cases in which the liquid cannot be identified with certainty by the owner/operator:

41.4 Union suggests that Section 2641(d)(1) be changed to read: "<u>If the observed liquid cannot be identified with certainty, a</u> laboratory analysis of the observed liquid."

<u>2642</u> <u>Section 2642 Underground Storage Tank Testing</u>

Union interprets the statute to require the SWRCB to provide tank testing as one alternative that can be selected among others by the local agency. Union believes that tank testing should not be required when monitoring wells have been constructed, are in use, and are sampled more frequently than the tank testing schedule would require:

42.1 Union suggests the following change to Section 2642(a): "<u>If required by the local agency,</u> all owners of existing underground storage tanks subject to this subchapter shall, except as provided in subsection (b) of this section, implement a testing program pursuant to subsections (c) through (g) of this section."

Union believes that testing of tanks (other than double-walled tanks) at least once every three years should be part of the three-year inspection program. A more frequent interval of testing could be required by a local agency on a site-by-site basis, considering the age of the tank, stored materials, and local hydrogeologic conditions:

42.2 Union suggests revising the testing schedule under Category B in Section 2642(d) to read: "Corrosion resistant tanks[1] -- within one year of permit issuance and <u>every third year</u> beginning fifteen (15) years after tank installation."

Union believes that testing a double-walled tank on a regular schedule, rather than when evidence of a leak is detected by monitoring the interstitial space, provides no additional environmental protection and needlessly requires the tank to be taken out of service for the testing period:

42.3 A new Category C should be added to Section 2642(d) that would read: "No testing is required for double-walled tanks unless inventory-control methods described in Section 2643 indicate that product loss has occurred and/or periodic monitoring indicates the presence of hazardous substances or water in the interstitial space."

<u>2643</u> <u>Section 2643 Inventory Control</u>

Union interprets the authorizing statutory language as giving local agencies the prerogative to select a monitoring program for a facility from various alternatives offered by the SWRCB in these regulations. Therefore, we suggest the following changes to Section 2643:

43.1 Section 2643(a) should be changed to read: "<u>When required by the local agency</u>, owners of existing underground storage tanks subject to this subchapter shall implement an inventory control program as described in this section."

43.2 Delete subsection 2643(b) and redesignate subsection (c) as (b).

43.3 Section 2643(d) should be redesignated as (c).

Wholesale meters are already regulated by county Departments of Weights and Measures. Union does not believe that duplicative Health and Safety Code regulations are necessary for verification of the accuracy of wholesale meters:

43.4 Delete subsection (e).

43.5 Redesignate subsection (f) as (d).

There are a number of factors that can alter the results of daily gauging and inventory control, such as errors in reading the stick gauge (an error of one-eighth inch could cause a 20-gallon error in a 10,000 gallon tank), variations in the temperature and pressure (and thus the volume) of the stored substance, and variations in the calibration of the meter. Given the potential for miscalculations caused by these variables, the 50-gallon per day trigger for response action may be too low in many cases. In addition, daily inventory requirements should take account of throughput (i.e., the amount of product delivered <u>and the amount sold</u>), rather than merely the amount of product delivered, in order to provide an accurate indication of the amount of product in a tank:

43.6 Change the language in subsection (f)(1) to read: "A daily loss or gain of <u>100 gallons or five percent of the total daily throughput of product, whichever is greater. A consistent gain for five or more days shall be cause to gauge for water in the tank.</u>"

43.7 Change the language in subsection (f)(2) to read: "Seven (7) day loss or gain of five percent of the <u>total throughput</u> volume of hazardous substance over the seven days."

<u>2644</u> <u>Section 2644 Soil Testing and Exploratory Boring</u>

44.1 Union believes that Section 2644(c), requiring slant boring, should be deleted for the following reasons:

(1) It increases drilling costs without a commensurate environmental benefit. (Drilling costs could double.)

(2) It requires a large work area that may not be available at most facilities.

(3) The possibility of soil caving and sloughing during drilling is greatly increased with slant boring.

(4) It is difficult to determine during drilling whether a slant bore is being placed exactly 50 feet below the invert of the tank.

(5) It greatly increases the possibility of drilling into utility lines or other underground facilities.

(6) Evidence from subsurface spill investigations indicates that mobile fluids in the unsaturated zone migrate both laterally and vertically. Therefore, vertical boring should be sufficient to detect any leaks.

44.2 Redesignate 2644(d) as (c). In addition, the depth requirement in this subsection should be changed from "50 feet below the invert of the tank" to a constant depth requirement for all sites, measured from ground level, in order to eliminate the uncertainty that contractors face in calculating the size of the tank and the depth at which it is buried on a tank-by-tank basis.

A registered civil engineer, registered geologist, or certified engineering geologist is seldom involved with day-to-day field work but may be involved in a supervisory capacity. This reduces the cost of field work by as much as $50 per hour while still ensuring the integrity of the work performed:

44.3 Redesignate Section 2644(e) as (d) and revise subparagraph (4) to read: "All borings shall be logged in detail and the soils described according to the Unified Soils Classification System <u>by a competent person trained in soils engineering or an engineering geologist, with the entire project being supervised</u> by a registered civil engineer or registered geologist competent in soils engineering or a certified engineering geologist."

44.4 Subsections (f) and (g) should be redesignated as (e) and (f) respectively.

2645 Section 2645 Vadose Zone Detection Monitoring

Union's interpretation of the statutory language would give local agencies the prerogative to select a monitoring program for a facility from various alternatives offered by the SWRCB in these regulations. Therefore, Section 2645(a) should be changed to reflect the discretion vested in local agencies:

45.1 Union suggests that the language in Section 2645(a) be modified to read: "When required by the local agency, owners of existing underground tanks subject to this subchapter shall implement a vadose zone detection monitoring system pursuant to this section."

At the present time, vadose monitoring is not a proven method for detecting leakage of certain types of materials (e.g., non-volatiles) from underground storage tanks:

45.2 Union suggests that Section 2645(b)(3) be changed to read: "Vadose zone monitoring is not required if the hazardous substance being stored is not susceptible to detection by a proven method of vadose zone monitoring."

2646 Section 2646 Ground Water Leak Detection Monitoring

Union's interpretation of the statutory language vests discretion in local agencies with regard to the choice of monitoring methods:

46.1 We suggest that Section 2646(a) be changed to read: "When required by the local agency, owners of existing underground storage tanks subject to this subchapter shall, except as provided for in subsection (b) of this section, implement a ground water leak detection monitoring system pursuant to subsections (c) through (f) of this section."

The calculation of the depth requirement in subsection 2646(c) should be changed in order to provide greater certainty for drilling contractors with regard to the required depth and to preclude the possibility of inadvertently drilling through the confining layer of the aquifer:

46.2 We suggest that the last sentence of Section 2646(c) be changed to read: "The ground water monitoring wells shall extend 20 feet below the <u>top of the saturated aquifer</u> in order to provide assurance monitoring pursuant to Section 2647 during periods of low ground water."

Union interprets the statute as granting local agencies the authority to determine the number, placement, depth, and construction standards for groundwater monitoring wells, as well as the frequency of monitoring:

46.3 We recommend that Section 2646(e) be changed to read: "The primary ground water monitoring network shall be designed and constructed according to the criteria set forth by the local agency."

46.4 Section 2646(f) should be deleted.

<u>2647</u> <u>Section 2647 Assurance Ground Water Monitoring</u>

Union's interpretation of the statutory language gives local agencies the authority to determine the monitoring method(s) needed at a particular site:

47.1 We suggest that Section 2647(a) be changed to read: "<u>When required by the local agency</u>, owners of existing underground storage tanks subject to this subchapter shall, except as provided in subsection (b) of this section, implement an assurance ground water monitoring system."

Union does not believe it is good practice to provide a conduit for the migration of hazardous substances to an aquifer by drilling wells to a depth greater than 50 feet beneath the surface. It is our recommendation that wells not be drilled to a depth of 200 feet. Furthermore, the migration rate of a hazardous substance may be such that detection is desired long before the substance could travel even 50 feet, much less 200:

47.2 We suggest that the language of Section 2647(b)(2) be changed to read: "The highest ground water level expected during the life of the facility is at a depth greater than 50 feet."

Limiting the exemption in subsection (b)(3) to a horizontal distance of 500 feet from a tank may force facilities to drill assurance groundwater monitoring wells offsite. The ability of the tank owner to negotiate such an agreement with adjacent property owners is not assured, and the failure to gain such agreement would result in an inability to permit a tank. Union recommends that a horizontal distance that can be reasonably expected to be within the property limits of the permittee be substituted for the 500-foot requirement in this subsection.

Union believes that the statutory language vests all authority regarding the depth, placement, construction standards, and sampling frequency for monitoring wells in the local agency:

47.3 Section 2647(c) should be changed to read: "Assurance ground water monitoring networks shall be established according to the criteria set forth by the local agency."

47.4 Sections 2647(d) through (g) should be deleted.

2648 Section 2648 Well Construction and Sampling Methods

Cleaning of tools at the start of boring activity should be sufficient to ensure accurate sampling results. The requirement to clean the equipment "immediately after a boring is completed" would be redundant in cases where more than one boring is done at the same time and the requirement to clean the equipment "immediately before a boring is started" is complied with before each successive boring. In cases where only one boring is done, common sense and standard practice dictate such cleaning after the boring in order to protect the equipment:

48.1 We suggest that Section 2648(c) be reworded to read: "All drilling tools shall be cleaned immediately before a boring is started."

ARTICLE 5. RELEASE REPORTING REQUIREMENTS

2651 Section 2651 Unauthorized Release Requiring Recording

Cost is not a necessary element of a recording report and may not even be known at the time a report is made:

51.1 We suggest that the language in Section 2651(b)(2) be rephrased as follows: "Method of clean-up."

2652 Section 2652 Unauthorized Release Requiring Reporting

The language in Section 2652(b) regarding constructive knowledge of the existence of a leak for reporting purposes is ambiguous as currently written:

52.1 We suggest that the language in Section 2652(b) be changed to read: "All unauthorized releases meeting the criteria of subsection (a) of this section shall be reported within 24 hours after the release has been detected or should have been detected based on the monitoring requirements imposed by this subchapter and the local agency. The operator or permittee shall notify the local agency, Office of Emergency Services and the Regional Water Quality Control Board."

Cost is not a necessary element of a recording report and may not even be known at the time a report is made:

52.2 The language in Section 2652(c)(3) should be changed to read: "Method of clean-up implemented to date and proposed clean-up actions."

ARTICLE 7. CLOSURE REQUIREMENTS

2670 Section 2670 Applicability

Service station leases can be terminated on a 30-day notice. The 45-day notice period in Section 2670(f) could cause some confusion regarding the necessity to continue storing the hazardous substance for 15 days beyond lease termination if the tank owner had no knowledge that the lease would be terminated before the required 30-day notice period. The reporting requirement for cessation of storage should be made concurrent with the notice period for termination of a lease:

70.1 We recommend that the language in Section 2670(f) be modified to read: "At least 30 days prior to cessation of storage..."

2671 Section 2671 Temporary Closure

The requirement to seal all piping when a tank is temporarily closed may contravene local Fire Department regulations that a vapor vent be left open during the closure period:

71.1 We suggest that the language in Section 2671(b)(4) be changed to read: "All fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs. Nothing in this subsection shall prevent a facility from complying with local Fire Department regulations."

2672 Section 2672 Permanent Closure Requirements

The management of hazardous waste is regulated by the Department of Health Services pursuant to the authority vested in that department by Chapter 22 of the Health and Safety Code. Therefore, all portions of this Subchapter dealing with such management activities exceed the authority of the SWRCB and should be deleted:

72.1 Sections 2672(b)(1), (b)(3), (c)(1), and (c)(2) should be deleted.

ARTICLE 8. VARIANCE PROCEDURES

2682 Section 2682 Site-Specific Variances

There appears to be a typographical error in subsection (g):

82.1 Section 2682(g) should be corrected by replacing the word "categorical" with "site-specific."

ARTICLE 10. PERMIT APPLICATION

2711 Section 2711 Permit Application and Information

We suggest adding a paragraph to Section 2711(b) requiring a copy of the hazardous substance storage statement (HSSS) to be included as part of the permit application. This change would satisfy the requirements in subparagraphs (1) through (6), (9), (10), and (11) of this subsection:

11.1 Section 2711(b)(1) should be changed to read: "A copy of the Hazardous Substance Storage Statement required by Section 13173 and 13174 of the Water Code."

11.2 Sections 2711(b)(2), (b)(3), (b)(4), (b)(5), (b)(6), (b)(9), (b)(10), and (b)(11) should be deleted.

2712 Section 2712 Permit Conditions

A three-month period may not be adequate time for design, evaluation, and testing work and completion of the permitting process:

12.1 We suggest that the fourth sentence in Section 2712(f) be changed to read: "A provisional permit will be issued for no longer than <u>six</u> months; <u>however, the local agency may grant one extension of such permit for a period not to exceed six months</u>."

138-B HS

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Patricia M. O'Toole
Manager, Environmental
Legislation and Regulations

November 26, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
901 "P" Street
Sacramento, California 95801

Proposed Regulations Governing
Underground Storage of Hazardous
Substances
Subchapter 16 of Chapter 3,
Title 23,
California Administrative Code
(23 CAC Section 2610-2704)

Dear Mr. Singer:

This letter provides the comments of Union Oil Company of California (hereafter "Union") on the State Water Resources Control Board's (SWRCB) revised proposed regulations governing the underground storage of hazardous substances.

Union's comments will be limited, due to the brief time allocated for review. (We only received a copy of the revised draft regulations for comment on November 14, 1984.) However, in general, we think that the revised draft of the regulations is an improvement over the previous draft that was the subject of the October 23, 1984, public hearing. Attachment A contains Union's comments, with specific suggestions for changes or corrections in the regulatory language. The comments address all parts of the proposed regulations, but focus primarily on the monitoring alternatives (Table 4.1) in Article 4.

Received DTS
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Union continues to have two major concerns with the revised proposed regulations:

- First, although we understand that the statute establishes the effective date of July 1, 1985, we believe that this is an unrealistic and unworkable time period within which to outfit all the underground storage tank facilities in the state with proper monitoring equipment. We believe that the Board, by regulation, could provide a more realistic schedule or phasing-in of facility monitoring requirements based on priorities such as water sources, substances stored, tank construction materials, and age of tanks.

  Section 2712(e) on Permit Conditions is a start in the right direction for a phased schedule: "The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks." Tank owners should have as much or more time from the date of adoption of regulations to complete the construction necessary to outfit facilities according to local agency permit requirements. A realistic, workable schedule from the effective date of the regulations to complete compliance would be three years. This time frame is essential to allow engineering, testing, design, permitting, procurement of materials, contracting and construction to be completed.

- Second, we believe that the revised draft regulations still go well beyond the statutory jurisdiction granted to the SWRCB in Chapter 6.7, Division 20 of the Health and Safety Code. Section 25284.1, renumbered as 25292, reads:

  > "The local agency, or any other public agency specified by the local agency, shall approve the location and number of wells, the depth of wells, and the frequency, pursuant to these regulations."

  The proposed revised regulations continue to interfere with the decisionmaking authority given to local agencies. For example, the following sections specify monitoring frequency, number of wells and depth of wells:

  > Section 2632(c)(1) and (2)(B) - daily visual inspections and daily manual monitoring.

Section 2634(d)(1) - daily manual monitoring if not continuous.

Section 2642(b)(4) and (C)(3) - daily for visual.

Section 2641(c)(2)(B) and (C) - vadose daily monitoring and number of wells and frequency in Table 4.1.

Section 2641(c)(3)(A) and (B) - depth of wells, and (C) - continuous or daily.

Section 2641(c)(4)(B) - monthly groundwater monitoring.

Section 2641(c)(6)(E) and (F) - semi-annually and number of wells.

Section 2648(P) - depth of wells.

Union believes that the Board should only suggest monitoring frequencies, number of wells, and depth of wells. The actual decision in each case should be made by the local agency, using site-by-site or area-wide permits.

Union is hopeful that these comments and those of other affected parties will aid the SWRCB in its efforts to adopt workable regulations governing the underground storage of hazardous substances. Union requests that the foregoing comments and attachment be made part of the written record on this issue and that the SWRCB supply us with copies of any new or modified regulation that is proposed or promulgated as a result of any public comment and hearing process.

If you have any questions concerning Union's comments or would like to discuss these issues further, please feel free to contact Howard Platt of our 76 Division Marketing staff at (213) 977-7533 or Grant Frost of my staff at (213) 977-7699.

Very truly yours,

Patricia M. O'Toole

Patricia M. O'Toole

PMO:ls/rb
Enclosure

ATTACHMENT A

UNION OIL COMPANY OF CALIFORNIA

COMMENTS AND SUGGESTIONS ON SWRCB SUBCHAPTER 16

UNDERGROUND TANK REGULATION (11/7/84 DRAFT)

ARTICLE 2. DEFINITION OF TERMS

2621 Additional Definitions

Union suggests that the following changes to the additional definitions in Section 2621 be made to clarify and make consistent the terms used in these regulations:

21.1 Add a definition for "daily" that would mean any operating day. The references to "daily" as meaning 7 days per week except Saturday and Sunday and holidays or 5 days per week is not appropriate since a business may operate on weekends and holidays and close on other weekdays.

21.2 The double-walled tank definition appears to contain a typographical error in the last line where "and plastic..." should read "or plastic..."

ARTICLE 3. NEW TANK CONSTRUCTION AND MONITORING STANDARDS

2630 Applicability

The definition of pipe in the statute is not clear regarding which piping connected to underground storage tanks is subject to these regulations. It is unclear whether pipes connected to the tank, but not containing hazardous liquids, are exempted from these regulations, as we believe they should be.

30.1 Union suggests that a new subsection (d) be added to read: "Vent and vapor piping connected to underground storage tanks that, under normal operating conditions, does not contain or store liquid is exempt from leak detection and secondary containment requirements of this subchapter."

2632 Monitoring Standards for new Underground Storage Tanks

As stated in our cover letter, the statute grants authority to the local agency to specify monitoring frequency.

32.1 Union suggests that the word "daily" be deleted and "frequency as specified by local agency" be inserted in Sections 2632(c)(1)(B) and (c)(2)(B).

2633 Construction Standards for New Motor Vehicle Fuel Tanks

Union believes that the addition of the following subsection is important in order to clarify that a double-walled tank can be used to store motor vehicle fuel, and that when a tank of this type is used to store motor vehicle fuel the monitoring requirements of Section 2634 may be used. This conforms to Health and Safety Code Section 25284 (or renumbered Section 25291).

33.1 Add a new Section 2633(h) to read: "Underground tanks constructed with primary and secondary levels of containment, including double-walled tanks that satisfy the requirements in Section 2631, shall be considered to fulfill the requirements of this section."

2634 Monitoring Standards for New Motor Vehicle Fuel Tanks

Union suggests that the subsection on hydrostatic testing of tanks be revised to eliminate unnecessary testing of double-walled tanks. Monitoring of the interstitial space of a double-walled tank provides better (i.e., cheaper and quicker) evidence of tank integrity than does hydrostatic testing.

34.1 Section 2634(a)(3) should be changed to read: "Hydrostatic testing of a tank, excluding double-walled tanks, every two years according to the criteria specified in Section 2643 of Article 4."

34.2 References in Section 2634(d)(1) specifying monitoring frequency should be deleted since local agencies, rather than the Board, have jurisdiction in this area.

34.3 Historically, inventory reconciliation records seldom, if ever, show a zero loss or gain condition. Union suggests that Section 2634(f)(3) be changed to read: "The operator shall have performed by a qualified person a complete review of all inventory records from the last time a compliance-related loss condition existed. This shall be completed within 24 hours of the conclusion of Subsection (f)(2)."

Union believes that monitoring the interstitial space of double-walled tanks is adequate for leak detection, based on the tanks' design, and that annual testing is a redundant and unnecessary expenditure.

34.4 Union suggests that Section 2634(f)(7) be changed to read: "The tank, except double-walled tanks which are exempt, shall be tested using the tests described in Section 2643 of Article 4 within 48 hours of completion of Subsection (f)(6)."

2635 General Construction Standards

35.1. Section 2635(b)(8)(A) appears to have a typographical error: "(2) or (3)" should read "(B) or (C)".

Fuel deliveries are made on a continuous basis, 24 hours a day, very frequently to closed facilities or when the facility operator is not present. Even if the facility operator were present, the delivery responsibility would remain with the vehicle operator according to standard industry practice.

35.2 Section 2635(b)(9)(A) should therefore be changed to read: "Both the fluid level is visually monitored and the filling operation is controlled by the facility or delivery vehicle operator during filling of the underground storage tank."

The available capacity in Section 2635(b)(9)(B) was changed from 110 percent to 103 percent as requested, but the wording change makes the section unclear as written.

35.3 It should be changed to read: "The available capacity of the tank to be filled is determined immediately prior to filling to be at least 103 percent of the volume of the entire tank compartment to be delivered as determined by tank gauging, or the tank capacity has a minimum of 200 gallons outage as vapor space when the tank is filled to maximum working capacity, whichever is less."

ARTICLE 4. EXISTING UNDERGROUND STORAGE TANK MONITORING CRITERIA

2640 Applicability

The authorizing provisions of the Health and Safety Code (renumbered Sections 25291 and 25292) require alternative monitoring methods to be provided for tanks containing motor vehicle fuels, with approval of the location and number of wells, the depth of wells, and the sampling frequency resting with the local permitting agency.

40.1 Union suggests, in order to be consistent with local agencies' jurisdiction, that Section 2640 be revised by deleting the first sentence and changing the remainder to read: "Local agencies shall select from the monitoring alternatives listed in Section 2641 and monitoring frequencies necessary to comply with the objectives specified in Subsection (b) of this Section and Subsection (d) of section 2641 of this Article."

40.2 Union suggests that the section previously numbered 2640(f) (now deleted) be added as Section 2640(g). This will allow local agencies to implement other monitoring alternatives as improved or new technology is developed.

2641 Monitoring Alternatives

Union believes that the revised proposed monitoring alternatives are an improvement over the prior draft. However, the enabling statute, in Health and Safety Code Section 25292(c), states that the local agency shall approve the location, number and depth of wells, and the sampling frequency. These revised proposed regulations continue to ignore the role of the local agency as it is spelled out in the statute. We ask that the Board amend these proposed regulations to conform to the statute by giving the required discretion to local agencies.

41.1 Monitoring frequency could be suggested by the SWRCB regulations, but the actual monitoring frequency should be determined by the local agency under the following Subsections of Section 2641:

- (c)(2)(B) - "Vadose zone monitoring shall be performed as required by local agency, but is suggested to be monthly or more frequent."
- (c)(2)(C) - Should be revised as to groundwater monitoring frequency and the number of wells in Table 4.1 Alternative 2, not 3 as stated.
- (c)(3)(C) - "Vadose zone monitoring shall be performed as required by local agency, but is suggested to be monthly or more frequent."
- (c)(3)(E) - Suggest tank testing as per the schedule in Section 2643(i).
- (c)(4)(B) - Should be revised as to groundwater monitoring frequency and the number of wells in Table 4.1 Alternative 2.

Union does not believe it is good practice to provide a conduit for the migration of hazardous substances to an aquifer by drilling wells to a depth greater than 50 feet beneath the surface. It is our recommendation that wells not be drilled to a depth of 100 feet. Furthermore, the migration rate of a hazardous substance may be such that detection is desired long before the substance could travel even 50 feet, much less 100.

41.2 We suggest that the 100 foot depth in Section 2641(c)(3)(A) and (B) be changed to 50 feet.

41.3 Section 2641(c)(4)(A)(111) should be deleted or revised since it prevents groundwater monitoring when the water table is above tank bottom or less than 10 feet from ground level.

41.4 There appears to be a typographical error in Table 4.2 in Section 2641 under inventory reconciliation. We believe that the allowable measurement for tank size 4000 to L8000 was intended to be 50, not 20 as shown.

41.5 Union suggests that the monitoring methods under monitoring alternative #6 be modified. The requirement for tank testing duplicates other monitoring requirements and would only increase costs with little or no added protection to groundwater. Alternative #6 currently requires inventory reconciliation, tank testing, pipeline leak detectors, and vadose zone or groundwater monitoring with soils testing. Union suggests deletion of the tank testing requirement. This change would delete underground storage tank testing in (c)(6) and (c)(6)(A), and would delete the entire paragraph (c)(6)(C).

41.6 There appears to be a typographical error in Section 2641 (c)(6)(D). The reference to (d) in Subsection (5) should be (D).

41.7 There appears to be duplication in the requirements of Section 2641(d), (d)(1), and (d)(2), and 2641(b) and (c).

Union suggests that some paragraphs be added under Interim Alternative Monitoring to grant some monitoring compliance relief for all tank owners with corrosion resistant tanks or tanks less than 15 years old, giving them 3 years to implement one of the monitoring alternatives.

41.8 We suggest that a paragraph be added to Section 2641 (c)(8) to read: "(iv) Any underground storage tank owner who provides a written committment to the local agency that the underground storage tank is corrosion resistant or less than 15 years old, and will within 3 years implement one of the monitoring alternatives (1-7) will be allowed interim operation of tanks with monitoring per Alternative #8."

2642 Visual Monitoring

It is unclear to us whether the use of the term "exempted" in Section 2642 would prohibit visual inspection of a tank where the conditions cited in 2642(b)(1), (2), (3), or (4) apply. It is our belief that visual monitoring, where practical, provides one of the most reliable monitoring techniques set forth in these regulations, and that tank owners should have the option of using visual monitoring rather than other monitoring techniques, even if it is necessary to use personal protection equipment as in 2642(b)(3).

42.1 Union suggests that Section 2642(b) should be changed to read: "If any one of the following conditions are met, the owner may be exempted from implementing visual monitoring for that portion of the tank to which the condition applies."

Union believes that the requirement that tanks be visually monitored at least daily is excessive if the tank is located in a secondary containment structure that provides sufficient protection for groundwater in the event of a leak.

42.2 Union suggests the following change to the language in Section 2642(c)(3): "Visual inspections shall be performed on a periodic basis as specified in the permit. At least one inspection shall be performed when the liquid level in the tank is at its highest."

Union believes that recording the liquid level in the tank at the time of visual inspection and inclusion of this information in the annual report to the SWRCB should be sufficient, and that any more frequent routine reporting requirement would impose an excessive paperwork burden on tank owners with no commensurate environmental benefit.

42.3 Union suggests that the language in Section 2642(c)(4) be changed to read: "Recordation of the liquid level in the tank at the time of the inspection."

2643 Underground Storage Tank Testing

Union believes that testing all existing tanks annually is too frequent and substantially increases costs of compliance with little or no added protection to groundwater. The change from no testing to testing every year is a drastic step that may not be necessary. It is suggested that an interval schedule be established based on tank materials and age.

Union believes that testing of tanks (other than double-walled tanks) at least once every three years should be part of the three-year inspection program. More frequent of testing intervals could be required by a local agency on a site-by-site basis, considering the age of the tank, stored materials, and local hydrogeologic conditions.

Union believes that testing a double-walled tank on a regular schedule, rather than when evidence of a leak is detected by monitoring the interstitial space, provides no additional environmental protection and needlessly requires the tank to be taken out of service for the testing period.

43.1 We suggest that the original Section 2642(d) be changed to read new Section 2643(i): "Underground storage tanks shall be tested according to the following schedule:

CATEGORY A: Unclad steel tanks without corrosion protection within one year of permit issuance and yearly beginning ten (10) years after tank installation.

CATEGORY B: Corrosion resistant tanks within one year of permit issuance and every three years beginning fifteen (15) years after tank installation."

43.2 A new Category C should be added to Section 2643(i) that would read: "No testing is required for double-walled tanks unless inventory control methods described in Section 2644 indicate that product loss has occurred and/or periodic monitoring indicates the presence of hazardous substances or water in the interstitial space."

2644 Inventory Reconciliation

Union believes that "daily" should be defined in Section 2621. If this definition of "daily" is not added, then the following change is suggested in this Subsection.

44.1 Change the language in Section 2644(c) to read: "For the purpose of this Section, "daily" shall be defined as operating days during which inputs or withdrawals are made to or from the underground storage tank." The last two sentences referring to 5 days per week and holidays during a week should be deleted.

44.2 There appears to be a typographical error in Section 2644(d)(6). The reference to Subsection (6) should be (5).

The statute allows inventory reconciliation by the operator if inventory records are kept on file for one year and are reviewed quarterly.

44.3 Union suggests that Section 2644(f) be deleted or changed to read: "The operator (delete owner) shall, on a quarterly basis, review the inventory reconciliation data and, if required by local agency permits, submit a statement to the local agency, under penalty of perjury, that the person signing the statement has reviewed the data and that either the data is within allowable variations or there is a listing of the dates and variations that exceed the allowable variations."

2645 Soil Testing

Union believes that soil testing should only be used to determine if hazardous substances currently stored in the underground storage tank are present in the area around the tank.

45.1 We suggest that Section 2645(k) be changed to read: "Samples shall be analyzed for one or more of the most persistent constituents that are stored in the underground storage tank". The remainder of the subsection should be deleted.

45.2 The language in Section 2645(m) should be changed to read: "If soil analysis indicates that an unauthorized release has occurred from the underground storage tank, the permittee shall report the release pursuant to Article 5 of this Subchapter and shall repair or abandon the underground storage tank pursuant to Article 6 or 7 of this Subchapter."

2646 Vadose Zone Monitoring

Union believes that some information needs to be obtained, other than manufacturers' data, to demonstrate the reliability of vadose zone monitoring methods. However, the regulations as proposed provide for testing on a site-by-site basis, even where identical tanks containing the same or similar products and employing identical monitoring systems may be in place at numerous other locations. We propose that this section be revised to provide for a single demonstration of a vadose monitoring system, if required by local agency, for multiple tank installations where a common product is stored and a similar backfill material is used.

46.1 We suggest Section 2646(f)(1) be changed to read: "Before any method of vapor monitoring is approved for a specific site, as required by local agency, or for multiple sites (defined as tanks containing similar types of products situated in similar backfill material), it shall be demonstrated by an actual onsite demonstration or, in the case of multiple sites, at a single location chosen by the local agency at random, using an appropriate tracer substance, that vapor could actually be detected by the installed system."

2647 Groundwater Monitoring

Union believes that groundwater monitoring can, in many instances, be an effective leak detection technique. However, Section 2647(d) with its prescriptive standards concerning the depth requirement for pipe perforation could prevent the use of groundwater monitoring in areas of high groundwater (within 10 feet of ground level).

47.1 Section 2647(d) should be changed to eliminate the reference to distance (5 feet and 10 feet) so that it reads: "Groundwater monitoring well casings shall extend to the bottom of the boring and be factory-perforated from a point above the bottom cap to a point above the highest anticipated groundwater level."

2648 General Construction and Sampling Methods

Union believes that discretionary decisionmaking concerning the construction and sampling methods should be left to the local agency/supervising geologist. The requirements in this section require a lot of extra time and provide little flexibility on a site-by-site basis.

48.1 It is suggested that, due to the time required for testing well water discharge to a 10ppm level, Section 2648(h) be revised to read: "All groundwater monitoring wells shall be appropriately developed as determined by the supervising geologist or his onsite representative."

ARTICLE 5. RELEASE REPORTING REQUIREMENTS

2652 Unauthorized Release Requiring Recording

Cost is not a necessary element of a recording report and may not even be known at the time a report is made.

52.1 We suggest that the language in Section 2652(c)(3) be rephrased as follows: "Method of clean-up implemented to-date and proposed clean-up actions."

ARTICLE 7. CLOSURE REQUIREMENTS

2672 Permanent Closure Requirements

72.1 Union suggests that all except the first paragraph of Section 2672(d) be deleted since the entire substance of the section is contained in that first paragraph.

ARTICLE 10. PERMIT APPLICATION

2711 Permit Application and Information

Union suggests that a paragraph be added to Section 2711(a) requiring a copy of the hazardous substance storage statement (HSSS) to be included as part of the permit application. This change would satisfy the requirements in subparagraphs (1) through (6), (9), (10), and (11) of this subsection.

11.1 Section 2711(a)(1) should be changed to read: "A copy of the Hazardous Substance Storage Statement required by Section 13173 and 13174 of the Water Code."

11.2 Section 2711(a)(2), (a)(3), (a)(4), (a)(5), (a)(6), (a)(9), (a)(10), and (a)(11) should be deleted.

#138-C

Union Oil Company of California

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ELR 85 - 364

union 76

Patricia M. O'Toole
Manager, Environmental
Legislation and Regulations

January 17, 1985

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
901 "P" Street
Sacramento, California 95801

PROPOSED REGULATIONS GOVERNING
UNDERGROUND STORAGE OF HAZARDOUS
SUBSTANCES
SUBCHAPTER 16 OF CHAPTER 3, TITLE 23
CALIFORNIA ADMINISTRATIVE CODE
(23 CAC SECTION 2610-2704)

Dear Mr. Singer:

This letter provides the comments of Union Oil Company of California (hereafter "Union") on the State Water Resources Control Board's (SWRCB) December 28, 1984, proposed regulations governing the underground storage of hazardous substances. Union's comments will be limited due to both the brief time allocated for review and the fact that Union has previously submitted comments (October 23, 1984 and November 26, 1984) on these proposed regulations.

Union appreciates the effort that the SWRCB and staff have put into the development of these regulations and we recognize that substantial progress has been made in developing a more workable set of regulations than were originally proposed. However, Union continues to have seven major concerns with the revised proposed regulations.

1. Alternative Monitoring Methods

Union believes that alternative monitoring methods should not be limited to the eight monitoring alternatives of the proposed regulations. As current monitoring technology improves or new technologies are developed, the local agencies should be able to approve these methods for use as long as they provide equivalent protection without going through the expensive and time-consuming "local agency additional standard request" procedures. This procedure may be just enough of an obstacle to discourage the consideration of any new monitoring technology by a local agency or, for that matter, the development of new technology by manufacturers, or the use of such technology by tank owners.

2. Monitoring Alternative Number 6

Union agrees that inventory reconciliation alone may not be an adequate method for detection of small leaks. A second back-up monitoring system that includes either annual tank testing or vadose zone groundwater monitoring should be used in order to provide adequate protection against leaks . However, Alternative 6 requires inventory reconciliation, tank testing, pipeline leak detectors, soil sampling and either vadose zone or groundwater monitoring, which seems a bit excessive. We believe that inventory reconciliation, pipeline leak detectors and either vadose zone or groundwater monitoring would be sufficient to detect any leak. Annual tank testing would simply add to the operating expenses of a facility without providing any additional information concerning possible leaks.

Union recommends that, if tank testing is substituted for vadose zone or groundwater monitoring, the schedule for tank testing be based on such factors as the age of the tank, the substance stored, type of tank material, and soil conditions in lieu of a blanket requirement for annual tank testing. It is our understanding that staff was asked by the Board to consider this idea for inclusion in the regulations. Union urges the Board to order it to be made part of the rule.

3. Site-Specific Monitoring Requirements

Union believes that the revised proposed regulations continue to interfere with the necessary decision-making authority of local agencies. However, the debate concerning how much authority the Sher bill granted the SWRCB to regulate the monitoring of underground tanks is beside the point. It is imperative that the local agency have the necessary flexibility with regard to monitoring requirements (depth, location and number of wells) in order to ensure that an appropriate monitoring system (balancing cost vs. protection) will be utilized, taking into account site location, facility design and underlying hydrogeology. The proposed minimum requirements could force a facility to install an inefficient, impractical, or unnecessarily expensive monitoring system in order to receive a permit to operate.

4. Groundwater Monitoring Requirements

Subsection 2640(b) states that "groundwater monitoring may be utilized as a primary means of monitoring when the groundwater does not have actual or potential uses." However, groundwater monitoring may be the only effective means of monitoring at some facilities — even if the groundwater has actual or potential beneficial uses, which is the case for most groundwater in the state. For example, the groundwater level may be higher than the bottom of the underground storage tank. If this groundwater has an actual or potential use, the tank operator would have to use Monitoring Alternatives 1 or 5. Alternative 1 would require the closure of a facility (e.g., retail service stations) once a month, which is impractical, and the technology required for Alternative 5 is far from fool-proof. Union believes that this problem could be corrected by simply adding language at the end of the above-quoted text to read:

> "Groundwater monitoring may be utilized as a primary means of monitoring when the groundwater does not have actual, potential or beneficial uses, <u>or if it is the only practical means of monitoring as determined by the local agency.</u>"

5. Cathodic Protection

A prior draft of these proposed regulations allowed steel tanks to be protected by either a cathodic protection system or a corrosion-resistant coating. Subsection 2635(b)(4) has been revised and now requires that steel tanks with or without coatings have a cathodic protection system installed. Coated steel tanks are corrosion-resistant and very expensive. The additional cost of cathodic protection for such tanks far exceeds any additional protection against corrosion. Union suggests that a steel tank clad with glass fibre-reinforced plastic be exempted from cathodic protection system requirements as long as there is a warranty by the manufacturer that the tank is corrosion-resistant. This would provide for the necessary amount of protection without an undue expenditure of resources.

6. Soil Testing

Union believes that soil testing should only be used to determine whether hazardous substances currently stored in an underground storage tank are present in the area around the tank and whether such substances came from the underground storage tank. The Board also directed the staff to refrain from "historical testing". Therefore, we suggest that subsection 2645(k) be changed to read: "Samples shall be analyzed for one or more of the most persistent constituents that are stored in the underground storage tank." The remainder of the subsection should be deleted.

7. Compliance Deadline

Testimony before the SWRCB at the previous public hearings on this proposal repeatedly emphasized the near impossibility of meeting the July 1, 1985, compliance date for installation of an approved monitoring system. The compliance problems created by an insufficient pool of qualified labor, an inadequate supply of materials, and delays in the adoption of these regulations has placed many companies in the position of facing facility closure because they are unable to meet the compliance deadline and receive a permit to operate.

Union believes that the SWRCB could alleviate this problem with a new subsection patterned after Section 2641(c)(8)(A). This new subsection should require some interim monitoring (tank testing) to be performed by July 1, 1985, with the rest of the monitoring options to be phased-in over the following two years. Union's concern is that, absent any change in the compliance date by the Legislature, the resources of the SWRCB and staff will be consumed by the necessity of dealing with non-compliance situations caused by the tight schedule, rather than devoted to implementation of measures that will improve protection of the groundwater.

Union is hopeful that these comments and those of the many other affected parties will aid the SWRCB in its efforts to adopt workable regulations governing the underground storage of hazardous substances. Union requests that the foregoing comments be made part of the written record on this issue and that the SWRCB supply us with copies of any new or modified regulation that is proposed or promulgated as a result of any public comment and hearing process.

If you have any questions concerning Union's comments or would like to discuss these issues further, please feel free to contact Howard Platt of our 76 Division Marketing Staff at (213) 977-7533 or Grant Frost of my staff at (213) 977-7699.

Very truly yours,

Patricia M. O'Toole

Patricia M. O'Toole

139-C

California Manufacturers Association

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COMMENTS OF THE CALIFORNIA MANUFACTURERS ASSSOCIATION ON THE REVISED SUBCHAPTER 16 REGULATIONS RELATING TO UNDERGROUND STORAGE TANKS

NOVEMBER 27, 1984

The California Manufacturers Association is pleased to comment on the revised Subchapter 16 regulations relating to underground storage tanks. Staff has made a number of significant improvements in the regulations from the initial proposal. Since the Association submitted extensive comments on the original version, these comments will focus on those major issues which have either remained unresolved or resulted from the revison process.

ISSUE 1. Lack of Phase-In Period To Implement Monitoring Requirements

The proposed regulations provide for a three year peiod in which small businesses or governmental agencies may implement a tank testing and inventory reconciliation program before being required to implement one of the other more complex alternatives. While we agree that this is an appropriate approach, we see no reason why it should necessarily be restricted to small businesses and governmental agencies. The statutory time frame to implement a monitoring program is exceedingly tight and it would significantly ease the burden of compliance if tank owners were allowed to begin a tank testing and inventory reconciliation program prior to installing a more extensive alternative. It would also provide the benefit of allowing tank owners to focus on those tanks which are actually an immediate problem rather than initially committing resources to those tanks which are not a problem.

ISSUE 2. Visual Monitoring Requirements Are Overly Burdensome And Unnecessary

While the proposed regulations now allow for visual monitoring of both existing and new underground tanks, the requirements for this alternative are unnecessarily extensive. For example, the regulations require that "...all exterior surfaces of a tank and the surface of the floor immediately beneath the tank..." be accessible for inspection. This makes no sense when one considers a tank in a vault sitting on the floor or a tank on the floor of a basement. Although the bottom of the tank and the floor immediately below the

tank cannot be seen, any leak would flow out onto the floor and be immediately visible. We also question the need to require visual monitoring on a daily basis, particularly in the case of new tanks. We feel that weekly monitoring would provide adequate protection and would ease the compliance burden.

The regulations would exempt facilities from the visual monitoring requirement if certain criteria are met. Among these are a situation where the individual doing the inspection would be required to use protective equipment. While some operators may wish to use this exemption, others may wish to implement a visual monitoring program. We feel that the exemption should be optional.

ISSUE 3. A Number Of Provisions Require Fine Tuning

While significant progress has been made in the regulations, a number of provisions still require work before the regulations become final. A brief discussion of each is provided.

Sections 2632(d)(2) and 2632(g) require a response plan to be developed by the tank operator. We question the Board's authority to require a response plan.

Section 2640(e) specifies that the requirements contained in Chapter 4 are minimums which can be raised by the local agency. We believe this to be inconsistent with the Health and Safety Code provisions specifying methods by which a local agency may require additional standards.

Section 2643(g) requires that the results of any nonmandatory tests made by the operator to be given to the local agency. We question the need for this. Requiring that the results be made available on request would be sufficient.

Section 2641(c)(5) specifies an alternative monitoring technique allowable for motor vehicle fuels. We feel this alternative should be allowed for all tanks if acceptable to the local agency.

Section 2672(b)(4) requires the previous owner of an underground tank to identify its future reuse to the local agency. We question the Board's authority to require this as the intent of the law is to assure that the current owner complies with all applicable laws concerning the tank's use.

Section 2672(d) is inconsistent with the Health and Safety Code which specifies that a tank owner must demonstrate that no significant soil

contamination has occurred prior to closure.

Section 2691(a)(2) is inconsistent with the Health and Safety Code which requires that the local agency demonstrate by clear and convincing evidence that the additional standards are "...necessary to adequately protect the beneficial uses of the waters of the state...". By requiring that the local agency demonstrate that the additional standards are necessary, for any reason, and that they adequately protect the waters of the state, the staff has significantly changed the intent of the law.

Respectfully Submitted,
Hank Martin, Manager,
Environmental Quality

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COMMENTS OF THE

CALIFORNIA MANUFACTURERS ASSOCIATION

ON THE PROPOSED STATE WATER RESOURCES CONTROL BOARD

SUBCHAPTER 16 REGULATIONS

Respectfully submitted,
HANK MARTIN, Manager
Environmental Quality

October 23, 1984

COMMENTS OF THE

CALIFORNIA MANUFACTURERS ASSOCIATION

ON THE PROPOSED STATE WATER RESOURCES CONTROL BOARD

SUBCHAPTER 16 REGULATIONS

INTRODUCTION

The California Manufacturers Association is pleased to provide comments on the proposed Subchapter 16 regulations, relating to the design, construction and operation of underground tanks storing hazardous materials. We recognize the seriousness and complexity of the issue and applaud the hard work and effort of the staff in developing the proposed regulations.

We do, however, have a number of significant concerns with the draft regulations. In particular, we feel that many of the requirements, such as those relating to monitoring existing tanks, contained in the regulations are unnecessary to accomplish the goal of the Board, to ensure that the public health is not threatened by unauthorized discharges of hazardous materials stored in underground tanks. Also, we feel that a number of the requirements are overly prescriptive, requiring specific actions by the owner or operator of an underground tank when a more general performance standard would be more appropriate.

In addition, we feel that in developing the proposed regulations, the staff has exceeded the authority granted it in Section 25288.2 of the Health and Safety Code. While this section mandates the adoption of specific regulations by January 1, 1985, and allows the adoption of others, many requirements in the regulations go far beyond the intent of the original

legislation. Finally, we have found a number of provisions within the regulations which duplicate the requirements of the original legislation, which are unclear or which are inconsistent with the enabling legislation.

The following is a detailed discussion of our specific concerns.

Article 1. General

We question the authority of the Board to allow local ordinances which meet only the requirements of Article 3 and Article 4 of the regulations to be exempted from the state program as specified in Section 2611 (a) (1). Section 25288 of the Health and Safety Code specifies that only those ordinances which, as amended, meet the requirements of 25284 and 25284.1 may be exempted. Allowing exemptions for ordinances which meet Article 3 and Article 4 of the regulations <u>or</u> Health and Safety Code Sections 25284 and 25284.1 exceeds the Board's authority and is inconsistent with the enabling legislation.

We also find that Section 2611 (a)(2), 2611 (a)(3), 2611 (a)(4), and 2611(b) duplicate the provisions of Health and Safety Code Section 25280(m). Section 2610 (b) duplicates Health and Safety Code Section 25284.2. Section 2611(a)(u) duplicates Health and Safety Code Section 25150.1.

Article 2. Definitions

The definition of "Hazardous Substance" refers to a master list developed by the Department of Health Services. We are unaware of the existence of this master list. This should be clarified. In addition, including the three sublists which are to be included in the overall master

list duplicates Health and Safety Code Section 25280 (c). We also believe that merely compiling the three sublists into a master list is inconsistent with the intent of Health and Safety Code Section 25280 (c), which states that a material on any of the three sublists shall be a hazardous substance unless "the department in consultation with the [Board], determines the substance could not adversly affect the quality of the waters of the state". Obviously the legislature was aware that not all of the materials on each sublist would be a threat. The regulations, however, indicate that the staff has not reviewed the lists to make an initial determination. In addition, there are no criteria by which a material may be exempted, and there is not even a process by which a material may be added, eliminated or modified from the nonexistent master list.

The definition of "local agency" is inconsistent with the definition contained in statute. Health and Safety Code Section 25280 (d) specifies that local agency means a ". . . department, office, or other agency <u>of</u> a county or city <u>designated</u>. . ." (underlining added), while the regulatory definition includes cities and counties.

The definitions of "motor vehicle" and "motor vehicle fuel" will create a situation in which one class of materials will be given special treatment while similar materials posing an equivalent risk will be treated differently. For example, new tanks containing Number 2 Diesel fuel, if intended for use in diesel automobiles, will be allowed to be operated under Sections 2633 and 2634 while a tank containing the same material, if the material is to be used for ocean vessels, would be required to be operated under Sections 2631 and 2632. The same inconsistency can be seen between gasoline tanks used for automobiles and those used for off road vehicles.

Our recommendation on this subject is to consider the material being stored, and not the use to which it is put. This approach would eliminate the inconsistencies contained in the proposed regulations.

The definition of "pipe" requires clarification. While the existing definition merely duplicates the definition found in Health and Safety Code Section 25280, we feel that it should be amended to exempt pipes utilized for venting, vapor recovery or other activities where the carrying of product is not involved.

We also feel that the definition of "substantially beneath the surface of the ground" requires revision. Under the proposed definition, a tank with a large diameter that is relatively low in height could be covered if it is even a few inches below the ground. Also covered would be tanks that are in the basement of a building, and tanks that are not actually underground but are set below grade for spill containment purposes. We feel that the definition should provide some reference to actual contact with the soil. Otherwise, we feel the regulations will be inconsistent with the intent of the original legislation, which was to provide a regulatory framework for buried tanks, not above ground tanks which happen to be situated below grade or tanks located in the basement of buildings.

We also believe that additional clarification of at least two other commonly used terms are needed. First, there is no definition of "daily", although the term is used throughout the sections on monitoring. We feel that where used the term should be specified to refer to operating days. Otherwise, facilities which are closed on weekends or other times would be required to make special efforts to monitor on these days, an effort we believe to be unnecessary.

Also, we feel that the definition of "unauthorized release" should be amended to include some deminimus levels. The Board is required to specify reportable quantities of spills to surface waters, and we see no reason why this should not also be done for tank discharges.

Finally, we find that a number of listed definitions merely duplicate those found in Health and Safety Code Section 25280. These are "board", "operator", "owner", "person", "pipe", "primarly containment", "product tight", "secondary containment", "single walled", "special inspectors", "storage or store", "tank", "unauthorized release", and "underground storage tank".

Article 3. New Tank Construction and Monitoring Requirements

A major concern with this section is the lack of consideration given to a very effective monitoring technique, visual monitoring. Although in Article 4 the staff would allow visual monitoring of existing tanks, and in fact states in the statement of reasons, "Visual inspection provides the most direct and reliable method [of monitoring]", Article 3 totally ignores this method. We find this to be inconsistent with the reasoning in Article 4. In addition, many of the other monitoring requirements contained in Article 3 would become unnecessary if visual monitoring was allowed.

Sections 2631(a) and (b) merely duplicate Section 25284 of the Health and Safety Code.

Section 2631 (c), which would require secondary containers to be constructed to contain a release for twice the maximum anticipated time necessary to remove the material is inconsistent with Health and Safety Code Section 25284(a)(2), which states that secondary containment "shall

be capable of storing, for the maximum anticipated period of time necessary for the recovery of any released hazardous substance". We also question the need for the extended time period, and the Board's authority to promulgate regulations directly in conflict with the enabling statute.

Sections 2631(d) and (c) merely duplicate Health and Safety Code Section 25284. However, Section 2631(c) provides a prime example of why the duplicative sections should be stricken. The 24-hour 100 year storm criteria contained in the original legislation, and duplicated in 2631 (e), has been amended in subsequent legislation to be a 24-hour 25 year storm criteria.

We find Section 2631 (f) to be inconsistent with Health and Safety Code Section 25284 (a)(3), and beyond the Board's authority to require. Health and Safety Code Section 25284(a)(3) specifies that secondary containment around a single primary container "shall be large enough to contain at least 100 percent of the volume of the primary tank". No distinction is made between secondary containment which is back filled and that which is not. Both must meet the 100 percent containment criteria. The 110 percent requirements of 2631 (f) is inconsistent and unnecessary.

Section 2632 (b) merely duplicates the requirement of Health and Safety Code Section 25285 and should be deleted.

We question the necessity of requiring a sloped floor connected to a collection sump in every case. For example, if visual inspection is allowed, any discharge would be detected and removed with no threat to the public health or groundwater. We view this section as being an unnecessary specific requirement, rather than a performance standard, and recommend its deletion.

We question the need for a specific standard in Section 2632(d), and recommend that it be revised to require construction consistent with normally accepted engineering practices.

We also question the need to install a continuous sensor in the sump, as required by Section 2632 (e). Intermittent checking, on a specified basis, would provide adequate detection of leaks. This is another provision which would be unnecessary if visual monitoring was allowed. We are also concerned with the specificity of the 0.5 inch sensing requirement. Would not a sensor capable of detecting one inch of liquid be adequate to ensure early detection in order to appropriately respond to the discharge? We feel a performance standard allowing the use of any detection method as long as early detection is assured should be substituted for this section.

We feel that Section 2633 (b), which requires primary containment for motor vehicle fuel tanks to be "product tight" is inconsistent with Health and Safety Code Section 25284(a)(7). This section states, "The design and construction of underground storage tanks for motor vehicle fuel storage need not meet the requirements of paragraphs (1) to (6), inclusive, if...". Since paragraph (1) of the Section contains the product tight requirement, it appears as though motor vehicle fuel tanks may be exempted if they comply with specified requirements.

Also, we feel that specifying the allowable construction materials for motor vehicle fuel tanks, as is done in Section 2633 (b), is duplicative of the provisions contained in Health and Safety Code Section 25284(a)(7).

We question the necessity of requiring hydrostatic testing of all new motor vehicle fuel tanks every two years, as per Section 2634 (a)(3). For example, double walled tanks would not need to be tested so frequently.

Also, NFPA pamphlet 329 recommends a 3 year testing program. This would be more reasonable, and would correspond to the 3 year inspection frequency required pursuant to Health and Safety Code Section 25283.4(a).

We also question the need to require a locked cap on each access casing, as is done in Section 2634 (b)(b). This would appear to be particularly unnecessary in the case of secure facilities.

Section 2634 (c), which requires each access casing to be equipped with a continuous sensor capable of detecting one-half inch of liquid appear to be overly specific and unnecessary. There is no need to require continuous monitoring of every motor vehicle fuel tank, particulary when the operators would also be required to perform daily inventory control and test the tank every two years. Period 2 monitoring, per a schedule specified by the local agency, would be more appropriate.

The requirement in Section 2634 (d)(1), that a daily loss or gain of 20 gallons is cause to implement the steps described in 2634 (e), appears to be overly strict, particularly when one considers that a one eighth of an inch change in a 10,000 gallon tank is roughly equivalent to a 20 gallon change in volume. We would recommend that this be revised to 100 gallons or 5% of the daily throughput, whichever is greater.

We have some concerns with the feasibility of performing all of the steps described in Section 2634 (e) within the prescribed time frames. For example, the requirement to review inventory records within two hours in Section 2634 (e)(2) be difficult to comply with. Also, it may be impossible to get trained inspectors within 24 hours, as required by Section 2634(e)(4). The same comment is true of the 48 hours given to test the tank in Section 2634(e)(7). At the very least, the Board should include a

provision specifying that if the operator has proceeded in good faith to ascertain the cause of the loss or gain, he is not in violation of these provisions.

We question the authority of the Board to require response plans as called for in Section 2634 (f). Although response plans may be appropriate, we do not feel that Health and Safety Code Section 25288.2 provides the authority to require them. In the Statement of Reasons, the staff asserts that the statutory requirement to "protect groundwater from releases" allows the imposition of response plans. The staff proceeds to assert ". . . the [secondary] container can be easily overtopped releasing hazardous substances to the subsurface waters", thereby demonstrating the need for the plan.

The staff's second assertion may be true if the groundwater in question was at a level directly below the tank. However, since this is rarely the case, and since the secondary container is required to activate an alarm, in the vast majority of cases an overflow of the secondary container can be adequately addressed even without a response plan.

Section 25288.2 of the Health and Safety Code requires the Board to develop regulations implementing the provisions of various sections including 25284. Staff relies on Section 25288.2 for its authority to require a plan pursuant to Section 25284(a)(7). This latter section, however, refers to monitoring systems. It is difficult to see where the authority for response plans is found.

Section 2635 (b)(1) requires a 0.25 inch steel striker plate to be installed under all accessible tank openings. We question the wisdom of requiring steel in all tanks. For example, we can forsee a number of

problems if a steel plate were to be installed in a tank designed to hold phosphoric or other acids. We would recommend that this be revised to specify "chemically resistant".

Consistent with our comment on Section 2633 (b), we question the consistency of Section 2635(b)(2), which requires all manufacturers to guarantee their tanks to be product tight as they leave the factory, with Health and Safety Code Section 25284 (7), which appears to exempt motor vehicle fuel tanks from the product tight requirement.

Sections 2635 (b)(4),(5), and (6) all reference recommended standards of independent organizations, such as Underwriters Laboratories, American Society of Mechanical Engineers, Underwriters Laboratory of Canada, and the American Society for Testing and Materials. This results in a lack of clarity as some individuals may not be able to obtain these standards. In any event, it is difficult to comment on these standards as they are not included in the text of the regulations.

We question the need for a cover made of concrete, asphalt, or equivalent over every tank in 2635(b)11. A roof would provide equivalent protection from rainfall. Also, since the regulations apply to partially buried tanks as well as completely buried tanks, construction of a concrete or asphalt top is unnecessarily expensive. This section is also inconsistent with Section 2631(d)(3) of the regulations which specify secondary containment volumes for tanks exposed to rainfall. Finally, the term "water tight as possible" is very unclear.

Section 2635 (c)(1) specifies that all tanks be located a minimum of 10 feet away from adjacent structures unless a registered civil engineer approves a design. There is no need to specify the 10 foot separation or to

require that a registered engineer review and approve all alternative designs. A performance standard of normally accepted engineering practices would be adequate to ensure tanks are not subject to undue stress from surrounding structures.

We question the authority of the Board to require that all drawings, photographs and plans be submitted to the local agency, as required in Section 2635(c)(2). We also question the authority to require as-built drawings, although we agree that they probably should be prepared by the operator, and retained at the facilities for regulatory review as needed. Reviewing the reference sections provided in the regulations, Sections 25280 and 25288, we find no reference to any design or construction standards.

Section 2635 (c)(3) duplicates the provisions of Health and Safety Code Section 25284 (d).

We question the need for, and the authority to require that local agencies approve all methods of removing liquid from a secondary container. While this should be done carefully, and any hazardous materials handled pursuant to applicable regulations, there is no need to gain local approval. Clarification is also needed as to what is meant by "immediate" in this section.

We do not feel that continuous monitoring of the liquid level, as required in Section 2635 (f)(1), is a necessary part of an automatic overflow protection system. A sensor located at a given elevation within the tank could activate a shutoff valve or alarm when the fluid level reaches it and provide adequate protection from overfill. There are a number of other options which can do an adequate job. This section should be replaced

with a performance standard and the operator and local agency allowed to determine if a given proposal is adequate.

Section 2635(g)(1) specifies that in order to satisfy the overfill protection requirement without an automatic system, the operator must visually monitor the filling operation. This is unnecessary. In many instances, deliveries are made during hours when the business is closed. The delivery operator or another responsible individual should also be allowed to visually monitor the filling process.

We are also concerned with the provision in Section 2635 (g)(2) which would require that the available capacity of the receiving tank be 110 percent of the capacity of the entire delivery tank. Requiring this extra tankage is unnecessary. If the Board wishes to specify that the receiving tank capacity must be large enough to contain the amount of product to be delivered, this would be reasonable.

We also question the need of requiring that all steel tanks be protected, either cathodically or by coatings. Since the definition of what is covered makes no reference to soil contact, tanks in vaults would be required to be protected, an unnecessary expense. In addition, since soil types vary widely, protection is not necessary in every case, as pointed out in the statement of reasons, ". . . it is common practice to require corrosion protection for a soil resistivity or 10,000 ohm-centimeters or less. . .". We feel 2635(h) should be revised to specify corrosion protection only when merited by soil resistivity. The testing program required for tanks will address the concern raised in the Statement of Reasons of changing soil conditions.

Finally, we question the need for a registered corrosion engineer to

approve all types of protection.

Article 4. Existing Underground Storage Tank Monitoring Criteria

General Comments

Of all of the requirements contained in the proposed regulation package, we feel those contained in this article to be the most onerous. In our opinion, the staff has greatly exceeded the authority granted the Board in the enabling legislation, developed regulation completely inconsistent with the indent of the original law, and have imposed a number of unnecessary standards which will result in massive costs with no commensurate environmental benefit.

The staff has taken the requirement to adopt regulations concerning the monitoring of existing tanks and used it as an opportunity to impose such stringent requirements that many operators will have no choice except to close their tanks. In addition, the staff has taken a leak detection program and converted it into a remedial action program for clean-up of past releases, rather than focusing on the objective of active and future releases.

Section 25288.2 of the Health and Safety Code requires the Board to develop standards implementing a number of provisions of law, including Health and Safety Code Section 25284.1. This section states that the owner shall provide visual monitoring whenever practical and that the local agency may require alternate monitoring. A number of options are then discussed. The intent of this section was to provide that the Board develop a number of alternatives, based on the material being stored, the type of tank, the geology of the given area, and any other factor the Board felt

should be considered. The owner and local agency would then choose the appropriate method.

The proposed regulations, however, do not provide for alternatives, except through an expensive and lengthy variance process. Rather, staff has identified every measure currently utilized for monitoring purposes, and has required the tank owner to implement each method. For example an owner of a single tank could be required to perform daily visual monitoring, test the tank yearly, perform daily inventory control, implement soil testing, install a vadose zone monitoring system and drill three groundwater monitoring wells. We believe these requirements to be inconsistent with the intent of the original legislation, and beyond the authority granted the Board.

In addition, we feel these multiple requirements are not necessary in every case. While we agree that there may be conditions under which the monitoring program contained in the regulations would be necessary to assure groundwater protection, we also believe that there will be situations in which a much lower level of protection would be adequate. It is for this reason that the enabling legislation established a process under which the Board, with its technical expertise, would develop alternatives and the local agency, with knowledge of local conditions would specify which would be required.

We also question the authority of the Board to transform a prospective law into a remedial action program. The introduction to the enabling legislation states, "It is the intent of the Legislature . . . to establish orderly procedures that will insure . . . that existing tanks be properly maintained, inspected and tested . . .". We find no authority for the Board

to utilize this law as the basis for a systematic statewide soil and water characterization program. While this may be an admirable goal, separate authority is necessary for the Board to implement a program such as this. If the Board believes it has the authority under some existing statute, that statute should be properly referenced.

Finally, to conclude our general comments on the overall thrust of this section, we would like to focus on a statement made by staff in their Statement of Reasons which attempts to justify the multiple monitoring requirements. Page 4.3 states, "In order to provide a level of protection. . .[for]. . . existing tanks that is comparable to the protection provided . . .for new tanks . . .". We see no evidence that the Legislature intended existing tanks to meet the failsafe protection standards provided by double containment in new tanks. If this were the case, there would not be separate sections treating new and existing tanks differently. At the very least, legislative intent would have been included specifying this desire. Instead, the Legislature recognized the practical differences in implementing a management program for new and existing tanks and promulgated separate standards.

The following is a more detailed discussion of our concerns with specific sections of Article 4.

Specific Comments

Section 2640, Applicability, contains significantly more than a statement as to what Article 4 applies. Primarily, definitions of what constitute an acceptable monitoring system are found in this section. These provisions are more appropriate for following sections defining monitoring

systems.

We question the authority of the Board to require that a monitoring system be able to detect "historic unauthorized releases". Although this may be a desirable goal, we feel additional authority is needed before it can be required. Section 25284.1 of the Health and Safety Code states, ". . . the owner shall outfit the facility with a monitoring system capable of detecting unauthorized releases of any hazardous substances stored in the facility . . .". Viewed in conjunction with legislative intent language which states, "The legislature has previous enacted laws. . . providing the means to clean up releases of hazardous substances . . .", and, "The Legislature therefore declares that it is in the public interest to establish a continuing program for the purpose of preventing contamination from, and improper storage of, hazardous substances stored underground", it is apparent that the legislature intended this to be a prospective program, not one in which all tank owners would be forced to determine if, and to what extent, any historical releases occurred.

We also question the consistency of requiring that a monitoring system be capable of measuring groundwater directly with the provisions of Health and Safety Code Section 25284.1. This section specifies that the monitoring system be capable of "detecting unauthorized releases", not of measuring groundwater directly. Groundwater monitoring is listed as a potential alternative method, which may be required by the local agency, as long as the local agency's requirement is consistent with the Board's regulations. We see no authority for the Board to require ground water monitoring.

Sections 2640(b) and 2640(c) also address the issue of past releases, with 2640(b) stating that an objective of the monitoring program is to

determine if an unauthorized release "occurred in the past," and 2640(c) requiring that the monitoring system "be capable of determining if prior use . . . has resulted in an unauthorized release". Once again, we question the Board's authority to implement a remedial action program based on the enabling statute and assert that to do so is in direct conflict with the intent of the legislation. In addition, we question the Board's authority to authorize local agencies to approve alternative methods of determining if past releases have occurred, as is done in Section 2640(c).

We question the authority of the Board to require specific monitoring systems in addition to visual monitoring, as specified in Section 2640(d). Section 25284.1 of the Health and Safety Code requires the operator to install a leak detection system and also requires implementation of visual monitoring where practical. It also authorizes the local agency to require additional monitoring, as long as the requirement is consistent with the Board's regulations. Although Health and Safety Code Section 25288.2 allows the Board to adopt regulations implementing Health and Safety Code Section 25284.1, the limits to the Board's authority are contained in 25284.1. We see no authority for the Board to require specific monitoring alternatives in addition to visual monitoring.

We have much the same comment on Section 2440(e), which would require those owners who cannot implement visual monitoring to implement each alternate specified measure. Once again, the staff has taken a mandate to develop a range of alternatives, from which the local agency and operator would choose, and used it to require specific actions. We believe this section to be beyond the authority granted the Board, inconsistent with Health and Safety Code Section 25284.1, and unnecessary

to protect the waters of the state and the public health and welfare.

We must disagree with the staff arguement that the inherent deficiencies in each individual monitoring approach require a combination of methods to be used in every case. While there will be situations where multiple monitoring procedures should be used, the determination of which and how many is appropriately case by case. Factors such as the age of the tank, soil conditions, the material being stored and the geology and hydrogology of the geographic area must be considered. We assert that there will be many instances in which a local agency would determine that a monitoring program consisting of less than the combination of all alternatives prescribed in the proposed regulations would be adequate to protect the waters of the state and the public health.

We also question the Board's authority in Section 2640(e) to specify that the soils monitoring requirements may not be waived. As previously stated, the intent of the enabling legislation was to have the Board develop alternatives from which the local agency could choose, based on factors previously discussed. Specifying that this requirement cannot be waived is in conflict with this intent.

Section 2640(f) is inconsistent with Health and Safety Code Section 25284.1, which allows local agencies to require additional monitoring methods where these methods are consistent with the Board's regulations. Since these agencies are already provided this ability, there is no need to require that requests for alternate monitoring procedures be subject to variance procedures.

We question the Board's authority to require groundwater monitoring on every tank, as is done in Section 2640(g). As stated previously, this

decision is provided to local agencies in determining what additional monitoring techniques may be necessary. Also, as discussed previously, we see no need to require groundwater monitoring in every case.

We question the need to require daily visual monitoring as is done in Section 2641(c)(3). This requirement is based on the false assumption that any unauthorized discharge is an immediate threat to the groundwater. This assumption will be true in a number of cases, however it will be false in many others. The local permitting agency should be authorized to consider the conditions surrounding a tank and specify a frequency.

Section 2641(d) is unclear. Three actions to be taken if liquid is observed on or under the tank are specified. Their timing, it is stated, ". . . shall be based on the site specific situation . . ." Who determines what should be done and when it should be done? What criteria should be considered in making this determination? Also, we feel that Section 2641 (d)(1) should be revised to require identification of the observed liquid, rather than a laboratory analysis. There will be a number of circumstances in which a laboratory analysis is not needed to determine the identity of the liquid.

We question the authority of the Board to require the owner to provide the local agency with all results of the leak detection tests performed by the owner, as required in Section 2642(e). Section 25284.2 of the Health and Safety Code specifies that, "Records shall be kept in sufficient detail to enable the local agency to determine that the operator has undertaken all monitoring activities required . . ." In addition Health and Safety Code Section 25283.4 states that the purpose of the local agencies' inspections are to ". . . determine . . . whether the operator has monitored and tested

the tank. . ." *There would be no need to specify that the operator keep* records so the local agency may determine if appropriate monitoring had been done, or to specify that the inspection was to determine if testing has been done if the legislature had intended to require all results to automatically be transmitted to the local agency. The result of this requirement would be an unnecessary burden on the local agency to manage this paper flow.

Section 2642(f) requires clarification as to what should be done when the leak detection test indicates a product loss of less than .05 gph.

Section 2642(g) requires the tank owner to provide the results of any nonmandatory leak detection tests to the local agency. Our comments on the Board's authority to require this, made on Section 2642(e), are applicable here. Of course, these results should be made available on request of the local agency. In addition, we find this to be inconsistent with Section 25284.2 of the Health and Safety Code which specifies that the operator, not the owner, shall do the monitoring.

We believe that the exemption from inventory control described in Section 2643 (b) should be revised to allow an exemption if the substance or system is not susceptible to accepted metering technology.

We also question the need for daily inventory reconciliation. Once again, this appears to be based on the assumption that any release poses an immediate threat. As stated previously, we recognize that there will be circumstances where this is the case. However, there will be other situations where it is not. The local agency should be provided the authority to consider the applicable factors and local conditions and specify an appropriate frequency, if they wish to require it at all. This

requirement, identified as a potential alternative in Health and Safety Code Section 25284.1, has been made a requirement, conflicting with the intent of the enabling legislation.

The requirement in Section 2643(d)(3), that tank measurements be performed by the owner, operator or other managerial personnel is unnecessary and is an insult to many facility operators in the state. To state that measurements are typically left to the employee who has ". . . the least to lose . . ." in the case of a loss indicates that the Board staff feels that industry will not approach this responsibly. This requirement is based merely on staff bias and conjecture and should be deleted.

Section 2643(e) would rely on wholesale meter deliveries to determine if a gain or loss has occurred. Our association feels that this is inappropriate due to the potential inaccuracies of metering.

We once again question the authority of the Board, under the referenced statutes, to require all tank owners or operators to determine if any unauthorized discharges have occurred in the past, as is attempted in Section 2644(a).

We also question the need to require that a registered civil engineer, registered geologist or certified engineering geologist log all borings and classify all soils. Prescribing that this be done under the supervision of one of these individuals would be adequate to ensure professional results.

We question the Board's authority to require what is essentially a site characterization, as specified in Section 2644(e)(3). We are not aware of any provision in the enabling legislation that allows the Board to require a site owner to perform soil sampling or testing. While the Department of

Health Services has very broad powers in the case of an emergency under Chapter 6.5 of the Health and Safety Code, in nonemergency situations the agency must perform the analyses, not the operator. If the Board feels it has the authority to require site characterization, it should be referenced.

While we agree that all wet zones be accurately noted, as required by Section 2644(e)(5) we are concerned that drilling through these wet zones may result in vertical movement of contaminants which may be in the wet zones.

We question the Board's authority to require vadose zone monitoring in all cases. Once again this appears to be beyond the authority granted the Board in Health and Safety Code Section 25288.2, to develop regulations implementing Health and Safety Code Section 25284.1, and inconsistent with the intent of the latter section. To repeat, the intent of the enabling legislation was that the Board would develop a number of potential monitoring alternatives and the local agencies would determine which best fit their local conditions. While we agree that vadose zone monitoring may be appropriate in certain cases, it will not be necessary for every tank in the state.

If vadose zone monitoring is required by a local agency, we see no need why it should be mandatorily continuous or weekly. The local agency should, based on applicable factors, determine the appropriate frequency.

We question the Board's authority to require groundwater monitoring of all existing tanks. We also question the wisdom of this requirement. As has been stated for each of the other monitoring methods, groundwater monitoring should be a <u>option</u> which may be chosen by a local agency. For the Board to require it is beyond its authority and inconsistent with Health

and Safety Code Section 25284.1.

In addition, we feel that the requirement that three groundwater wells be used, where required by the local agency, is inconsistant with Health and Safety Code Section 25284.1 which states, "A groundwater monitoring well or wells. . .". Obviously the legislature recognized that local conditions would result in varying requirements, a point not considered by the staff in its blanket requirement.

Finally , we are concerned that this requirement may cause more problems then it solves. According to Michael Campos, in a presentation on September 24th in Los Angeles, the Board estimates that there are nearly 200,000 tanks in the state. Simple arithmetic indicates that the requirement of 2646(e)(1) may result in 600,000 wells being drilled into the groundwater. Each of these wells, if not drilled correctly, represents a potential pathway for surface or vadose zone contamination to travel into the groundwater. When one considers that each of these wells must be drilled by July 1, 1985, the potential for mistakes in drilling rises due to the speed in which they must be completed.

The assurance groundwater monitoring requirement contained in Section 2647 is subject to our same basic comment: it is not an alternative as required by Health and Safety Code Section 25284.1, but a mandatory action. As such, it is inconsistent with this section and beyond the Board's authority to require.

We are also concerned with the requirement in Section 2647(f) that, if assurance monitoring is specified by the local agency, the operator must analyze for all constituents stored in the tank as well as all degradation or transformation products. We see no need, as a first activity, to analyze

for individual components. The Board should allow an initial screening for contamination with requirements to identify specific components if the initial screening is positive.

Article 5. Release Reporting Requirements

Section 2651 (a) duplicates the requirements of Health and Safety Code Section 25284.3.

Section 2652 (a)(1) duplicates the provisions of Health and Safety Code Section 25284.4.

Requiring in Section 2652(b) that the operator or permittee notify the local agency, Office of Emergency Services, and Regional Water Quality Control Board is inconsistent with Health and Safety Code Section 25284.4(a) which requires the operator or local agency to report the release.

Section 2652(c), (e), and (f) duplicate Health and Safety Code Section 25284.4.

We question the Board's authority in Section 2652(g) to allow any government agency to require the operator to perform site characterization studies. As stated previously, we are unaware of any agency with this authority. If the Board feels it has this authority, it should be properly referenced.

Article 7. Closure Requirements

Section 2671(b)(1) states that "all" residual materials must be removed during temporary closure and that any flammable vapors must be "completely" purged. Does the Board mean that cleaning be done down to eliminate any detectable levels of the material, or would cleanup or purging below safety levels, as we would recommend, be acceptable. This requires clarification.

We question the need to continue all monitoring except visual during temporary closure, as required by Section 2671(c). Staff's argument that a leak may not be detected until long after it occurs appears to be somewhat weak. If one reviews the requirements of Article 4, multiple requirements whihc, according to the Statement of Reasons," . . . achieve the monitoring objectives and . . . compensate for inherent weakness in the monitoring systems" are specified. Obviously, the staff believes Article 4 to be adequate to detect leaks. Therefore, we feel that a less stringent temporary closure monitoring requirement is justified.

We also believe that the requirement to continue all monitoring is inconsistent with the intent of the original legislation and beyond the Board's authority to require. Section 25286(b) of the Health and Safety Code clearly allows an exemption from the prescribed monitoring requirements upon a showing by the operator of a number of facts. The regulations do not allow for this. In addition, even if the operator is required to continue monitoring, by not demonstrating the required facts, this monitoring is monitoring which should be required by the local agency, not by the Board. As stated numerous times previously, Section 25284.1 of the Health and Safety Code requires the Board to adopt monitoring alternatives from which

the locals would choose, not to mandate specific requirements.

Our previous comments concerning the clarification of the terms "all" and "completely" apply to Section 2672(b)(1) and 2672 (b) (2).

We question the need for the requirement contained in Section 2672(b)(4)(B) that the owner of an existing tank identify the tank's future destination and use if the tank is sold. The Statement of Reasons states, "It is the tank owner's responsibility to assure that the tank being closed isn't destined for incompatible future use and this information must be submitted to the lead angency for verification". A review of Section 25286 of the Health and Safety Code, the section dealing with tank closure, reveals no such requirement or even indicates that the legislature consider it. In fact, the entire thrust of the law is for the person who will use the tank to ensure that the tank is to be used properly and that the tank meets the requirements of the law. Thus, there are testing, monitoring and construction requirements with which the owner must comply. To force the person who is no longer going to use the tank to research the new owner's proposed use of the tank is unnecessary and beyond the Board's authority.

Section 2672 (c)(1) states that "all" materials must be removed. Once again, this requires clarification. In addition, Section 2672(c)(2) states that all piping shall be disposed of as a hazardous waste. This is beyond the Board's authority to require. Title 22 of the California Administrative Code identifies what constitutes a hazardous waste and provides procedures for waste analysis. If the piping associated with a tank is a hazardous waste, as defined in Title 22, it should be disposed of as such. However, if it is not a hazardous waste, the Board cannot require that it be so treated.

Section 2672(d) is inconsistent with Section 25286(c)(4) of the Health

and Safety Code. The regulations state that the owner must demonstrate prior to closure, ". . . that no unauthorized release has occurred", while the Health and Safety Code states the owner must demonstrate ". . . that there has been no significant soil contamination resulting from a discharge . . .". This is a significant difference. Attempting to prove that there has never been an unauthorized release of even one drop of material would be impossible and bears no relationship to a public health threat. However, demonstrating that no significant contamination has occurred, allows for a determination as to the extent of the contamination and its potential for adverse effects of the public health or environment.

We also question the need to require soil sampling for every stored material and breakdown or transformation products as required by Section 2672(d). The Health and Safety Code requires, prior to closure, a demonstration that no significant contamination has occurred. While we agree that soil sampling may be used in the majority of instances for this demonstration, we feel alternative methods should be allowed. In addition, we feel an initial screening for potential contaminants should be allowed prior to a material by material analysis. If the initial screening proves negative, no further analyses are necessary.

Article 8. Categorical and Site Specific Variance Procudures

Sections 2681(b)(2), 2681(b)(3) and 2681(b)(4) duplicate the provisions of Health and Safety Code Section 25288.3.

We believe Section 2681(b)(5) to be inconsistent with Section 25288.3(a) of the Health and Safety Code. The regulations would require, as part of the variance request, the applicant to identify ". . . all local

agencies and persons who may be . . . interested in the variance request". However, the Health and Safety Code requires the Board to notify all " . . . affected cities, counties and city and counties". Obviously, it is the Board's responsibility to make the determination of who is affected, not the applicants. Also, by including all "persons who may be interested", the regulations become extremely unclear. Does a company then list all of its management? They are clearly interested in what occurs. How about listing all owners of similar tanks? Obviously, others will be interested since if one operator receives a variance they may wish to apply. Our recommendation is to delete this section.

We believe Section 2681 (b)(6) is inconsistent with Section 25288.3(d) of the Health and Safety Code. The Health and Safety Code allows the Board to assess a fee which is ". . . reasonable in covering costs in considering the application". It is our belief that the figure of $26,000 for a variance is far from reasonable.

The estimated cost is based on three assumptions made by the Board. First, it was assumed that each and every application would require 0.2SY. Second, it was assumed that each review would be done by an Environmental Specialist III. Finally, the staff has assumed that special Board meetings will be necessary and that they will cost $7,500 each.

The first assumption of 10 weeks (0.2SY x 50 weeks/year) to review an application appears to be somewhat inflated. Even if reasonable for an extensive variance request, this will vary depending on the complexity of the variance, the level of detail provided by the applicant, as well as other factors. We feel the Board staff should be required to track the time put into a given task and base the fee on what is actually done.

The same comment is true of the assumption that a specific job category will do the entire review. It is our belief that what will actually occur is that a mix of individuals, at differing billing rates, will participate in the review.

Finally, we do not feel that the cost of public hearings should be included in the fee. The Board has regularly scheduled meetings at which the variances could be heard. By not considering this option, staff has artificially increased the costs of the variance.

Section 2681(f) duplicates the provisions of Health and Safety Code Section 25288.3 relating to the Board's public hearings.

Sections 2682(b), 2682(c), 2682(d), 2682(e)(3), 2682(e)(4) and 2682(e)(5) duplicate the provisions of Health and Safety Code Section 25288.3(c).

We also question the cost factor associated with the site specific variance, as contained in Section 2682(e)(b). Our comments concerning the assumed review time, billing rates and special hearings of the regional boards also apply in this instance.

Ariticle 9. Addition Standards Request Procedures

Section 2691(a)(2) in inconsistent with Health and Safety Code Section 2528.3(b). The Health and Safety Code specifies that the local agency must demonstrate, by clear and convincing evidence that ". . . the additional standards are necessary <u>to</u> adequately protect the soil and beneficial uses of the waters of the state. . ." (underlining added), Section 2691(a)(2), however, specifies that the local agency must demonstrate by clear and

convincing evidence that ". . . the additional standards are necessary <u>*and*</u> would adequately protect the soil and beneficial uses of the waters of the state . . ." (underlining added).

The difference is a significant. Under the Health and Safety Code, the <u>only</u> acceptable reason to approve a local request would be if the additional standards were necessary to protect the soil and water. Under the proposed regulation, however, a local agency could impose additional standards if they were necessary for any reason, as long as the additional standards did protect the soil and waters. We recommend this section be deleted, as a revision would merely duplicate the Health and Safety Code.

Sections 2691(c), 2691(d), and 2691(e) duplicate the provisions of Section 25288.3(b) of the Health and Safety Code.

Article 10. Permit Application, Annual Report and Trade Secret Requirements

Section 2711(a), 2711(b)(1), 2711(b)(2), 2711(b)(3), 2711(b)(4) and 2711(b)(5) duplicate the requirements of Health and Safety Code Section 25283.2 In addition, we feel the requirements of Section 2711(b)(7) are inconsistent with Section 25283.2 of the Health and Safety Code. Although the Health and Safety Code Section states that the permit information requirements are not limited to those specified, it also states that the Board shall place the permit information on a computer for the purpose of data management. It is difficult to see how the requirement to include diagrams, or as-builts is consistent with this computerization requirement.

Sections 2711(b)(8) and 2711(c) duplicate the provisions of Section 25283.2 of the Health and Safety Code.

We question the authority of the Board to require lists of all materials previously stored in the tank as required in Section 2711(b)(9). As stated previously, the enabling legislation is prospective. This is illustrated by Health and Safety Code Section 25283.2(b)(3), which requires a list of all materials which ". . . are or will be . . ." stored in the tank. To require all materials stored in the past is inconsistent and beyond the Board's authority.

We question the need for a five year permit renewal. All tanks are required to be tested and monitored on an ongoing basis. Changes in ownership, operating conditions and materials being stored are required to be transmitted to the local agency. Every tank must be inspected at least every three years. In fact, the only reason to require a permit renewal is to continue permit fees to the local agency.

Our final comment concerns Section 2714(d), pertaining to trade secrets. We see no authority in the Health and Safety Code to allow the Board to essentially establish itself, the regional boards or local agencies in the judicial role of determining what is or is not a trade secret. If there is controversy over whether some piece of information is or is not a trade secret, there is adequate remedy in the courts.

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The voice of California industry for over 60 years

#140 HS

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PAUL D. GOODSON
Environmental Affairs Administrator
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MAILING ADDRESS: BOX 3249 TERMINAL ANNEX, LOS ANGELES, CALIFORNIA 90051

October 22, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

On behalf of the Southern California Gas Company, I appreciate the opportunity to comment on the Board's proposed regulations governing the underground storage of hazardous substances (23 CAC Sections 2610-2704).

SoCalGas recognizes the importance of staff's work in this field and supports the adoption of effective and fair regulations. In general, however, it is our opinion that the regulations as currently proposed go beyond those necessary to safeguard public health and the environment. We also believe that too often in the proposed regulations, prescriptive standards are imposed where performance standards could be employed to provide equal or better protection while providing greater flexibility to the regulated community.

Our specific comments follow:

1. Definition of "pipe":

   The definition of the term "pipe" found in Section 2620 of the draft regulations appears to be taken directly from the statute, as recently amended by AB 3565. In reproducing the statutory language, several words appear to have been left out inadvertently. The definition should read, in pertinent part, "any pipeline or system of pipelines which is used in connection with the <u>storage of</u> hazardous substances . . ." The regulations should be amended accordingly. If this omission was not made in error, SoCalGas requests clarification as to the reason for the change.

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2. Section 2631(e), Open-top storage facilities:

In defining additional secondary storage requirements for these facilities, this section refers back to itself (". . . Subsections (d) and (e) . . ."), and should be modified to delete the reference to Subsection (e).

3. Daily gauging requirement:

Section 2634(d)(1) requires a series of actions in response to a daily gauging discrepancy of more than 50 gallons. Because of the inherent inaccuracy of gauging, SoCalGas suggests the use of 100 rather than 50 gallons as the allowable daily gain or loss figure. Alternatively, in place of a fixed allowable discrepancy such as 100 gallons, the Board may wish to consider a gauging discrepancy based on tank volume, in which case SoCalGas would propose 1% as a reasonable value.

4. Leak detection monitoring:

Section 2644(g) calls for the installation of a leak detection monitoring system (defined in Sections 2645 and 2646) if the initial inspection of the tank does not identify an unauthorized release. Because of the effectiveness of visual monitoring, we propose that Subsection (g) be modified to read:

"If evidence of an unauthorized release is not detected, <u>and a visual monitoring program pursuant to Section 2640(d) cannot be implemented</u>, then a leak detection monitoring system . . ."

5. Responses to observation of liquids from visually monitored tanks:

Section 2641(d) requires owners or operators to take some or all of the specified actions in response to the observation of liquids on the surface of a visually monitored tank or directly beneath the tank. Subsection (d) specifies that the listed actions are intended to determine if the observed liquids constitute an unauthorized release. In the case of vaulted tanks containing petroleum substances, it is often possible to visually determine if an unauthorized release has occurred, without the aid of laboratory analysis or tank testing. Therefore, visual leak verification should be listed as one of the optional

actions under (d):

(1) Determination by visual means.

(2) Laboratory analysis . . .

(3) Testing . . .

(4) Removing . . .

6. Length of "provisional permits":

Section 2712(f) provides that local agencies may issue "provisional permits" for underground tanks that do not completely conform with the regulations' requirements respecting "New Tank Construction and Monitoring" and "Existing Tank Monitoring." As currently worded, the section states that a provisional permit may be issued for no more than three months, during which period the subject tank must be brought into compliance. No renewals or extensions are permitted. To expect that monitoring systems for all of the 200,000 existing tanks in the state of California can be installed within three months of the beginning of the permit process is unrealistic. The Board itself, in the fiscal impact statement for the regulations, acknowledges that "it will probably take five years before all monitoring systems are in place" (page 1 of the Fiscal Impact Statement).

In order to provide regulated parties with more realistic parameters within which to operate, SoCalGas proposes that Section 2712(f) be amended to provide for a one year initial term for provisional permits, with provision for six month renewals of such permits at the discretion of the local agency. Such renewals would be mandatory upon a showing by the permit-holder of reasonable progress toward compliance with Articles 3 and 4. Adoption of this amendment would allow local agencies the opportunity to monitor permit-holders' progress toward compliance while, at the same time, adding, through the renewal procedure, a measure of flexibility not currently present in the regulations. SoCalGas proposes that no limit be placed on the number of such extensions obtainable until the program has been in place for a length of time sufficient to determine reasonable time limits for attaining compliance.

We therefore propose that Section 2712(f) be amended to read, beginning at line 9:

~~These time schedules shall not extend beyond the duration of the provisional permit.~~ A provisional permit will be issued for no longer than ~~3~~ 12 months ~~and cannot be renewed or extended~~. The local agency shall, upon a showing by the permit-holder of reasonable progress toward compliance, renew the provisional permit for periods not to exceed 6 months per renewal.

7. Deadline for installation of monitoring systems:

The California underground storage statute, as recently amended, requires that all existing tanks be outfitted with monitoring systems capable of detecting unauthorized releases by July 1, 1985.1/ As noted previously, the Board itself has acknowledged that such a deadline is unrealistic and that a more accurate timetable would call for a five year compliance period. This unworkable statutory deadline threatens to place all regulated parties, even those making good faith progress towards compliance, in violation of state law within a matter of months. While the Board has it in its direct power to cushion the impact of such an occurrence through measures such as the provisional permit program (see our Comment #6, above), the fact remains that an unworkable statutory mandate is on the books. Although we recognize that the Board intended to receive comments on the proposed regulations, SoCalGas feels that this problem is of sufficient importance for the Board to make a serious effort to spur the introduction of legislation intended to revise the code and extend the deadline for the installation of monitoring systems on existing tanks.

Sincerely,

Paul D. Goodson

P.D. Goodson

1/ Because of a discrepancy between the wording of this requirement in two clean-up bills, AB 3565 and AB 3781, it is possible that the deadline currently in force is actually January 1, 1985.

140-B

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November 26, 1984

Mr. Harold Singer
Division of Technical Services
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95801

Dear Mr. Singer:

On behalf of the Southern California Gas Company, I appreciate this second opportunity to comment on the Board's efforts in developing regulations for the storage of hazardous substances in underground tanks. These comments apply specifically to the Board's revised proposed regulations, made available on November 9, 1984 (23 CAC Sections 2610-2704).

Staff is to be commended on their effort to respond to the extensive testimony received during the 45-day comment period. SoCal Gas recognizes that substantial changes have been made as evidenced by the current draft of the regulations, and feels that considerable progress has been made toward the goal of developing reasonable yet effective regulations.

Although many of our earlier points have been addressed in this latest draft of the regulations, several significant problems remain that we feel will be of general concern to the regulated community as well as of specific interest to SoCal Gas.

Our remarks on these issues follow:

1. Required responses to the observation of liquids on the exterior of new tanks under a visual monitoring program.

   Section 2632(c)(1)(D) of the proposed regulations specifies that owners or operators of new tanks being operated under visual monitoring programs take all or part of the listed actions in response to the observation of any liquid on the exterior of the tank or directly beneath the tank. The subsection explains that these actions are intended to determine if the presence of the observed liquid constitutes an unauthorized release. In many cases, such as when condensation forms on the tank surface or spilled liquids are known to have contacted the tank surface, it is possible and practical to meet the intent of this section by field

observation or analysis without resorting to laboratory analysis, tank testing, or removal of the contents of the tank. SoCal Gas therefore recommends that Section 2632(c)(1)(D)(i) be amended to read:

(i) Laboratory <u>or</u> <u>field</u> analysis of the observed liquid.....

We remind the Board that this language has already been added to Section 2642(d)(1), which specifies required responses to the observation of liquids on the exterior of a visually monitored existing tank. If the omission of this language from Section 2632 was not made in error, we request an explanation of the reasoning behind its omission.

2. <u>Allowable error for inventory reconciliation methods</u>.

Table 4.2 appearing in Section 2641(c)(5)(B)(v) lists the allowable accuracy of inventory reconciliation techniques where vadose zone, ground water monitoring, or soil sampling is not undertaken, with the clear intent that accuracy be a function of tank size. A typographical error appears to have been made in listing the allowable accuracy for tanks ranging from 4,000 to 8,000 gallons. Instead of 20 gallons, we believe the intended value was 50 gallons. If this was not done inadvertently, please provide an explanation of the basis behind the 20 gallon per day figure for tanks in this size category.

3. <u>Interim Alternative Monitoring</u>.

The Board recognizes that in certain circumstances, owners of existing tanks that cannot be visually monitored may not be able to implement one of the seven monitoring methods specified in Section 2641(c) within the time period required. In such cases, "interim" monitoring requirements are imposed for no longer than a 3-year period [Section 2641(c)(8)]. However, the only parties who may be considered for these interim monitoring alternatives under the present draft are small businesses, tank owners who will be closing their tanks within three years, and government agencies with severe budgetary constraints.

SoCal Gas applauds the Board's efforts to provide an alternative compliance approach where extenuating circumstances apply, but we do not believe that the Board's list of qualifying organizations can possibly provide regulatory relief in all of the cases that deserve it. As

an example, there may be non-governmental organizations such as public utilities that operate within similarly severe budgetary constraints, but yet would not qualify for relief under Section 2641(c)(8). We believe that it would be presumptuous to attempt to list all of the circumstances that merit application of the interim alternative monitoring provisions, and therefore propose the addition of a new subsection that reads:

> [Section 2641(c)(8)(A)(iv)] "Any underground storage tank owner with respect to whom the local agency finds that, due to extenuating practical circumstances, the owner needs additional time to implement one of the first 7 monitoring alternatives. The local agency shall not issue a permit allowing this monitoring alternative for longer than 3 years and shall not renew the permit."

4. Definition of Motor Vehicle Fuel Tanks.

The Board's proposed definition of motor vehicle fuel tanks was the object of considerable opposition during the previous comment period. It is our opinion that staff's response to these remarks, as it appears in the "Staff Report", is confusing and unsupported (Staff Report, pp. 5-6). SoCal Gas agrees with the objecting commentors who argued that risks to water quality depend only on the composition of the stored substance and not on its intended use. We further argue that the definition contained in the proposed regulations is perhaps not as restrictive as staff believes, because, to use staff's own example, the owner of a drag strip with underground tanks storing nitromethane or nitrobenzene could legitimately claim that those materials were being used as motor vehicle fuels. Through a similar mechanism, methanol and other chemicals or substances could fall under staff's proposed definition.

Regardless of staff's interpretation of the Legislature's intent, we point to the basic underlying purpose of the Subchapter 16 regulations, as stated in Section 2610(a): "The regulations in this subchapter are intended to protect waters of the state from discharges of hazardous substances from underground tanks." This objective clearly speaks in terms of the hazardous properties of certain substances, not of the uses to which such substances are put. SoCal Gas maintains that the definition most consistent with this objective is one that would define motor vehicle fuel tanks as those tanks containing any of a listed set of fuels.

Allowable fuels would include gasoline and No. 2 diesel, and might include kerosene (jet fuel) and others. Definitions for allowed fuels could easily be made tight enough to exclude any undesirable materials (such as nitrobenzene) from application of the special motor vehicle fuels' provisions. To do otherwise is to create an illogical and unfair regulatory program that does not meet the intent of Subchapter 16, protection of the waters of the State.

5. Requirement of daily visual inspections of new and existing visually monitored tanks.

Sections 2632(c)(1)(B) and 2642(c)(3) require that visual monitoring be undertaken daily at a minimum. In most cases, visual monitoring will be used where tanks are housed in vaults, cellars or basements, and where the exterior surface of the tank does not come into contact with soil, water or any other potentially corrosive medium. This situation is analogous to many circumstances where liquids are contained by vessels that have exterior contact with air only, and where the prevention of leaks is of the highest importance. As an example, the proper functioning of an aircraft hydraulic system is essential to the safety of the passengers and crew. These systems consist of metal reservoirs and lines not unlike vaulted underground tanks and associated piping. Yet, despite the fact that the integrity of these systems is of paramount importance and mechanics have daily access to commercial aircraft, these systems are not inspected on a daily basis. Undoubtedly, the reason for using an inspection interval of longer than one day is that corrosion, the process by which most underground tanks develop leaks, is a lengthy process. The corrosion process is so slow, in fact, that an inspector conducting daily visual inspections of an underground tank could become so accustomed to the gradual change developing before him that it may very well go unnoticed until a leak actually occurred. An inspection schedule with longer inspection periods would provide a greater chance that problems would be observed before leaks actually occurred.

Aside from the fact that longer inspection intervals may actually afford greater protection, SoCal Gas feels that the burden placed on regulated parties by a daily inspection requirement far outweighs its potential benefit to water quality. This comment applies in particular to owners of unmanned facilities that are not visited on a daily basis, and to owners of large facilities that contain numerous

tanks. In the vast majority of cases, visual monitoring conducted once monthly would serve to provide as much, if not greater advance notice of an impending leak than daily monitoring. In those special situations where circumstances dictate more frequent inspections, the responsible local agency should be given the discretion to require such inspections when issuing a permit. Therefore, SoCal Gas recommends the following amendments to the relevant sections:

2632(c)(1)(B):

"(B) Visual inspections shall be performed ~~daily except on weekends and recognized state and/or federal holidays~~ monthly, and ~~may~~ shall be more frequent if designated by the local agency....."

2642(c)(3):

"(3) Visual inspections shall be performed ~~daily~~ monthly at a minimum, and shall be more frequent if ~~necessary~~ designated by the local agency....."

6. A typographical error appears to have been made in Section 2634(e); "...procedures specified in subsection (e) of this section...", should read "...procedures specified in subsection ~~(e)~~(f) of this section...".

7. Section 2712(e) establishes the time frame in which local agencies must issue permits for all existing underground storage tanks in their jurisdictional areas. The proposed regulatory language speaks to the issuance of permits within 18 months of the establishment of a program implementing the Subchapter 16 regulations. The intent of this language is unclear, since a variety of interpretations could be applied to the question of what constitutes the "establishment of a program". In the interest of consistency, SoCal Gas suggests that the Board develop criteria that must be met by all local agencies prior to the acknowledgement that a program has been established and the start of the 18-month clock. Such criteria should include at a minimum, the passage of an ordinance implementing the Subchapter 16 regulations (where applicable), the issuance of guidelines for compliance, and the issuance of permit application forms.

8. Applicability of State and Local programs.

SoCal Gas requests clarification on the applicability of the state's underground tank regulations in incorporated cities lying within the boundaries of counties that have pre-empted state regulations by adopting their own underground tank ordinances prior to January 1, 1984. These cities may be asked by their county officials to comply with the program established by the county. On the other hand, such cities may argue that imposition of the county program is unfair, because when making the decision to adopt their own ordinance or enforce the state's program, they were not able to consider the ramifications of complying with their county's program, which was developed at a later date.

Sincerely,

Paul D. Goodson

Paul D. Goodson
Environmental Affairs Administrator
Southern California Gas Company

PDG:dej

140-C

SOUTHERN CALIFORNIA gas COMPANY

810 SOUTH FLOWER STREET • LOS ANGELES, CALIFORNIA 90017

PAUL D. GOODSON
Environmental Affairs Administrator
(213) 689-3560

MAILING ADDRESS: BOX 3249 TERMINAL ANNEX, LOS ANGELES, CALIFORNIA 90051

January 18, 1985

State Water Resources Control Board
Division of Water Quality
P. O. Box 100
Sacramento, CA 95801-0100

Gentlemen:

On behalf of the Southern California Gas Company, I would again like to thank the Board for this opportunity to comment on the regulations governing underground storage tanks proposed for codification in Subchapter 16 of Chapter 3 of Title 23 of the California Administrative code.

Compliments are due to staff for the considerable effort expended in very short time intervals for the preparation of this and the several other drafts made available for public review. I also find that the draft regulations are in general well organized and relatively easy to follow, given the nature and complexity of the topic they are intended to address. Unfortunately, it appears that pressures of time and staff availability have in this particular draft produced a number of consistency errors that are a most unwelcome distraction from what has previously been an accurately referenced document. I note as an example a most important addition to the definition of "motor vehicle fuel tank" ("...or fuel an engine") that failed to call attention to itself as a new addition in the current draft by not being double-underlined. In another portion of the draft, reference is made to Section 2634(f), a section that no longer exists. While it is possible in some of these instances to decipher the intent of the draft, the connection is more easily lost in others and the risk of misinterpretation becomes significant.

SoCal Gas acknowledges the Board's sensitivity to the needs of the regulated community, and recognizes the Board's responsiveness to our earlier submittals as evidenced by the changes appearing in the most recent draft of the regulations. There remain, however, several specific concerns that we would like to submit for the Board's consideration, as discussed below.

1. <u>Section 2633(c) - Technical Error</u>

It appears that language was inadvertently omitted from

Section 2633(c), which sets construction standards for new motor vehicle fuel tanks. As worded in the present draft, the section does not make sense. Any omitted wording should be restored to the draft.

2. Section 2641(c)(5) - Inventory Reconciliation, Tank Testing, and Pipeline Leak Detection as an Alternative Monitoring Method:

The state underground tank statute specifically authorizes the monitoring of existing motor vehicle fuel tanks by daily gauging and inventory reconciliation combined with periodic tank testing and pipeline leak detection (Cal. Health and Safety Code §25284.1(b)(3)). In implementing this provision, the draft regulations require that, should inventory reconciliation result in discrepancies exceeding the regulation's "allowable measurement error," the operator must follow procedures designed to determine whether an unauthorized release has occurred. The allowable measurement error values contained in the draft, however, are so unrealistically low that even the most carefully conducted manual reconciliation would result in constant resort to burdensome leak verification procedures. As a consequence, the draft regulations effectively preclude the use of a monitoring method expressly authorized by the governing statute. Because it is the Board's function to implement and not abrogate the provisions of the legislation, SoCalGas proposes that the regulation's allowable measurement errors be set at more realistic and attainable levels.

SoCalGas maintains that any such levels must include allowances for fluctuations beyond the control of the operator that might reasonably occur in practice. We recognize this to be the Board's intent in providing a 0.15% throughput factor for volumetric measurement error. However, changes in volume due to thermal effects can be extremely significant, and occur frequently in practice as a result of differences in the temperature of fuel being delivered and the temperature that this fuel may reach at a later time. Diurnal temperature fluctuations may also exacerbate these measurement uncertainties. To estimate the magnitude of this effect, consider the empirical correlation for thermal expansion:

$$V_t/V_0 = [1+At+Bt^2+Ct^3],$$

where V_t/V_0 represents the fractional volume change experienced for a liquid undergoing a temperature change from 0^oC (a reference temperature) to any temperature t in degrees Celcius. A, B and C are coefficients unique to each liquid.

For gasoline, $A = 1.038 \times 10^{-3}$, $B = 1.337 \times 10^{-6}$, and

$C = 0.403 \times 10^{-8}$. Using these coefficients to calculate the volume expansion effect for 10°C and 20°C, we find that

$$V_{10}/V_0 = 1.0105$$

and $$V_{20}/V_0 = 1.0213$$

and from these values we derive

$$V_{20}/V_{10} = 1.0107.$$

Therefore, a gasoline delivery at 20°C into an underground tank that later reaches a temperature of 10°C would experience a decrease in volume of 1.07%. For a 6,000 gallon delivery, an apparent volumetric loss of 64 gallons would occur, assuming absolutely no error in the technique used to estimate the volume of the delivery. The Board's recommended accuracy objective of 50 gallons for 4,000-8,000 gallon tanks would therefore in this example be completely unrealistic. To account for the influence of temperature on volumetric measurement accuracy, and to provide some allowance for error that may be inherent in the measurement method, SoCalGas recommends that the Board set its allowable measurement errors no lower than those appearing below for Table 4.2:

Tank Size*	Allowable Measurement Error*
less than 4,000	50
4,000 to less than 8,000	100
8,000 to less than 12,000	150
12,000 or greater	200

*all numbers in gallons

3. <u>Section 2641(c) - Interim Monitoring</u>

A. The Board recognizes that, in certain circumstances, owners of existing tanks that cannot be visually monitored may not be able to implement one of the 7 monitoring methods specified in Section 2641(c) within the time period required. In such cases, "interim" monitoring can be used for no longer than a three-year period (Section 2641(c)(8)(A)). In the current draft, however, the only organizations for which these interim monitoring alternatives may be considered are small businesses, tank owners who will be closing their tanks within three years, and government agencies operating under severe budgetary constraints.

SoCalGas applauds the Board's efforts to provide an alternative approach to compliance where extenuating circumstances

apply, but we continue to believe that the Board's present list of qualifying organizations does not provide regulatory relief in all of the cases that merit it. For example, the budgetary constraints imposed upon public utilities by the ratemaking mechanism of the California Public Utilities Commission are not unlike those faced by many government agencies. In fact, because of a recent change to a three rather than a two year rate cycle, the limitations on public utilities in attempting to meet the financial burden of compliance with the state's program will extend far beyond the 12-month time-frame applicable to most agency budgets. Furthermore, even if some utilities are able to shoulder these additional financial demands without immediate rate relief, California law precludes reimbursement for these expenditures in future rate cases.

At a minimum, therefore, SoCalGas proposes that local agencies be allowed to consider public utilities as candidates for interim monitoring, and proposes the addition of a new subsection that reads:

> [Section 2641(c)(8)(A)(iv)] "Any utility regulated by the Public Utilities Commission that demonstrates to the local agency that, due to budgetary constraints, the utility needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first seven monitoring alternatives of this subsection. The local agency shall not issue a permit allowing this monitoring alternative for longer than three years and shall not renew the permit."

B. Although SoCalGas recognizes the need for such relief from the statutory compliance deadline for small businesses, governmental agencies and public utilities, we believe that it would be impossible at this point to anticipate all of the circumstances that would merit such consideration. Because of this uncertainty, local agencies should be given broad discretion to grant interim monitoring permits to tank owners who can show a need for relief due to extenuating circumstances. We therefore propose a further addition to the regulations that reads:

> [Section 2641(c)(8)(A)(v)]. "Any underground storage tank owner with respect to whom the local agency finds that, due to extenuating practical circumstances, the owner needs additional time to implement one of the first 7 monitoring alternatives, the local agency shall not issue a permit allowing this monitoring alternative for longer than three years and shall not renew the permit."

4. Sections 2632(c)(1)(B) and 2642(c)(3) - Visual Inspection Requiements for New and Existing Visually Monitored Tanks:

For existing underground storage tanks that will be monitored by visual means, Section 2642(c)(3) requires that visual monitoring be undertaken daily at a minimum, and may be more frequent as designated by the local agency. A similar monitoring frequency is imposed on new tanks in Section 2632(c)(1)(B), except that monitoring is not mandated on weekends and holidays, and in the case of tanks in unmanned locations that also have low throughput rates, the local agency may reduce the monitoring frequency to no less than once per week. Although SoCalGas is pleased with the Board's recognition that certain circumstances may warrant monitoring on a basis less frequent than daily, we remain firm in our formerly stated conviction that local agencies should be allowed by the Board to exercise the full flexibility guaranteed them in the underground storage tank statute. The statutory treatment of this question makes clear the Legislature's intent to allow a visual monitoring frequency of up to 30 days at the discretion of the local agency. In no way does the statute require or suggest that the Board impose daily monitoring, or distinguish between tanks for visual monitoring purposes on the basis of their date of construction, or whether they exist at an unmanned location and have a low throughput. SoCalGas proposes that the Board imbue its Subchapter 16 regulations with the full flexibility provided in the statute by granting local agencies discretionary authority over the frequency of visual monitoring for both new and existing tanks. We remind the Board that empowering local agencies with the right to specify monthly monitoring in appropriate circumstances does not constitute a wholesale endorsement of monthly monitoring for all tanks, but merely provides essential flexibility for cases where it is deemed appropriate by the local authority.

By differentiating between new and existing tanks in terms of the absolute frequency of monitoring required, (daily for all existing tanks, but as much as 7 days for some new tanks), the Board appears to have made a finding that the secondary containment structure (typically a masonry or concrete vault), of an existing visually monitored tank affords a lower level of protection than that provided by a new structure. Although this argument is appealing, SoCalGas notes that properly maintained masonry and concrete structures are capable of providing high levels of containment for very long periods of time. Assurance that existing structures are initially sound and are thereafter properly maintained is provided by the pre- and post-permit inspection requirements already present in the regulations. In this light, it seems arbitrary and unfair that owners of existing storage tank vaults who have invested the expense and effort of proper

maintenance be penalized by not having access to longer monitoring intervals.

As currently written, the Board's proposed regulations not only do not provide the flexibility intended by the statute, but additionally do not appear to meet the test of need. In SoCalGas's previous submission on this subject, we noted that leak prevention from vaulted tanks is analogous to many circumstances where liquids are contained by vessels that have exterior contact with air only and where the prevention of leaks is of the highest importance. As an example, the proper functioning of an aircraft hydraulic system is essential to the safety of the passengers and crew. These systems consist of metal reservoirs and lines not unlike vaulted underground tanks and associated piping. Yet, despite the fact that the integrity of these systems is of paramount importance and maintenance mechanics have daily access to commercial aircraft, these systems are not inspected on a daily basis. Undoubtedly, the reason for using an inspection interval of longer than one day is that corrosion, the process by which most underground tanks develop leaks, is a lengthy process. The corrosion process is so slow, in fact, that an inspector conducting daily visual inspections of an underground tank could become so accustomed to the gradual change developing before him that it may very well go unnoticed until a leak actually occurred. An inspection schedule with longer inspection periods would provide a greater chance that problems would be observed before leaks actually occurred.

Even if it could be shown that longer inspection intervals did not actually afford greater protection, SoCalGas feels that the burden placed on regulated parties by a daily inspection requirement far outweighs its potential benefit to water quality. This comment applies in particular to owners of unmanned facilities that are not visited on a daily basis, and to owners of large facilities that contain numerous tanks. In the vast majority of cases, visual monitoring conducted once monthly would serve to provide as much, if not greater advance notice of an impending leak than daily monitoring. In those special situations where circumstances dictate more frequent inspections, the responsible local agency should be given the discretion to require such inspections when issuing a permit. Therefore, SoCalGas recommends that the relevant sections read as follows:

[Sections 2632(c)(1)(B) and 2642(c)(3)]:

"Visual inspections shall be performed ~~daily except on weekends and recognized state state and/or federal holidays~~ monthly, and may be more frequent if required by the local agency. ~~The local agency may reduce the~~

~~frequency-of-visual-monitoring-at-facilities-where personnel-are-not-normally-present-and-inputs-to-and withdrawals-from-the-underground-storage-tank-are-very infrequent.--In-these-instances,-the-maximum-inspection frequency-shall-be-no-less-than-once-per-week.~~ Specification of the monitoring frequency shall take into account....."

5. Sections 2632(c)(1)(A) and 2642(c)(1) - Visual Monitoring:

For both new and existing underground storage tanks that will be monitored by visual means, the draft regulations require that all exterior surfaces of the tank be monitored by direct viewing, including the bottom surface of the tank and the floor directly beneath the tank.

It is the intent of the governing statute to protect the waters of the State from discharges of hazardous substances. The use of visual monitoring as a means of providing this protection should, in the opinion of SoCalGas, have as its objective the prevention of unobserved discharges to the soils underlying the secondary containment structure of an underground tank. The Board has made a concerted effort to specify physical and construction standards for secondary containment. Among other things, these standards require that the material of construction for the secondary containment structure be impervious to the liquid stored in primary containment over a length of time significantly greater than that during which a leak would be detected by a (visual) monitoring program.

Because of the requirement that all sides of a tank and the surface of the floor underneath the tank be accessible by direct viewing, flat-bottomed tanks resting on the floor of a vault cannot be candidates for visual monitoring. SoCalGas argues that this category of tank has been excluded unnecessarily from visual monitoring, since any leaks eminating from the bottom of the tank would be observed on the floor of the vault at the perimeter of the tank well before any quantity of hazardous substance passed unobserved through the impervious secondary containment structure. SoCalGas therefore urges the Board to reconsider its visual monitoring requirements for inclusion of flat-bottomed vaulted tanks.

6. Section 2712(3) - Time Frame for Issuance of Permits:

SoCalGas continues to be concerned about the lack of guidance provided by the draft regulations to local governments and regulated entities as to the deadline for issuance of facility

permits. The proposed regulatory language requires issuance of permits within 18 months of the establishment of "a program implementing this subchapter". The intent of this language is unclear, since a variety of actions by local agencies could be interpreted as the "establishment of a program" (e.g., passage of an implementing ordinance, issuance of guidelines or regulations, or issuance of permit applications). So that both regulating and regulated parties might have notice of the deadline they face for completing the permitting process, SoCalGas again requests that the regulation be amended either to establish a specific deadline for issuance of all facility permits or, at a minimum, clarify the sort of local action needed to start the 18-month clock. In order to allow regulated parties ample time to comply, such action should include, at a minimum, issuance of local guidelines and distribution of application forms.

7. Section 2650(b) - Release Reporting Requirements:

The state statute separates releases of hazardous substances into two categories: (1) those that must be reported to the local agency ("reportable releases"), and (2) those that need only be recorded on the facility operator's monitoring reports ("recordable releases"). A release that does not escape from a tank's secondary containment, is cleaned up within eight hours, does not increase the hazard of fire or explosion, and does not cause deterioration of the secondary containment structure is classified by the statute as a "recordable" release (Cal. Health and Safety Code §25284.3). The draft regulations, however, further limit the applicability of the recordable release provision to releases from "new underground storage tanks", as defined. While a limited number of existing tanks may (under Section 2610(d)) fit within the definition of "new tanks", a far greater number of such tanks, including many that provide secondary containment, do not qualify as "new tanks". The governing statute clearly provides that a release from any tank, new or existing, that meets the statutory requirements may be considered a "recordable release". Therefore, SoCalGas asks the Board to recognize its responsibility to limit its issuance of regulations to those consistent with the statute by deleting the final sentence of Section 2650(b) from the regulations.

8. Section 2610(d) - Applicability of "New Tank" Standards to Existing Tanks

Section 2610(d) provides that owners of existing tanks (tanks installed prior to 1/1/84) that meet the "new tank construction and monitoring standards" of Article 3 may be issued permits pursuant to those standards. The Section 2621 definition of "new underground storage tank" also seems to contemplate the inclusion

of some existing tanks within its coverage. A number of the construction standards contained in Article 3 (e.g., see Sections 2635(b)(6), and 2635(b)(7)), cannot possibly be met by existing tanks in that they require that certain actions be taken before a tank is placed into the ground. If these sections were given a literal interpretation, they would preclude entirely the permitting of any existing tank under the new tank standards. In order to clarify that only the relevant construction standards of Article 3 must be met with respect to existing tanks, SoCalGas proposes that the second sentence of Section 2610(d) be revised to read as follows: "However, owners of existing underground storage tanks that meet the relevant construction and monitoring standards of Article 3 of this subchapter may be issued permits pursuant to the standards of Article 3....".

Sincerely,

Paul D. Goodson

Paul D. Goodson
Environmental Affairs Administrator
Southern California Gas Company

PDG:dej
cc: Ms. Roseanne C. Stevenson
Office of Administrative Law

Original Comments 141-150

#141 HS

MFASC

METAL FINISHING ASSOCIATION OF SOUTHERN CALIFORNIA INC.

October 19, 1984

California State Water Resources Control Board
P.O. Box 100
Sacramento, California 95801

Attention: Harold Singer, Division of Technical Services

Re: Proposed Regulations Dealing with Underground Storage of Hazardous Substances

Dear Mr. Singer:

The Metal Finishing Association of Southern California is composed of 185 member companies performing metal finishing (electroplating, painting, honing, deburring...) in the job shop sector. The average company has 20 employees (80% of which are minority) and sales of $259,000 per year.

After reviewing the proposed regulations we strongly urge you to reconsider the thrust of the permit program due to the severe financial impact it would impose upon our industry.

Our members have recently been forced to meet the Federal Wastewater Pretreatment Regulations for the electroplating job shop industry (which EPA concedes will force 19-25% of the industry to close). Your proposed regulations will cause the majority of our members to completely rework their entire pollution abatement system at a cost which could be devastating.

We urge the Board to take another direction which will achieve the protection of the states ground water without imposing such a Draconian effect upon a vital industry.

If you have any questions please contact Mr. Jerry Desmond, our legislative advocate at 916-441-4166.

Sincerely,

William D. Wiggins
Chairman, Government Affairs Committee

Received DTS
OCT 23 1984

WDW/jb

cc: Jerry Desmond

312 East Las Tunas Drive • San Gabriel, California 91776 • (818) 286-3123 NAMF

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Received DTS
JAN 4 1985

12/29/84

State Water Resources Control Board
Box 100
Sacramento, CA. 95801

"Storage Tanks"

Dear Sirs:

Assemblyman Sher's AB 1362 wasn't intended, the way you people are going about controls. I call it Regulatory overkill when you people drafted all the rules. The secondary containment, soil testing, vadose zone monitoring, and ground water monitoring. Rely on star wars technology when daily gauging + inventory reconciliation are adequate for the job.

The terms + proposed regs are too expensive, too rigid, and too redundant. We small independent owners + operators can't afford the price that we will have to pay for all these terms + conditions of these regs.

Under the proposed rules, if we will have to drill approx. 21 wells at each station and soil samples bores, creating upwards of 250,000 new holes in the earth's crust. We feel that all the holes will to conduit for contamination.

Your proposed variance application fee of $7,750 is so steep that few independent businessmen + women can afford it.

We need more reasonable variance fee + regs. Thank you. Ernest Setliff

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P.O. BOX 832 RIVERBANK, CA 95367

#142 HS

TO Harold Singer Div. of Tech. AT Box 100 Sacto, CA. 95801

SUBJECT Shea Bill - Hard Rock DATE 10/30/84

We ~~still~~ want a clean underground water supply and feel this was the intent of the Shea Bill. However, compliance with the proposed regulations will be very expensive in my opinion, so far beyond what was intended by the Shea Bill. Some of these regulations will require large expenditures which will threaten our survival & we can't afford it. We independent tests are in the large amount of money we're just paying bills now. So it will be the end of us.

The regulation need to be changed.

Thank you for your consideration.

PLEASE REPLY TO SIGNED Ernest Setliff

Received DTS
OCT 23 1984

DATE SIGNED

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Paul R. Bonderson Bldg.
901 P. St.
Room 100
Sacramento, Ca. 95801

#143 HS

Sav'n Sam's SERVICE STATIONS
1147 HIGH STREET • AUBURN, CALIFORNIA • PHONE 885-4175

October 22, 1984

Harold Singer
Division of Technical Services
P. O. Box 100
Sacramento, CA 95801

Subject: Adoption of Proposed Regulations Governing Underground Storage of Hazardous Substances by the State of California Water Resource Control Board

The regulation as now proposed will put us out of business. Small independents, like ourself, operate on such a small margin that we will never be able to recoup the costs. We have not yet paid off the money we had to borrow to comply with Phase two of the air quality regulations.

Respectfully,
Sav'n Sam's Service Stations
Sam H. Gailbreath
Sam H. Gailbreath

Received DTS
OCT 23 1984

#144 HS

FOOTHILLS OIL CO., INC.
NEVADA ST. & BLOCKER DR.
P. O. BOX 507, AUBURN, CALIF. 95603
PHONE (916) 878-0371

Auburn, Ca. 95603
Oct. 22, 1984

Harold Singer

Dear Sir:

If the Proposed regulations governing underground Storage of Hazardous Substance is past, as Proposed. It would threaten the survival of this Company.

Thank You

Ronald Bailey

Received DTS
OCT 23 1984

#145 HS

PROPERTIES UNLIMITED, INC.
2400 GOLDEN HILL RD.
PASO ROBLES, CAL.93446
805-238-4317

OCT. 18, 1984

HAROLD SINGER
DIVISION OF TECHNICAL SERVICES
P.O. BOX 100
SACRAMENTO, CA. 95801

Dear MR. SINGER,

Re: ADOPTION OF PROPOSED REGULATIONS GOVERNING UNDERGROUND STORAGE OF HAZARDOUS SUBSTANCES BY THE STATE OF CALIFORNIA WATER RESOURCE CONTROL BOARD.

We have just recieved a cursory overview of the above regulations, it appears to us, that said "regs" go far beyond the jurisdiction and intent of Bill 1362. Although we are sympathetic to envoiromental concerns, it would seem unreasonable to expect that all concerned could possibly comply with the rather high costs of the "regs" in the time remaining between adoption and July 1985. The financial burdens that would likely be imposed by these "regs" would be the equivelent of a State mandate to close the majority of the businesses currently selling fuels, solvents, etc. in todays market place. Further the the financial burden of dealing with a "historical release" would, without a doubt, add our organization to the statistical list of business closures.

Thank you,

PROPERTIES UNLIMITED, INC.

Hal Moi, president.

Received DTS
OCT 23 1984

AIR DRY • POLYESTER- COATINGS • GELCOATS

#146 HS

POLY LUX

1470 SPENCE ST., LOS ANGELES, CA. 90023 (213) 269-7229

October 19, 1984

State Water Resources Control Board
Attention: Mr. Harold Singer
Division of Technical Services
Post Office Box 100
Sacramento, California 95801

Re: Adoption of Proposed Regulations Governing Underground Storage of Hazardous Substances

Dear Mr. Singer:

We are a small minority-owned business faced with the dilemma of paying for the sealing and/or removal of our underground tanks.

Our preliminary investigation revealed that this entire endeavor may reach a cost of $15,000 or more. As a small business to put out such an amount at one time is horrendous and may put us out of business. It is for this reason we ask the State Board's indulgence to consider this plight undoubtedly faced by many other small businesses.

It is our every intention to comply to all laws which govern these tanks; however, we must ask for your help so that we may best be able to continue to operate our business and accomplish the closure of our tanks.

Sincerely,

Betty Ann Angulo

Betty Ann Angulo
Vice-President
Poly-Lux, Inc.

BAA:sa

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#147 HS

THE HERTZ CORPORATION
660 Madison Avenue, New York, NY 10021

October 22, 1984

Mr. Harold Singer
State of California
State Water Resources Control Board
Paul R. Bonderson Building
901 P Street
Sacramento, California 95814

Dear Mr. Singer:

As a representative of the Hertz Corporation, I would like to thank you for the opportunity to comment on the California State Water Resources Control Board's proposed regulations for the underground storage of hazardous substances.

In general The Hertz Corporation recognizes the need for and agrees with the goals of these proposed regulations. Leaking underground storage tanks represent one of the major environmental problems facing us all, and steps must be taken now to prevent substantial deletorious impacts on our groundwater and surface water resources from such leaks.

The following paragraphs present our comments on specific sections of the proposed regulations.

Sections 2634 (a)(3) and 2642 (d)

Double wall tanks are designed to detect failure of either the inner or outer wall. If the leak detection system of these tanks is verified to be operational, there is no need to perform annual precision tests to verify tank tightness. Double wall tanks should therefore be exempt from tank precision testing requirements.

Sections 2634 (a)(3) and 2635 (b)(3)

These sections of the regulations use the term "hydrostatic testing: to seemingly refer to storage system tightness tests that meet the criteria of section 2642 (c) and the Precision Test as defined by the National Fire Protection Association. The use of the term "hydrostatic testing" may be construed by administering agencies to limit acceptable storage system tightness tests to those tests that measure changes in hydrostatic pressure only. It would appear to be less confusing and potentially less limiting if the regulations refrained from the use of the term "hydrostatic testing" in this context, and instead referred to acceptable testing techniques as those techniques which meet the criteria of Section 2642 (c) and/or the NFPA Precision Test.

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Sections 2634(d) and 2643(c)

Sections 2634(d) and 2643(c) specify daily inventory monitoring for new motor vehicle fuel storage tanks and existing storage tanks respectively. These requirements appear to have been written specifically for storage operations associated with daily direct calibrated resale of the stored substance. They do not take into account operations which are not involved in the direct calibrated resale of the stored substance and/or operations that are not conducted on a daily basis. The State Water Resources Control Board should take these considerations into account, and should either develop less stringent inventory control requirements for storage systems not associated with the direct calibrated resale of the stored substance, or simply exempt these storage systems from the inventory control requirements.

Furthermore, the levels of accuracy in inventory monitoring which these sections of the regulations require will force all tank owners/operators who are not involved in the direct calibrated resale of their tank contents to re-equip their facilities. Specifically, the requirement that the tank owner/operator react to a cumulative discrepancy of one-half percent of the motor vehicle fuel delivered over a period of thirty days or more will necessitate the purchase and installation of dispensing equipment that is capable of giving the accurate measurements required. This expense is not warranted for the tank owner/operator that is not dispensing the stored substance for direct calibrated resale, and should not be forced upon that person.

In addition, this inventory monitoring requirement is designed to provide a gross indication of a possible leak. However, in instances where the owner has installed double wall tanks and the leak detection systems of these tanks are tested periodically to verify their effectiveness, these inventory monitoring requirements are redundant and unnecessary. Given the general inaccuracies associated with inventory monitoring (e.g., product thermal expansion or contraction, and tank end deflection), it may be advisable for the state to promote the use of double wall tanks by exempting them from these extensive inventory monitoring requirements.

Section 2647(b)

Regarding drilling to collect soil borings and/or install monitoring wells, there are no provisions in the regulations for legally conducting drilling or boring operations on property that is not owned by the tank owner/operator.

In the absence of such provisions, the regulation should exempt tank owners from any monitoring requirements that necessitate off-property drilling for soil borings or the installation of wells.

Section 2712(f)

This section prescribes the limits of a provisional permit, including the maximum duration of three (3) months. However, the State Water Resources Control Board should consider the following situation:

A company that owns several underground storage facilities throughout the state has an established corporate policy of replacing all old storage facilities in its network. If that company establishes a policy of replacing some or all of its underground tanks in the state, and if the new storage facilities are to be built in accordance with the state's construction and monitoring standards for new facilities, then these plans would appear to be consistent with the environmental protection goals of the state regulations. If the storage facility replacements are scheduled to occur over a reasonable period of time, the company should be issued provisional permits for those facilities that will be replaced to allow operation up until the time that they are replaced.

These provisional permits should likely contain requirements such as the following:

1. The storage facility should be tested for tightness prior to permit issuance.

2. The storage facility should be tested for tightness periodically (e.g., annually) until replacement is completed.

3. The company should provide some guarantee for project funding such as a bond.

It is recommended that the definition of a provisional permit be expanded to include cases of this type, and that the effective time period of these permits be expanded to a period of three years.

Article 4

Section 25292 of the California Health and Safety Code, as amended by Assembly Bill No. 3565, provides the authority and mandate through which the State Water Resources Control Board has drafted Article 4 (Sections 2640 through 2648) of these proposed regulations. Article 4 of these proposed regulations represents a very broad interpretation of the enabling legislation in that the Board has required that all of the alternatives to visual monitoring presented in the statue be implemented. By establishing such a set of stringent standards that must be met by July 1, 1985, the Board may have proposed regulations which exceed the technical capability of the region. For example, are there enough competent drillers and sufficient drilling equipment in the state to perform the required soil borings and install the required monitoring wells by July 1, 1985? Or, has the Board drafted regulations which will force tank owners to be out of compliance because there is not sufficient capability to satisfy the demand that these proposed regulations will create?

As presented in Assembly Bill No. 3565, Section 25292 of the California Health and Safety Code would appear to allow for the implementation of a phased approach to the monitoring of existing underground storage systems. For example, the Board could establish regulations which include the following elements:

1. Immediate implementation of a reasonable inventory monitoring program that takes into account the nature of facility operations, and the frequency and method of the delivery and removal of the stored substance.

2. The implementation of a tank testing program which includes initial testing within a reasonable time frame and subsequent testing on a prescribed periodic basis which is based primarily upon tank age.

3. The establishment of statewide vadose zone and ground water monitoring programs which are required to be implementted in phases over time. The criteria for establishing time frames for the implementation of such monitoring programs would include tank age and the (established, documented) potential for impacts on public health and the environment (e.g., proximity to critical ground water supplies and likelihood of contaminant migration to these ground water supplies.)

In other words, the monitoring program prescribed by the Board's regulation could consist of initial monitoring of the tank inventory and the integrity of the storage system, to be followed by the phased implementation of soil borings and vadose zone and ground water monitoring over time (e.g., over a period of five years) in sensitive areas.

General Comments

These proposed regulations present a set of detailed construction and operating requirements which must be implemented and reviewed by local regulatory agencies. Indications were given in the workshop with the authors of the regulations that these regulations will be implemented without extensive advice or guidance from knowledgable officials at the state level.

For a company that operates throughout the state and desires to establish statewide standards, local administration of the regulations raises the possibility of inconsistent interpretation and administration of the regulations. This highlights the need for a vehicle of adjudication of inconsistencies which does not necessitate court proceedings. It is recommended that the State Water Resources Control Board establish such a process within the context of these regulations, whereby any disputes would be adjudicated by the State Water Resources Control Board.

In summary, I would like to reiterate our concern with environmental protection and our agreement with the goals of the proposed underground storage regulations. We trust that the regulatory review process will result in the promulgation of well-meaning regulations, and we assure you that all Hertz facilities in the state of California will comply with all applicable requirements in those final regulations.

Sincerely,

Paul H. Woods, Jr.

Paul H. Woods, Jr.
Environmental Engineer

PHW:djw

cc: R. Bashan
D. Bauer
R. Hurwitz
G. Nestel
M. Sweig
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#148 HS

CAMBRIDGE ENGINEERING INC. 74 Faulkner Street • North Billerica, MA 01862 (617) 667-8412

October 19, 1984

Division of Technical Services
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801-0100

Attn: Harold Singer

In response to your "Notice of Proposed Rulemaking" concerning proposed regulations governing underground storage of hazardous substance, Cambridge Engineering, Inc. would like to have the following comments considered by the State Board.

As manufacturers of the Healy Phase II vapor recovery system we are concerned about the possibility that the new regulation may require the underground hydrocarbon vapor return lines to have means for frequent daily pressure checks or be placed in trenches equipped with approved liners which permit automatic monitoring for evidence of leakage.

The Healy System utilizes a jet pump which uses a small fraction of the gasoline available at the dispenser to create the vacuum needed to draw vapors through our nozzle and co-axial hose. These vapors along with the gasoline discharged by the jet pump are returned by gravity at atmospheric pressure to the underground storage tank. Each jet pump will discharge between 1 and 2 gallons per minute of gasoline when in operation. This discharge only occurs when a hose is in use.

We believe that an annual pressure check such as is currently required by CARB for underground vapor return piping should be recognized as adequate for the following reasons:

1- Gasoline is discharged into the vapor return piping for short periods of time, only when a hose is in use.

2- The path of least resistance for the gasoline is to drain back to the underground tank by gravity.

3- The gasoline is at atmospheric pressure.

4- The vast majority of presently installed gasoline leak detectors on pressurized piping cannot detect a 2 gallon per hour leak rate and therefore represent a far greater potential hazard than the Healy System vapor return arrangement.

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5- Current pressure balance or vacuum assist underground piping is frequently flooded with gasoline due to overfilling of the underground tanks. These systems should therefore not be considered totally different from the aspirator assist type of vapor recovery arrangement.

6- Gasoline condensation in pressure balance or vacuum assist systems must return to the underground tanks via the same piping at atmospheric pressure. All vapor recovery system vapor return piping should therefore come under the same regulatory control.

We are confident that a practical approach, consistant with the potential threat of ground water polution such as recommended above will become part of your new regulation.

Yours truly,

CAMBRIDGE ENGINEERING, INC.

James W. Healy

James W. Healy

JWH/jc

cc: Jack Healy

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901 "P" ST

SACRAMENTO CA 95814

LOS ANGELES INDEPENDENT STATION OWNER STRONGLY OPPOSES TO THE SHER BILL. PLEASE HELP ME.

RICARDO MENDOZA

866 SUNSET BLVD

LOS ANGELES CA 90012

W.U. 1201-SF (R5-69)

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Telegram

REPORT DELIVERY

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1501 Petaluma Boulevard South
Petaluma, California 94952
Phones: 707/763-1521, 707/545-2136, 415/454-4066

October 19, 1984.

State of California
Division of Technical Services
Attn: Mr. Howard Singer.

The Stier Bill and the proposed regulations by the California Water Resources Control Board would be destructive of many small distributors and retailers.

The requirements would be economically not feasible, would eliminate many small jobbers and retailers and customarily reduce available services as well as eliminating competition in many instances.

You must apply the restrictive measures to new installations only - if at all.

Howard Schaney

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OCT 23 1984

Alliance
PETROLEUM CORPORATION