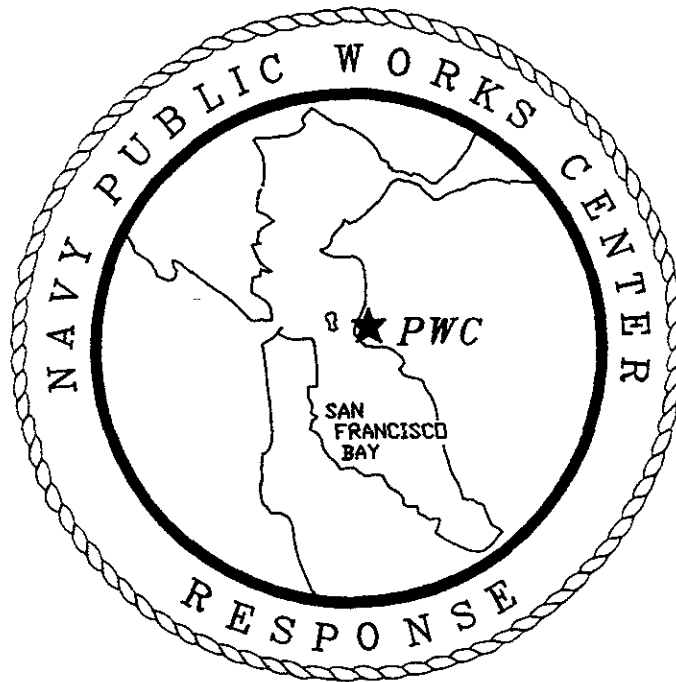


WORK PLAN
TANK CLOSURE OF
UNDERGROUND STORAGE TANKS (UST'S)
NOS. B-732-1 & B-732-2
CAMP PARKS, DUBLIN, CALIFORNIA
AUGUST, 1992




Prepared by:

Navy Public Works Center, San Francisco Bay
Environmental Engineering/Services Branch, Code 614
Safety Office, Code 09A
Oakland, California

In consultation with:

Alameda County Health Care Services,
Hazardous Material Division,
Oakland, California



PUBLIC
WORKS

TANK CLOSURE
OF UNDERGROUND STORAGE TANKS (UST'S)
NOS. B-732-1 & B-732-2
CAMP PARKS, DUBLIN, CALIFORNIA

CERTIFICATION

I hereby certify that I have examined the Underground Storage Tank (UST) sites to be closed and having reviewed the requirements for tank closure of UST #'s B-732-1 and B-732-2 at Camp Parks, Dublin, California, I believe that the attached work plan has been prepared in accordance with good engineering practices.

Stephen P. Worthington

Printed name of Registered Professional Engineer



Signature of Registered Professional Engineer



Date: 10/22/92 Registration No. 4137 State: California

TANK CLOSURE

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** HW manifests and excavation zone/other sampling results will be filed in Appendices F & G, as required in 40 CFR 280.74(a) and Parts 280.34(c) 2 and California Title 23, Section 2672 and retained for a minimum of three years at jobsite specified on Page 7 and at NSC, Oakland Building 441-B.

TANK CLOSURE

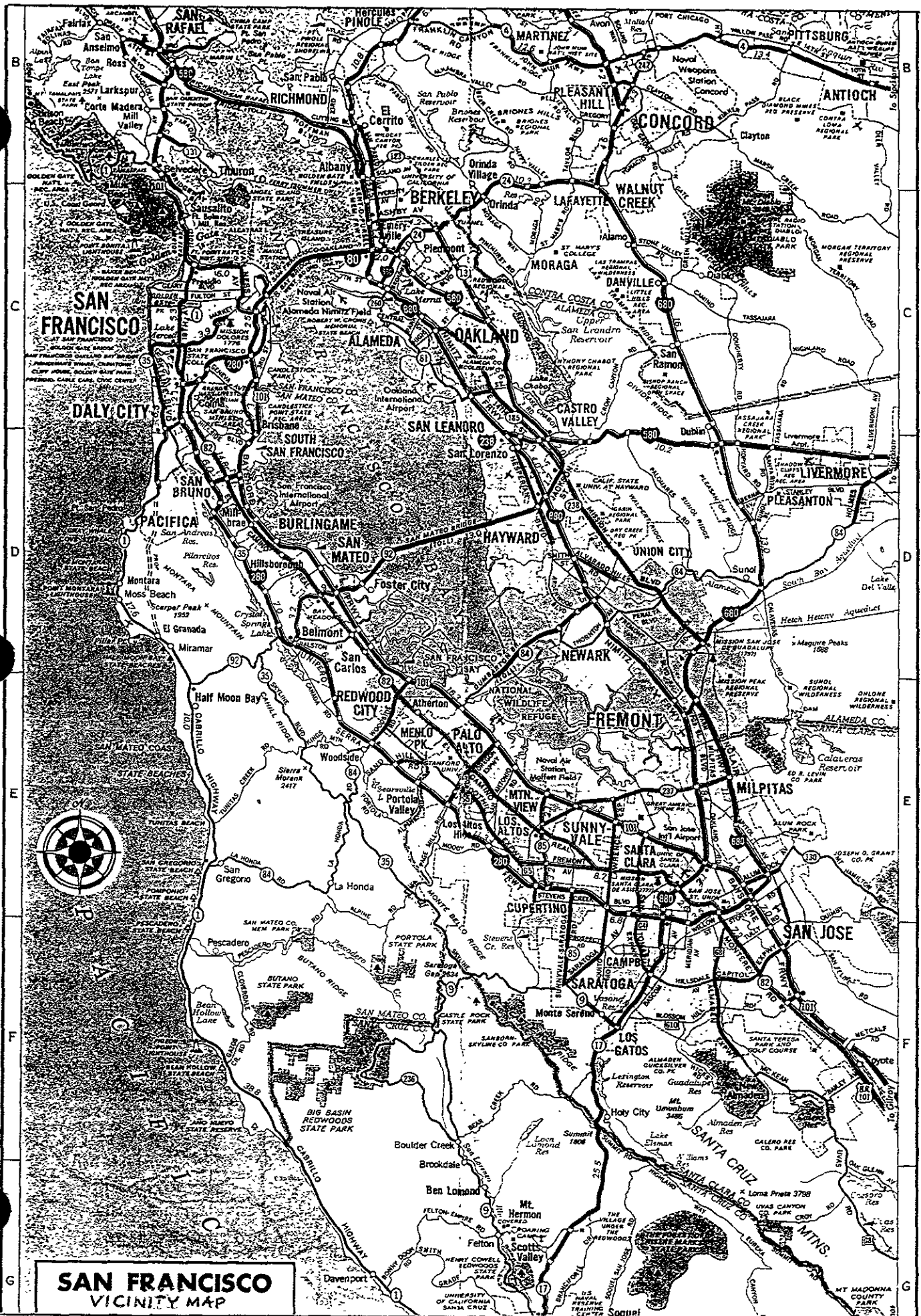
The Tank Closure Plan contains the necessary Work Plan and Health and Safety Plan required by regulation for submittal by the owner Navy Public Works Center, San Francisco Bay (PWCSFB) to the Alameda County Health Care Services Agencies and Department of Environmental Health (Hazardous Material Division) to obtain the tank excavation and removal permit prior to commencing the removal process.

I. Work Plan:

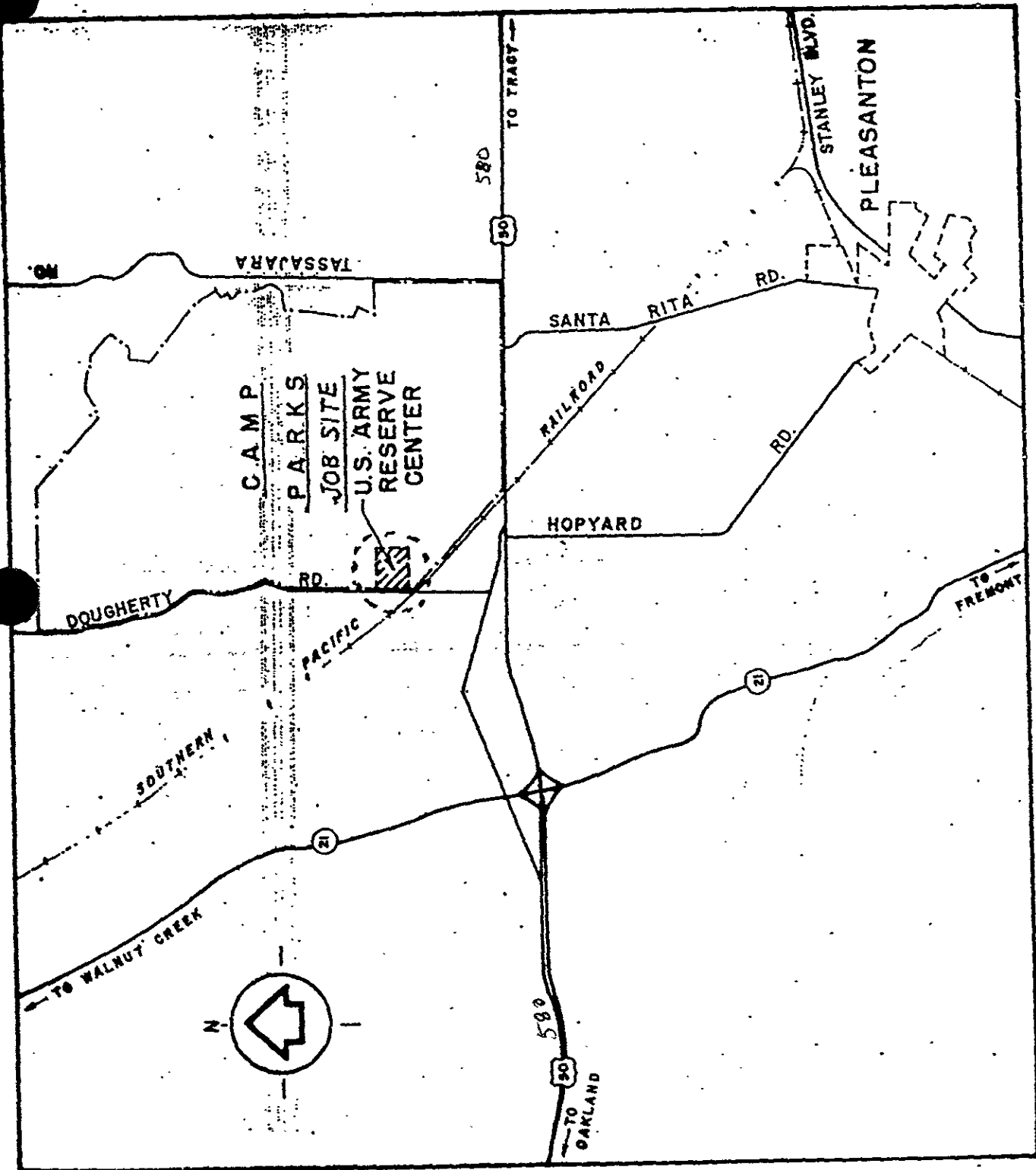
A. Introduction: PWCSFB Code 700 Heavy Equipment Division was tasked to implement the removal of a total of two Underground Storage Tanks (UST's), NOS. B-732-1 and B-732-2 located at Building 732 (ECS-30), Camp Parks, Dublin, California. {For plans and excavation stockpile areas, see sketches 1 thru 3}.

B. Assigned Scope of Work: The two UST's, associated piping, holding straps and electrical wiring will be excavated and removed by PWCSFB personnel and heavy equipment operators who have the training (see training certificates in Attachment 9), and experience required by the Federal, State and Local

authorities. The removed tanks will be emptied, transported and disposed of as Hazardous Waste (HW) by H & H Environmental Services (or other equal HW subcontractor licensed by the State of California to handle HW). As applicable, the tank cleaning, triple rinsing and inerting with 15-20 lbs dry ice per 1,000 gallon tank capacity, will be done by the subcontractor in their state permitted facility or on site prior to tank disposal. The soil and ground water sampling and analysis will be performed by Eureka, Inc. (or other equal subcontractor laboratory certified by the State of California). The handling of excavated soil and water contamination, if any, will be accomplished as indicated in the attached Health and Safety Plan. For a more detailed description of the Scope of Work, see the Health and Safety Plan.

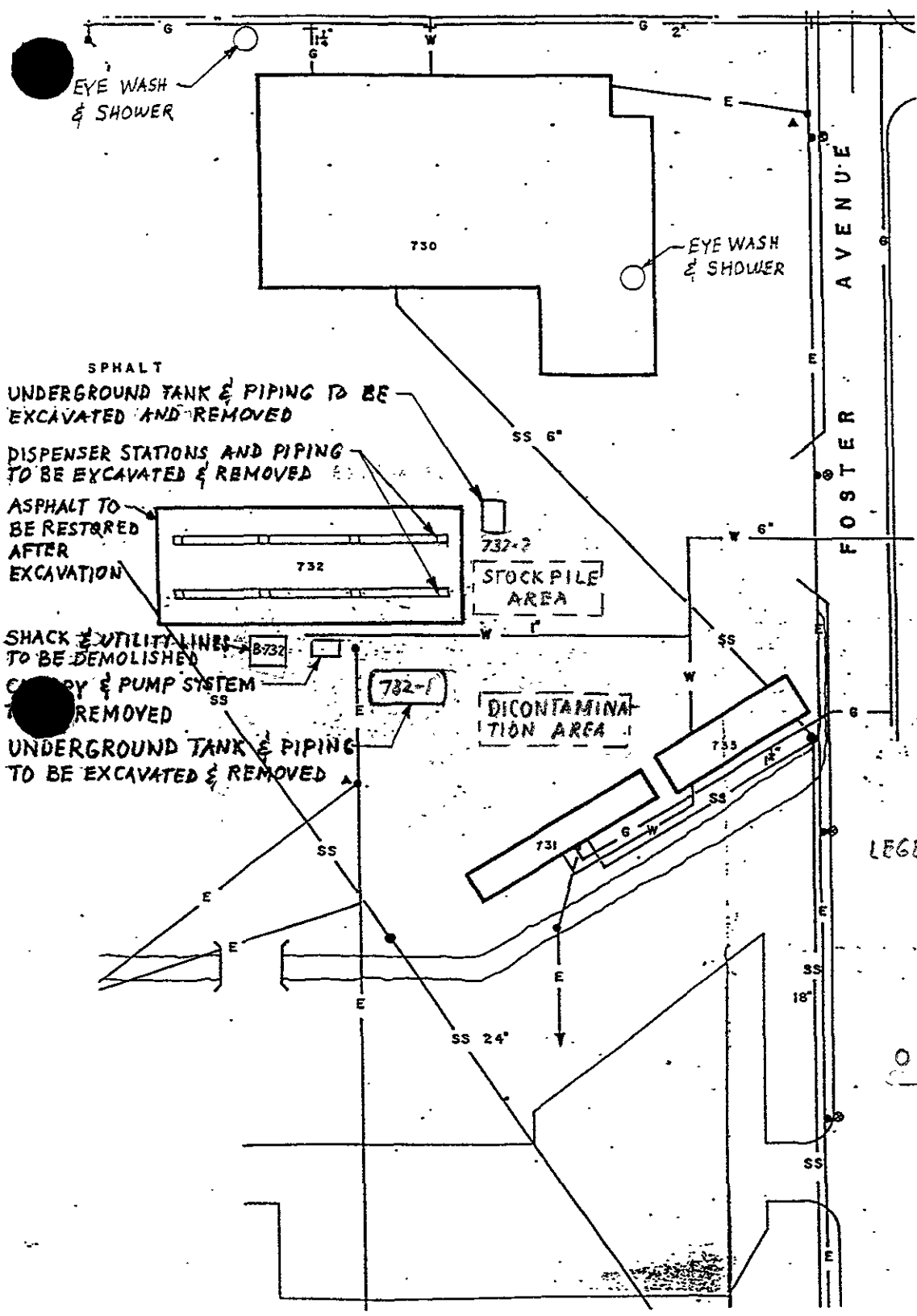


SAN FRANCISCO
VICINITY MAP



CAMP PARKS
LOCATION MAP

SKETCH #2



EYE WASH & SHOWER

EYE WASH & SHOWER

SPHALT
UNDERGROUND TANK & PIPING TO BE
EXCAVATED AND REMOVED

DISPENSER STATIONS AND PIPING
TO BE EXCAVATED & REMOVED

ASPHALT TO
BE RESTORED
AFTER
EXCAVATION

SHACK & UTILITY LINES
TO BE DEMOLISHED

CANOPY & PUMP SYSTEM
TO BE REMOVED

UNDERGROUND TANK & PIPING
TO BE EXCAVATED & REMOVED

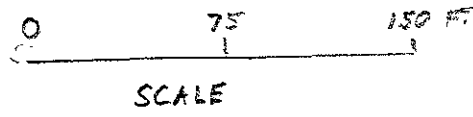
STOCK PILE
AREA

DISCONTAMINATION
AREA

FOSTER AVENUE

LEGEND:

- G - GAS LINE
- W - WATER LINE
- E - ELECTRICAL LINE
- SS - SEWER SYSTEM LINE



CAMP PARKS (ECS-30)

PLOT PLAN B-732

SKETCH # 3

HEALTH AND SAFETY PLAN

I Site Safety Plan

A. Introduction - This Health and Safety Plan has been prepared to outline the minimum required standards to be applied to the site. The Health and Safety Plan will be followed by the Navy Public Works Center, San Francisco Bay (PWCSFB) and their sub-contractors during their involvement in this project.

Jobsite name and address: Camp Parks,
ECS-30 Building 730
Parks RFTA
Dublin, CA 94568

B. Site Description - Camp Parks is adjacent to the East Bay city of Dublin, 45 miles from San Francisco and 18 miles southeast of Oakland near the intersection of Highways 580 and 680. Camp Park is presently used as a training area for more than 16,000 Army Reserve and National Guard soldiers assigned to some 215 units in the bay area. This camp consist of some

2,268 acres, 635 of which are used for administration, support and logistics. The remaining 1,633 acres are used for small unit field training and small arms weapons training and are predominantly open space and hilly. The two UST'S NOS. B-732-1 and B-732-2 and associated piping to be removed in this project are under asphalt and dirt surfaces within 15 feet of an abandoned gasoline station that includes an old shack (B-732) with eight gasoline dispenser stations on a 150 feet (X) 50 feet concrete slab all of which are to be removed in this project. The gasoline station site is about 200 feet south of the (ECS-30) maintenance building (B-730) inside the Camp Parks facility.

C. Background - Tank #'s B-732-1 and B-732-2 were installed in 1942 as a gasoline fuel storage source for the eight fuel dispensers in the gasoline station near B-732 and are in an area with first ground water of more than 20 feet deep. Both of the tanks were abandoned 20 years ago, and has not been tested for leaks since and are scheduled for removal in this closure project.

CHARACTERISTICS

NEAREST TANK # (BLDG)	AGE	TYPE	SIZE (GAL)	ORIGINAL CONTENT	PRESENT CONTENT
B-732-1	50	SNGL WALL STEEL	20,000	GASOLINE	FULL OF H2O
B-732-2	50	SNGL WALL	4,000	GASOLINE	FULL OF H2O

II Description of Work:

1. PWCSFB Environmental Engineering, Code 614 has prepared the permit application, fees, closure and work plans. Safety, Code 09A prepared and will implement the Health and Safety Plan.

2. Prior to any excavation work, PWCSFB Code 40 surveyors or if feasible, the U.S.A. CO. will lay out all under ground utilities in the vicinity and identify the utilities that might interfere with the work, including overhead utilities within 20 feet distance minimum.

3. Eureka, Inc., a California state certified laboratory subcontractor (or equal), will take the soil samples to test for contamination prior to any work, if feasible.

4. PWCSFB Code 732 to break concrete and asphalt and put them aside for reuse or disposal.

5. PWCSFB Code 625 to provide shoring for excavations of deeper than four feet if walls are not cut back to the required angle of repose.

6. Eureka, Inc. (or equal) to take and analyze soil and water samples as necessary, during excavation.

7. Any soil that is not contaminated with HW will be stock piled by PWCSFB Code 732 so it can be reused. Contaminated soil, if any, will be stock piled on plastic and covered or disposed as required by regulations.

8. PWCSFB Code 732 will remove tanks, ballast slabs and associated piping and backfill with clean soil.

9. Removed tanks, ballasts, holding straps and piping will be disposed as HW after being emptied and inerted and cleaned by the subcontractors (H & H Environmental Services or equal), if cleaning does not render the metal to be non hazardous.

10. PWCSFB Code 500 to replace disturbed concrete and asphalt surfaces with asphalt for parking. Reinforced concrete replacement will be a subject of an amendment to this contract and will be provided upon receipt of additional fund.

III Key Personnel and Responsibilities:

Engineer in Charge (EIC) - Pacifico Icasiano (302-5483) has the overall responsibility for the administration of the design and construction, he or his assigned will also serve as EIC.

Construction Foreman - Chester Knoblock (302-5893) has the overall responsibility for the tank removal project.

Emergency Coordinator - The fire department at Camp Parks (828-3817) has the responsibility for coordinating security/fire and spill dispatching.

Safety Officer - Joe Shepler (302-5690) has the overall responsibility for the operational and implementation of health and safety administration. He or his designee will also serve as the Site Safety and Health Officer.

Environmental Officer - Steve Worthington (302-5417) has the overall responsibility of coordinating with regulatory agencies for this project. He or his designee will also serve as the Site Environmental Officer.

IV Environmental, Health and Safety Considerations:

A. Purpose - The purpose of this closure project is to safely and permanently remove the UST's, examine and remediate as required the extent of contamination, if any, prior to properly back filling the excavations.

B. Work Control - This project includes the required environmental and safety control, job hazard, analysis and site safety control considerations.

1. Environmental Control Considerations: Include sampling and analysis of soil/water contamination, tank emptying, cleaning and inerting of Hazardous Materials, tank excavation, removal and disposal as HW and investigation after tank removal.

a. Site Samples - Soil and ground water samples will be collected from the excavation pit to determine if contamination is present. If visible soil or ground water contaminations is present after tank removals, the contaminated soil will be analyzed and excavated. After excavation of contaminated soil, additional soil and ground water samples will be collected to determine the remaining levels of contamination. When laboratory analysis of soil samples indicate that acceptable levels of contamination remains (see table I below), in the excavation pit, it will be backfilled with clean soil.

1) Minimum requirements for soil sampling will be as follows:

a) > than 1k gallon capacity = 1 sample under fill area and 1 sample under center of tank

Table I - Practical Reporting Limits:

	<u>Soil PPM</u>	<u>Water PPB</u>
TPHG	1.0	50.0
TPHD	1.0	50.0
BTX&EF	0.005	0.5
O&G	50.0	5,000.0

If not attainable for diesel oil, subcontractor to explain why (in the lab report) and use the following:

	<u>Routine</u>	<u>Modified Protocol</u>
TPHD	≤ 10 PPM (42%)	≤ 10 PPM (10%)
	≤ 5 PPM (19%)	≤ 5 PPM (21%)
	≤ 1 PPM (35%)	≤ 1 PPM (60%)

b. Work Control:

1) Tank Emptying: As indicated in the background tank "characteristics" paragraph I (c) above, UST B-732-1 and B-732-2 are full of water. These tanks will be emptied by H & H Environmental Services (or equal) prior to tank removals.

The HW manifest for transporting and disposal will be provided by H & H (or equal) to the Navy as the documents become available. The HW will be removed and handled pursuant to the applicable provisions of 40 CFR 261-265, CCR Title 22 and Chapter 6.5 of division 20 of the health and safety code.

2) Tank Cleaning: Prior to tank removal, if significant quantities of sludge are present, the tank may require cleaning by H & H Environmental Services (or equal). Triple rinsing and cleaning of the tank will be performed in accordance with applicable regulations. If tank entry is required, strict adherence to Occupational Safety and Health Agency (OSHA) confined space entry requirements will be necessary.

If the subcontractor adds a cleaner to the tank to clean residual product within the tank on-site prior to disposal, the subcontractor will document the cleaning agent, concentration and complete and provide the HW manifest to Camp Parks ECS-30, B-730, Office for signature.

The subcontractor will be considered the HW generator of the cleaning rinse and will use its Hazardous Waste Generator's Identification Number if cleaning is done at the

subcontractor's facility (permitted TSDF). The rinsate will be analyzed and disposed of as HW unless the analysis shows otherwise.

3) Tank Inerting: If tank monitoring with Lower Explosive Level (LEL) meter indicates that the tank contains flammable or combustible vapors in excess of 10% of LEL, it will require degassing. Degassing will be performed in accordance with the local fire department requirements. An example of a generally accepted degassing method done by the PWCSFB Gas Free Engineer (GFE) is to fill the tank with a minimum of 15 pounds (20 pounds is recommended) solid dry ice (CO_2) per 1,000 gallons of tank volume. The dry ice is broken to provide good evaporation. All openings are capped, except for a 1/8 - 1/4 inch pressure relief hole in one cap. If regulations require, the tank will be certified "gas free" by an PWCSFB qualified GFE and a copy of the test result filed in the work plan. However, it is anticipated that the tanks will be triple rinsed of its contaminants by mechanical jets and other means without anyone entering the confined tank spaces.

4) Excavation and Removal: After the tanks are emptied, it will be uncovered and excavated to a distance of approximately 3 feet around the perimeter of each tank by the PWCSFB Heavy Equipment Division, Code 732. The asphalt,

concrete, and/or soil will be removed and placed away from the excavation. The soil will be stored separately from any asphalt or concrete. In the case of suspected, known, or obvious soil contamination, the soil will be placed on a plastic sheet, covered, labeled and posted with precautions for site security. See sketches 3 & 4 for location of stock pile of petroleum contaminated soil. If organic compound aeration will occur, it is to be in accordance with BAAQMD Regulation 8 Rule 40. BAAQMD Enforcement 749-4600 should be notified by telephone 24 hours prior to stockpiling of contaminated soil. However, depending on soil contamination characteristics, contaminated soil will be disposed of in a Class I or II landfill. It is estimated that no more than 45 cubic yards of contaminated soil will require removal.

When the tank top and sides are exposed, connecting pipes (vent, fill, suction, etc.) will be emptied and removed to allow the tank to be pulled from the excavation. Cap or plug the ends of lines that cannot be removed. Use particular care in emptying and removing the pipes to avoid spilling Hazardous Materials into the excavation. Care must be taken in removing the tank from the ground to reduce the possibility of spilling any residual tank contents into the excavation and surrounding areas.

The excavated asphalt, concrete and/or soils will be stockpiled while laboratory analysis of soil and/or groundwater samples are being completed. Barricades will be placed around the excavation at a distance sufficient to prevent erosion, caving and sloughing into the excavation from vehicle traffic. Pedestrian hazards and personnel safety are also a major concern.

If no contamination is found or if the contamination has been sufficiently removed, the excavation will be backfilled and restored as required by Code 700. Approval of the regulatory agencies must be obtained before restoration can take place.

5) Tank Disposal: The underground tank and associated piping will be decontaminated by H & H prior to disposal. The tank and associated piping should be designated as scrap metal and documented to avoid potential future liability. The tank and associated piping which cannot be sufficiently decontaminated on-site must be removed and handled as a HW pursuant to the applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code. Additionally, cleaning at the HW subcontractors permitted facility may be allowed to render the metal non hazardous.

6) Investigation: After the tank is removed, soil samples will be taken from within the excavation. The number of soil samples (usually two per tanks) will vary with the specific regulatory agencies involved. The soil will be analyzed for hazardous constituents identified from the tank contents and regulatory agency policy. If there is water within the excavation water samples are usually collected and analyzed for the same parameters.

It is also recommended that a composite soil sample be taken from the excavated soil to determine if it is contaminated or its acceptability as a backfill. If the soil or water do not indicate any hazardous constituents beyond regulatory action levels the site may be backfilled and restored upon approval of the regulatory agency(s) involved. If the samples indicate hazardous constituents beyond regulatory action levels, a site investigation will be required to determine the extent of contamination and the hydrologic characteristics of the site.

2. Job Hazard Analysis Considerations: The potential hazards associated with this project include chemical and physical hazards:

a. Potential Chemical Health Hazards

Consideration: Observation of the excavated material will be made to detect any unusual odors or obvious indication that contamination may be present in addition to the standard sampling analysis for determining the potential chemical Hazards. If contamination were encountered, it would probably be constituents of petroleum (benzene, toluene, xylylene & ethyl benzene), diesel, fuel oil and metals (cadmium, chromium, lead, zinc, mercury and nickel) from leaded gasoline and waste oil.

1) Petroleum Constituent Hazards:

a) Benzene:

(1) Characteristics: Clear, colorless, highly flammable liquid with characteristic odor.

(2) High exposure levels may cause: Acute restlessness, convulsions, depression, respiratory failure, suspected carcinogen.

(3) Permissible exposure level in air (PEL) for a Time Weighted Average (TWA) over an eight hour period:
10 ppm

b) Toluene:

(1) Characteristics: Refractive, flammable liquid with benzene like odor.

(2) High exposure levels may cause: Headache, nausea

(3) PEL for an 8-hour TWA: 200 ppm

c) Xylene:

(1) Characteristics: Clear, mobile, flammable liquid

(2) High exposure levels may cause: Skin, nose and eye irritation, dizziness, ataxia, loss of consciousness and respiratory failure.

(3) PEL for an 8 hour TWA: 100 ppm

d) Ethyl Benzene:

(1) Characteristics:

(2) High exposure levels may cause:

(3) PEL for an 8-hour TWA:

2) Diesel Hazards:

(a) Characteristics:

(b) High exposure levels may cause: Route of exposure is the skin contact and causes irritation and dermatitis.

(c) No allowable exposure limit has been established.

3) Fuel Oil Hazards:

(a) Characteristics: Oil effects the skin when in the mist form. It has a very low vapor pressure but is not a carcinogen.

(b) High exposure levels may cause: Route of mist exposure is skin contact and causes dermatitis.

(c) OSHA PEL is 5 mg/m³ for mist exposure

4) Metal Constituent Hazards:

(a) Cadmium - affects the respiratory systems, kidneys, prostate and circulatory system. Route of expose are inhalation and ingestion. Symptoms include pulmonary edema, cough, tightness of chest, headache, chills, muscle aches, nausea, diarrhea, emphysema, anemia and protenteinuria. Volatilization depends on the cadmium-bearing compound. It is considered a potential carcinogen. Does not volatilize OSHA PEL is 1 mg/m³.

(b) Chromium - Affects the respiratory system. Route of exposure is inhalation. Symptoms include histologic fibrosis of the lungs. The hexavalent state of chromium is a carcinogen. OSHA PEL is 1 mg/cubic meter.

(c) Lead - Inorganic lead affects the central nervous system, gastro - intestinal track, kidneys, blood and gingival tissues. The routes of entry into the human body includes inhalation, ingestion, eye and skin contact. Symptoms are general body weakness, hypertension, insomnia, low weight, malnutrition, colic, tremor, wrist drop, encephalopathy. It is not considered a carcinogen. OSHA PEL for lead is 0.05 mg/m³.

(d) Zinc - Affects the respiratory system. It is considered a nuisance respiratory hazard. Route of exposure is inhalation. No reported systems. It is not considered a carcinogen. No allowable exposure limit has been established.

(e) Mercury - Inorganic mercury affects the respiratory system, central nervous system and the kidneys. Routes of entry include inhalation, skin absorption and eye contact. Systems include emotional disturbances, constipation, skin burns, diarrhea, salivation, it is not considered a carcinogen. OSHA PEL is 0.01 mg/m³.

(f) Nickel - Affects the skin and respiratory system. Routes of exposure include inhalation, skin contact and ingestion. Symptoms include eye, skin and mucous irritation and allergic reactions. It is considered a potential carcinogen for lungs and sinuses. OSHA PEL is 1 mg/cubic meter.

b. Potential Physical Safety Hazard Consideration: anticipated physical hazards and due to the nature of the work involved, as well as, the site activities and conditions. These may include physical injuries due to proximity of workers to engine-driven heavy equipment and tools. Heavy equipment

used during the excavation will include PWCSFB pneumatic hammer, cutter, drill, backhoe and/or excavator, dump truck, crane and other heavy equipments as part of the tank removal and back filling operations. Only trained PWCSFB personnel will operate machines, tools and equipment. All of which will be kept clean and in good repair as part of the PWCSFB Shop Operations Procedures (SOP). Safety apparel required around heavy equipment will include a hard hat, safety shoes, glasses, coveralls and gloves. All work will be performed in accordance with OSHA guidelines.

1) Material Handling Hazards: Material handling hazards also exist during the setup and excavation operations. The equipment action can present a mechanical motion hazard. Conventional safety techniques for material handling (such as lifting of the tanks) and equipment operations will be utilized.

2) Noise Hazards: Elevated noise levels are anticipated as a result of the drilling operations and in those areas where aircraft may be in operation. The use of hearing protection will be required during drilling and at all times when working near aircraft operations areas and active aircraft engine test facilities. Noise monitoring will be conducted

when information indicates that worker exposure may equal or exceed an 8 hour time weighted average (TWA) of 84 decibels. All work will be done in compliance with 29 CFR 1910.95

3) Heat Stress: Heat stress is considered a hazard due to the potential for work to be scheduled during summer months, the physical work load associated with construction activities, and the use of personal protective clothing. When ambient temperatures reach 70F and workers are wearing impervious clothing, work/rest cycles will be scheduled on a regular basis and liquids with electrolytes (such as Gatorade) will be available to replenish body fluids. Because the incidence of heat stress depends upon a variety of factors, all workers, even those not wearing protective equipment, will be observed and encouraged to report any symptoms of heat stress. In addition, all personnel are specifically instructed to take breaks when they feel they are necessary. Cold Stress is not anticipated in this project.

4) Confined Space Entry: The potential for confined space entry is not likely since the tanks can be rinsed without anyone entering the tanks. However, just in case entry will be needed, the provisions of the US Navy confined space program will be implemented. A copy of that program is included in Appendix A.

5. Gas Free Engineering: The gas free engineering, if required, is also attached in Appendix A. A confined space permit is to be evaluated periodically within an 8 hour period.

3. Site Safety Control Considerations:

a. Traffic warning devices shall be placed at all excavations which are adjacent to pedestrian or vehicle thoroughfares in accordance with the U. S. Department of Transportation Federal Highway Administration "Work Zone Traffic Control" standards and guidelines. The Safety Office can provide advice on request and can be contacted at 510-302-5690.

b. If excavation is to remain overnight, standard trenching, shoring, guardrails, fences, or barricades shall be in place. Warning mediums shall be lighted at night. Alternately, excavations may be covered by steel plates anchored into the ground, with suitable ramping, where required. The steel plates must be able to withstand 4 times the maximum anticipated load.

c. Notify Security Officer at 510-828-3817 and Fire Department at the same number for street closure.

V. Job Hazard & Risk Assessment Summary:

This is a summary of the potential risks associated with the tank removal as a result of the hazards present. These hazards present potential harm to the occupational health risks chemicals and physical hazards existing on the site.

1. Health Risks Associated with Inhalation:

Of the chemicals identified as being present on the site; the petroleum products have the greatest potential to volatilize from the soil and/or water samples. In general, the remaining chemicals have very low vapor pressures and would not volatilize readily. For the remaining chemicals, dust generation would be considered the primary method for an inhalation exposure to occur.

Air monitoring and the use of personal protective equipment will be used to control and minimize the potential of chemical inhalation to the workers, as applicable. The direct reading air monitoring instrumentation will be used to evaluate the active work area perimeter, if required. Any levels in excess of the specified action levels will result in the cessation of activity until additional control measures can be implemented.

Based on prior experience, drilling and sampling present a low risk of exposure by inhalation to both volatile and dust contaminants.

2. Health Risks Associated with Direct Skin Contact:

The use of personal protective equipment is the primary means of controlling skin contact. Latex gloves will be utilized as applicable. The potential for contact with the sludges and muds may require the use of rain suits. Direct skin contact with contaminated materials by nearby naval personnel or the community residents is unlikely. The following OSHA regulations apply to this project. These include:

29 CFR 1910.132	29 CFR 1910.133
29 CFR 1910.134	29 CFR 1910.135
29 CFR 1910.136	29 CFR 1910.137
29 CFR 1910.138	29 CFR 1910.139
29 CFR 1910.140	29 CFR 1910.94
29 CFR 1910.95	29 CFR 1910.120
29 CFR 1910.145	29 CFR 1910.15
29 CFR 1910.178	29 CFR 1910.1200

3. Safety Risks Associated with Chemicals: The safety risks related to the chemicals on site are the potential for chemical reactions in the event confined space work are encountered. The recognition of these potential risks and the precautions to be utilized to minimize those risks will be in accordance with the most stringent safety and health regulations.

4. Safety Risks Associated with Physical Conditions: The physical hazards of working with heavy machinery and the potential for heat stress and noise exposure, and the methods of sampling are considered and are not different from standard construction or industrial operations. Risks will be minimized through the use of properly trained and experienced personnel and through the use of personal protective equipment and work/rest cycles.

5. Monitorings Associated with Air and Noise:

Direct reading instrumentation for ambient area monitoring will be conducted using any of the following instruments, as appropriate, based on the judgment of the site Health and Safety Officer (HSO):

Organic Vapor Analyzer (OVA)
Combustible gas/oxygen meter
Draeger tubes for specific constituents
Noise Monitoring

Integrated air sampling, either personnel or area, will be conducted at the discretion of the site HSO based on the operating conditions and the results of direct reading instruments. Any integrated sampling will be conducted in accordance with standardized National Institute for Occupational Safety and Health (NIOSH) methods for sampling and analysis or an acceptable equivalent method. All samples will be analyzed by a laboratory accredited by the American Industrial Hygiene Association.

Maintenance of the monitoring equipment will be conducted in accordance with the manufacturers' recommendations. All monitoring with battery operated equipment will be initiated with the equipment fully charged. Monitoring equipment will be calibrated according to the manufacturer's specifications prior to each use, or more often as deemed necessary. The calibration will be checked after each use.

Sample collection, handling, and shipment will be in strict accordance with the NIOSH methods order to maintain sample integrity.

The level of protection should not exceed level C for this kind of project. However, level A & B protection will be available at all times, even if it is not to be used.

Level C protection with respirator will be use in conditions:

a. Wherein the OVA readings reach 5 ppm, the action level (see Appendix B) or 1 to 5 ppm of unquantified organics in the breathing zone.

b. Combustible gas levels in the air are less than 10% LEL. Oxygen levels are maintained at approximately 20%.

c. Draeger tube readings for specific constituents reaches the action level but do not exceed 10 times the TLV or reach the IDLH concentrations.

Operating conditions that will cause deterioration and are beyond the upper limits specified above result in the

temporary halt of activities. A reevaluation of the work practices will be accomplished. At such time the site safety and health officer will decide when and under what conditions may be necessary to implement additional measure and to resume operations.

VI. Personnel Protection Equipment (PPE):

The following PPE is used by itself or in combination with other PPE listed here. Some PPE's are not mandatory for the specific work, however, if the employee requests for PPE, then the use of the PPE must conform to all the requirements of ANSI, NOSH and OSHA standards for the work that is to be done in this project.

Eye wear - Safety eyeglasses and/or goggles shall be scratch resistant polycarbonate lens with side shields and brow guard. It shall be impact resistant nylon frame and fog resistance glasses and where prescription glasses are required, it will be of the above specifications.

Hard hats - Shall be of durable polyethylene, lightweight, with headgear suspension to provide a snug fit.

Hearing Protection - Earmuffs with soft cushion fit around outer ear to seal noise, ear caps with fitted band to seal ear canals without actually being inserted but are held in place by the tension of the band, and ear plugs will be available to the employees.

Tripod, body harness, lifelines, lanyards, industrial safety belts will be available when there is a potential for a fall.

Eye wash/shower stations are located inside Building B-730 and at the northwest corner outside B-730. In addition, PWCSFB will provide portable eye wash/shower station at the work site as indicated on sketch No. 3, page 5.

Respirators - As a minimum half mask or full mask with HEPA organic vapors/dusts/mists/ cartridge with HEPA filter cartridge and a HEPA prefilter for potential exposure to organic vapors, gases and dusts are available. It will be either in supplied air or air purifying. A self containing breathing apparatus will also be available for confined spaces, just in case the need arises, which is not expected in this project. Entry into confined spaces, if required, are to be purged first of its contaminants and is to be clean dried before any operation is to be done. Adequate ventilation will be provided before an employee is allowed inside a confined

space. The make and model of the respirator will depend on the fit of the individual user. Appendix B illustrates the availability of respirators for the employees use.

Hand gloves - Gloves with high permeation resistance will be used to handle contamination, if any, and utility type glove who be used to absorb moisture and cushion the hands to prevent chafing.

Cloth coveralls and in addition tyvek coveralls will be provided at all times for employees use.

Safety shoes - Steel toe shoes will be worn at all times. It will be of skid resistant soles and cushioned insoles.

VII. DECONTAMINATION AND SANITATION:

All drilling and sampling equipment as well as non disposable protective equipment coming in contact with potentially contaminated soils or ground water at the site will be decontaminated prior to being removed from the site or being reused.

An equipment and personnel decontamination area will be set up in each work zone (locations shown on sketches #2 & #3, pages 5 & 6 of this work plan). Disposable clothing and respirator cartridges (if applicable) will be removed and disposed of in 55 gallon barrels at this location. This location will also have soap and water to wash hard hats; boots; and, if necessary, respirators. Respirators will be cleaned using sanitary wipes after each use. Water used in decontamination may be collected in a portable (< 5,000 gallon capacity) tank if volume warrants. Rinse water placed in the tank and all barrels used in the decontamination area will be labeled and collected on site for subsequent analysis and disposal. Safety eyewash/shower locations are on sketch #3.

Storage of PPE will be away from dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact. PPE will be stored and maintained in the support area for the site.

VIII. GENERAL SITE HEALTH AND SAFETY AND WORK RULES:

1. No drinking, gambling, or illegal drugs will be allowed on site. Anyone reporting to work under the influence of alcohol and/or illegal drugs shall be subjected to

disciplinary action. Any employee under a physicians care and/or taking prescribed narcotics must notify the designated site Health Safety Officer (HSO) and their immediate supervisor.

2. Personal protective equipment is required in designated areas. Such equipment may include, but is not limited to, respiratory protection, earplugs, hard hat, boots, gloves, safety glasses and coveralls.

3. Eating, drinking, smoking, and chewing gum or tobacco are allowed only in the support zone.

4. Changes in work practices or work rules shall be implemented only after approval by the project manager and the designated site HSO.

5. Construction equipment always has the right of way over regular vehicles.

6. All employees must clean up at the end of their shift before leaving the site.

7. All protective clothing required will be supplied by the designated site HSO. None of this equipment will be permitted to leave the site until the completion of the project.

8. Employees are responsible to clean and maintain the protective equipment issued to them. Any noted defects in the equipment shall immediately be reported to the designated site HSO.

9. Employees shall listen for warning signals or construction equipment and shall yield to construction equipment.

10. All equipment operators shall pay deliberate attention to watching for workers on the ground who may be in their path and provide warning to these people before moving.

11. All workers shall follow emergency procedures explicitly.

12. Employees must report all injuries and/or illness to their supervisor. This includes minor or slight injuries.

IX. CONDITIONS OF EMPLOYMENT:

1. All prospective employees must pass a pre employment physical. Failure to submit to any additional medical surveillance requirements will constitute grounds for non employment in this project and/or disciplinary actions.

2. All employees must participate in the air quality exposure monitoring program by wearing the personal monitors or sampling devices, if required and specified by the site HSO. Any employee refusing to participate in the program or who tampers with a sample will be subject to disciplinary action.

3. No beards or long sideburns shall be allowed since they interfere with respiratory protection. Trimmed sideburns and mustaches are acceptable. All employees must report to work clean shaven when there is a potential need for the use of respiratory protection.

4. All employees must complete a required training program prior to starting work.

5. All employees are required to use the personal protection specified for their work. This may include, but is not limited to, a cartridge respirator, gloves, boots, hard hat, hearing protection, safety glasses, and coveralls.

6. All employees must abide by all safety rules and procedures as described in the work rules and/or developed throughout this project.

7. All employees will perform their job assignments according to the "buddy" system within sight of co-workers being maintained at all times.

X OPERATING PROCEDURES

a. STANDARD OPERATING PROCEDURE FOR TANK CLOSURE WORK:

1. Inspect job site.

2. Discuss necessary procedures and possible safety/health hazards with co-workers. Obtain necessary PPE (rubber boots, rubber gloves, safety glasses, rain gear, etc.).

3. Contact PWCSFB Code 732 to obtain proper equipment for excavation.

4. Notify necessary authorities for street closure or other necessary action (Security, Fire Department, etc.).

5. Barricade and Caution Tape area to be worked in.
6. Excavate using standard excavation SOP.
7. Empty tanks of any content using a vacuum truck.
8. Remove excavation tanks, straps and associated piping.
9. Transport and dispose of tanks, straps and associated piping.
10. Remove shoring as in SOP.
11. Backfill and compact as in SOP.
12. Remove debris from area.
13. Contact PWCSFB Code 732 to transport and install steel plates if excavation is in a roadway.
14. If excavation is in lawn area, follow back filling SOP for reseeding and land scaping.

b. STANDARD OPERATING PROCEDURE FOR TRENCHING

1. Before digging, utilities must be located.
2. On the day of the excavation, call Base Security at 828-3817, to notify them of possible interim open excavations and manholes.
3. Traffic warning devices shall be placed at all excavations which are adjacent to pedestrian or vehicle thoroughfares in accordance with the U.S. Department of Transportation Federal Highway Administration "Work Zone Traffic Control" standards and guidelines.
4. Trenches over 4 feet deep must be shored or trench walls must be cut back to the angle of repose. Shoring may be required in unstable soil at depths less than 4 feet.
5. No one shall be allowed to enter an unshored trench, if shoring is required, as described above.
6. Shoring must be installed from the top down. It must be removed from the bottom up.
7. Sheeting must be flush with and extend above the trench walls.

8. Jacks or cross braces must be installed perpendicular to and firmly abutting straight stringers.

9. Locate emergency exit ladders or ramps no more than 50 feet apart. (All workers must be no more than 25 feet from a ladder or ramp.) The ladder shall extend at least 3 feet above the top of the trench.

10. Expose utilities by hand digging.

11. Keep excavated soil, tools, and other material more than two feet from trench edge. Keep vehicles away.

12. Keep out from under excavating, pipe handling and other heavy equipment.

13. Superimposed loads increase trench wall pressures. Underpinning may be needed near utility poles and trees.

14. If excavation is to remain overnight, standard guardrails, fences, or barricades shall be in place. Warning mediums shall be lighted at night. Alternately, excavations may be covered by steel plates anchored into the ground, with suitable ramping, where required. The steel plates must be able to withstand 4 times the maximum anticipated load.

15. Daily inspect the trench for signs of failure, especially after rainfall. Water and Vibrations weaken trench walls. Pump out water accumulations.

16. Backfill the trench immediately after shoring is removed. Call Base Security at 828-3817 when done.

c. STANDARD OPERATING PROCEDURE FOR BACKHOE

A pre-inspection of all equipment must be completed before operation of unit is begun.

Listed below are the things that should be done to each and every piece of equipment before any job is started.

1. Check oil
2. Check water
3. Transmission oil
4. Hydrolic fluid level
5. Check tires for inflation and or abnormal wear
6. Check all hoses
7. Check for leaks
8. Clean unit if necessary

Get together with other trades and discuss procedure of the job that is going to be done. Try to make a plan so the job can be accomplished the safest and most efficient way.

Check the area in which you will be working for possible problems. Some of these problems are; uneven terrains on hillsides or flat ground. Check for any utilities that you may come in contact with that can propose any possible danger. This should also include any overhead utilities.

If at all possible cone or barricade area where construction is to take place both during and after the job is left for any length of time. Place a flagman on the jobsite if necessary.

After job is completed or workers are securing for the day; cover any open holes or trenches or rope off the area with caution tape or warning tape.

Lower all buckets or out-riggers to the ground and secure unit to a safe location.

d. OPERATOR RESPONSIBILITY

a. The operator is responsible to check equipment thoroughly using operators inspection guide and trouble reports. Reporting any unusual malfunction or unsafe condition of equipment to supervisor.

b. Be on time for job assignments and make sure you understand what needs to be done, where and when to be there. Use the most direct route to jobsite and when a delay is encountered, notify you supervisor at the first opportunity available via radio or telephone.

c. When delivering debris to the dump, ensure vehicle is not overloaded and material is secured from blowing dust and debris. When at dump site give attendant proper P. O. # and retain dump tickets until the end of the shift and turn into your leader/supervisor.

d. When picking up material from vendor with pump or dump trailers, pull onto scales to take in then follow vendor procedures for picking up the materials. At end of shift turn paper work into your leader/supervisor.

XI CONTINGENCY PLAN

EMERGENCY INFORMATION

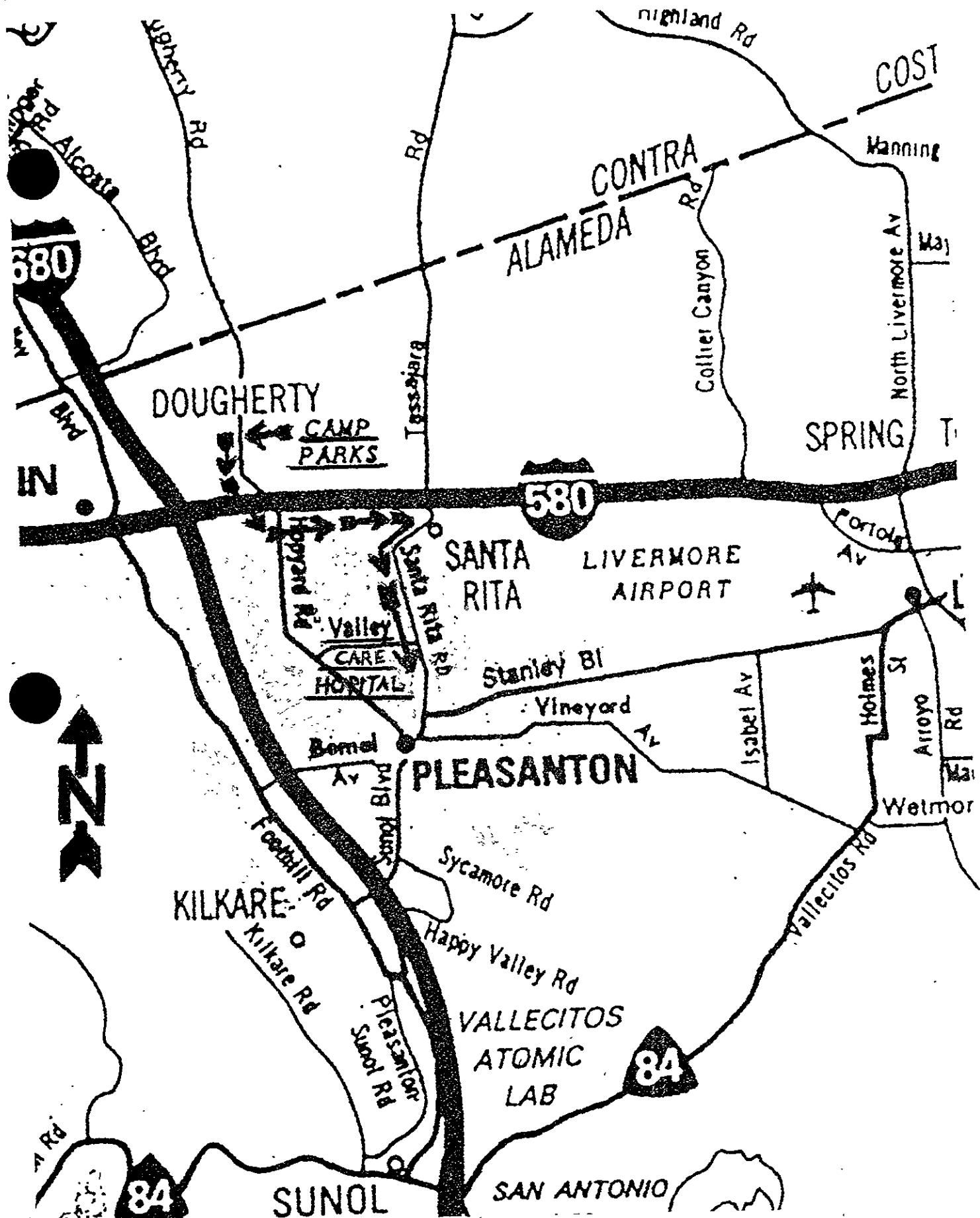
Local Emergency Contacts

	Base	Off-Base
	<u>Phone</u>	<u>Phone</u>
Ambulance	828-3817	911
Fire Department	828-3817	911
Security	828-3817	911
Valley Care Hospital	847-3000	847-3000
Emergency Room	847-3000	847-3000
Camp Parks Headquarters	828-1822	828-1822

Hospital Emergency Route

Valley Care Hospital (Pleasanton):

From Camp Parks main gate, turn left at Douherty Road and take 580 East to Santa Rita (about two miles), then south on Santa Rita (about two miles) to Valley Care Hospital at the corner of Las Pacitas Road in Pleasanton. For futher directions, see next page.



EMERGENCY HOSPITAL ROUTE FROM CAMP PARKS
TO VALLEY CARE HOSPITAL
(AT 55 SANTA RITA ROAD, PLEASANTON)

All personnel on-site will have training and prior experience which meets the applicable requirements of 29 CFR 1910. All technical field personnel are included in the training program. The training program includes the following areas:

Chemical hazards

Physical hazards (heat stress, noise, material handling, etc.)

Hazard recognition

Toxicology

Permissible exposure limits

Personal protective equipment and protection levels

Respiratory protection (20 CFR 1910.134)

Air monitoring

Confined space entry

Corporate policies and site management

Supervision of health and safety

Site control

Health and safety plans

Medical monitoring

OSHA compliance

Personnel training

Decontamination

Drum handling

Hazardous material sampling

Practical exercises

Case histories

First Aid/CPR (Not all)

All subcontractor personnel on-site will have to demonstrate compliance with the training provisions specified in 29 CFR 1910 and those applicable to the operations they are contracted for.

In addition, all on-site personnel will receive site-specific training which includes:

Site chemical hazards (including acute and chronic effects)

Site control and decontamination procedures

Contingency plan

Protection levels and equipment

Proper use and maintenance of protective equipment

Review of health and safety plan

Emergency route to hospital

Periodic on-site safety meeting will be held to inform site personnel of changes in the Health and Safety Plan, air monitoring results, and other related information. Scheduling of these meetings will be at the discretion of the site HSO.

All regulatory personnel and visitors needing access to an active work area will be expected to demonstrate compliance with the applicable training requirements.

XIII

MEDICAL SURVEILLANCE

All on-site technical personnel are subject to a medical surveillance program which meets or exceeds the requirements or 29 CFR 1910.120. This includes an annual physical examination which includes:

Medical history

Physical examination

Urinalysis

Blood chemistry

Complete blood count including platelets and differential

Pulmonary function test

Resting EKG

Audiogram

Eye exam including glaucoma

All subcontractor personnel with the potential for chemical exposures are required to have medical monitoring which equals or exceeds the medical program required by 29 CFR 1910.120.

All personnel hired specifically for work on-site receive a pre-employment examination which includes a chest X-ray in addition to the examination described above. End of employment physicals will be conducted.

All visitors and regulatory personnel who will enter the active work areas are expected to demonstrate participation in a medical program which is equivalent to or exceeds the requirements of 29 CFR 1910.120.

XIV.

DOCUMENTATION

The record-keeping program will consist of the following documents containing the information described:

Training/Safety Meeting Record - This record will include the date, topics covered, persons attending, and the signature of the person holding the meeting or training session.

OSHA 200 Log - This record contains the required information for recording on-site injuries and illnesses. This record is generated by the corporate health and safety staff and a copy is maintained on-site.

Medical Records - Employee medical records are maintained by the examining physician and copies are kept at the facility clinic. No medical records are maintained on-site.

Air Monitoring - Direct reading results instrumentation and any full duration monitoring will be noted in the field log. Data included is location, time span, calibration method and results, instrumentation used, and weather factors. These logs will contain the name of the person generating this data.

APPENDIX A

The following is a detailed procedure for confined space operations.

Confined Space Certification

1. No person will enter a confined space without atmospheric testing of the space prior to entry and/or a Gas Free Certificate authorizing entry has been issued and posted. The designated GFE, GFET or contract GFE will issue a "Gas Free Certificate" as required by Navy directive and is limited by this instruction. In case of any doubt concerning conditions of a confined space, the GFET will consult with available experts concerning the confined space entry. These experts include the GFE, safety specialists, industrial hygienists or the contracted GFE. If a contracted GFE is requested to appear at the worksite, that contracted GFE will be asked to issue the Gas Free Certificates must be kept on file and available for audit by Code 09A.

2. The certificate will indicate the conditions found in the space when it was determined that the space was safe for entry and work. The certificate will also, instruct the employees of the necessary steps to maintain a safe atmosphere

within the space. Should a space be found "not safe for entry," a certificate will also, list the procedures necessary to make the space safe. Upon completion of the required procedures, the space will be retested and posted to indicate the results of the test. All instructions listed on the certificate must be met prior to entry or commencement of work. Should the conditions that existed at the time the certificate was issued changed, the certificate will be null and void and the space will be recertified before work can continue (example of changing conditions would include a significant change in the weather, a fuel spill in the area of a manhole, etc). Gas Free Certificates must include the period of time for which they are issued, not to exceed one work shift or until a break period, whichever is less.

3. The Gas Free Certificate is prepared in quadruplicate with copies distributed as follows:

a) White - Post at job site. NOTE: COPIES WILL BE POSTED AT THE MAIN ENTRANCE OR MOST COMMONLY USED ACCESS TO THE SPACE.

b) Yellow - Shop/unit requesting GFE services.

c) Pink - PWCSFB GFE (Safety Office).

d) Green - GFET Record file.

4. Certificate Content. GFE personnel will place, as a minimum the following information on all certificates they issue:

- a) Time and date of tests.
- b) Time and date of expiration.
- c) Time and date of testing/retesting of certificate.
- d) GFE personnel performing tests.
- e) Location of space tested.
- f) Type of operation to be conducted.
- g) Category of conditions found to exist within the space.
- h) Type and serial number of detection instrument used.
- i) Atmosphere test results.
- j) GFE personnel and work crew representatives signatures.

Contractor Operations

a. Navy GFE personnel WILL NOT certify contractor operations which involve confined or enclosed spaces, except where failure to do so would create an extreme emergency, endangering PWCSFB personnel and/or property, in which case authorization of the Commanding Officer will be obtained.

b. When Navy and contractor personnel occupy the same space, the space will be gas freed by the Navy GFE personnel; the contractor will be informed, in writing, that he retains legal obligation for inspection and testing required to ensure the safety of his/her personnel, and that contractor personnel will not be permitted to enter the space until testing by the contractor's competent person using appropriate equipment is completed and documented.

Instrumentation, Calibration and Maintenance of Equipment

a. Instrumentation. The Department Head will ensure that instrumentation and equipments consistent with the nature of the operations and potential exposures are available in sufficient and properly maintained quantities to meet the minimum needs. The GFE

will monitor the availability of equipments and other measuring devices. As a minimum, instruments for conducting the following tests will be available:

- 1) Oxygen content.
- 2) Combustible atmospheres.
- 3) Toxic atmosphere - capability to test for known or potential exposures (e.g. CO, Carbon Dioxide (CO₂), H₂S etc).
- 4) Air flow - capability to test ventilation systems to ensure prescribed ventilation is being maintained.

b. Calibration and Maintenance. Instruments will be maintained in good operating condition.

- 1) Instruments will be calibrated in accordance with manufacturer's instructions.
- 2) Instruments will be field calibrated before and after use.

3) Calibration records will be maintained for each instrument. NOTE: IF THE INSTRUMENTS FAIL TO RESPOND OR RESPOND INCORRECTLY TO KNOWN CALIBRATION CONDITIONS, THE INSTRUMENT WILL BE REMOVED FROM SERVICE.

Personal Protective Equipment (PPE) for Confined Space

a. To the maximum extent practicable, all hazards related to operational processes, equipment, facilities and environments will be eliminated or minimized through the application of engineering controls. Interim protective measures providing equivalent protection until completion of engineering controls will be developed and enforced where continued operation is necessary. If engineering controls are not feasible, alternative measures providing equal or better protection will be required. These alternative measures will include but not be limited to administrative controls, personal protective equipment, and appropriate combination thereof.

b. Personal protective equipment includes protective devices for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers designed to be worn or used as a barrier between the wearer and the harmful object or substances. This is a form of guarding, in this case not of the object or substances, but of the wearer. The use of PPE is not equivalent to or an adequate substitute for safety engineered equipment and/or safety consciousness.

c. If needed, the PPE will be furnished as government expense. It will be properly fitted; and it will be worn, used, and cared for by the person needing the protection.

d. The final decision as to the type of PPE required for the various applications will be made by the GFE or the Industrial Hygienist, and the requirement will be noted on the certificate. The determination will be based on conditions found within the space and on conditions which can reasonably be expected to develop within the space as a result of the work process.

Ventilation

a. The objective of exhaust ventilation in confined/enclosed spaces is to:

1) Remove contaminated air from the space and to maintain safe oxygen levels within the space.

2) Provide fresh respirable air to the space for breathing purposes.

3) Capture and remove contaminants within the space, or dilute such contaminants to safe levels that are within applicable PELs or LELs.

b. Air will not be blown into a space which contains flammable or toxic materials or atmospheres. The use of exhaust or drawing ventilation allows a controlled capture and disposal of contaminants and therefore is preferable to blowing air into a space.

c. Explosion proof blowers will always be used in the presence of flammable gases and vapors. The blowers and ducts will be grounded and bonded to prevent static electricity accumulation and discharges.

Accident Prevention. The best way that confined space accidents can be reduced or prevented, is to take precautionary measures. The following measures must be taken to reduce the probability and severity of confined spaces accidents:

a. Administer training to create an awareness of the many dangers and hazards in a confined space.

b. Label or post cautionary signs where practical, alerting personnel of potential hazards, classification of the space, requirement for testing, and who to contact of the certification of the space.

c. Statement on danger plate or decals:

DANGER

THIS SPACE MAY CONTAIN DANGEROUS GASES
OR LACK ADEQUATE OXYGEN FOR LIFE.

BEFORE ENTERING, SPACE TESTING MUST BE CONDUCTED
CALL UTILITY CONTROL @ 302-6171 FOR CERTIFICATION.

d. Prior to assigning employees to work in a confined spaces, ensure that spaces are properly inspected and certified by qualified GFE personnel and that the work can be accomplished safely.

e. Instruct all employees to read and follow the instruction of the confined space entry permit.

f. Ensure that all employees assigned to work in confined spaces are instructed in the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective equipments.

g. Ensure that hot work is not performed until the Fire Department has issued a HOT WORK PERMIT authorizing the hot work.
(Confined Space Entry Certificate is NOT a Hot Work Permit.)

h. Ensure that employees wear all appropriate required protection, and safety devices, even if exposure time is brief.

i. Ensure employees use only what is safe for the particular environment, e.g., use hand tools with minimum sparking potential, Explosion proof tools, and protective equipment where fumes and gases may be present. Ensure that "No Smoking" and other warning signs are appropriately posted and adhered to.

j. Post emergency phone numbers in conspicuous locations.

k. Verify that the means of summoning emergency assistance is available and operable.

l. Ensure that all employees are withdrawn from the space and the certificated voided if conditions pose hazards to entrants.

m. Ensure procedures of this instruction are followed for all confined space entries.

Emergency Procedures. Employee entry into confined spaces is controlled by the PWCSFB Gas Free Engineering Program. No entry will occur without atmospheric testing prior to each entry and/or a Gas Free Certificate (permit) except under extreme emergencies. Supervisors will ensure know and follow the procedures listed below during emergencies.

a. Emergency Entry. In extreme emergencies, the provisions outlined below will be observed and such entries must be reported to the GFE immediately, thereafter. When it is necessary to send an employee into a space not certified as being gas free or to contain sufficient oxygen, the employee will:

1) Be equipped air line respirator with emergency air supplies or self contained breathing apparatus.

2) Utilize personal protective equipment (PPE) appropriate to the operations and exposures.

3) Have an assigned attendant familiar with the task and the space who will remain outside the confined space and assist. The attendant will maintain positive visual or audible contact or other means of communication with the employee; and be equipped with a radio to call for assistance if an emergency condition should arise.

4) Enter the space ONLY when equipped with lifeline or harness or with safety belt attached to a "A" frame lifting device or retrieval lines. **NOTE:** RESCUE EFFORTS MUST BE MADE ONLY BY USE OF THE LIFELINE OR RETRIEVAL LINE UNTIL ASSISTANCE ARRIVES. ATTENDANTS MUST BE INSTRUCTED NOT TO ATTEMPT ANY RESCUE THAT INVOLVES ENTRY INTO THE CONFINED SPACE UNTIL THE UTILITY CONTROLLER HAS BEEN NOTIFIED AND ASSISTANCE ARRIVES. THERE MUST BE AT LEAST ONE PERSON WHO REMAINS OUTSIDE OF THE CONFINED SPACE AT ALL TIMES.

b. Confined Space Emergency Response Procedure. Over 50% of workers who died in confined spaces were attempting to rescue other workers. Rescuers must be trained in and follow established emergency procedures and use appropriate equipments and techniques. Rescue must be well planned. Unplanned rescue, such as when someone instinctively rushes into help a downed coworker, can easily result in a double fatality, or even multiple fatalities if there are more than one would be rescuers. In the event of a confined space emergency, the below mentioned procedures will be followed:

1) Call the Utility Control Center (302-6171).

A. Message: "EMPLOYEE IS DOWN IN A CONFINED SPACE
AT (GIVE LOCATION)"

2) Utility Control will immediately notify:

A. Fire and Rescue Department:

Camp Parks

Routine/Emergency 828-3817

B. PWCSFB Gas Free Engineer 302-5697

C. Respective Departments;

Camp Parks Headquarters 828-1822

NSCO Code 614 302-5483

c. Emergency Rescue Procedure. Any employee who enters a confined space to effect rescue and the corresponding attendant must be familiar with the procedures listed below. The person entering a confined space to effect rescue must be wearing an approved pressure demand, self contained breathing apparatus; harness, lifelines, and/or retrieval lines; and other personal protective equipment (PPE) applicable to the conditions.

1) If **EMERGENCY RESCUE IS TO BE ATTEMPTED**, the following procedures will be followed:

A. Remove victim with harness, lifeline, or retrieval lines if possible, rather than going into the area.

B. Get assistance before going into a confined space to rescue someone. Wear approved equipments described in paragraph (c) above.

C. Ensure that at least one person is stationed outside the space to assist in the job operations, maintain visibility and/or communications with rescuers, and prohibit unauthorized entry or work outside the area which may affect the conditions within the space.

D. Once the victim is out of the compromised area, give artificial respiration (if necessary).

E. Ensure medical services and treatment is readily available for personnel overcome or injured in a confined space.

Self Rescue and Rescue from Manhole (Manual Mechanical)

a. Self Rescue. Employees who work as authorized entrants will exit a permit required confined space without assistance (Self Rescue), in so far as it is physically possible, in the appropriate circumstances. The Self Rescue will often provide the entrant's best chances of escaping a space when a hazard is present. The time lost waiting for the attendant to summon rescuers, waiting for the rescue team to arrive, or waiting for the attendant to perform any other rescue duties can be the difference between life and death. Also, the narrowly configured openings of many confined spaces can make it very difficult for rescuers to pull or to carry out victims of the confined space hazards. Therefore, while it is recognized that Self Rescue will sometimes be impossible, PWCSFB Gas Free Engineering Program stresses the importance of Self Rescue as a means of saving lives and minimizing injuries.

b. Rescue of Employee from Manhole. This practice describes emergency procedures to be followed in rescuing an employee from a manhole. Work in a manhole is to be performed in accordance with

established PWCSFB work practices. Work performed in this manner will provide for maximum safety for employees and will drastically reduce the possibility of injury. Employees expected to work in a manhole will be familiar with and follow the procedures set forth in ventilation section above.

1) Equipment Requirement. A retrieval rope (1/2" minimum) in good condition should be used to lift the victim from the manhole. If available, a job vehicle with a lifting mechanism (derrick, aerial lift) could be moved to the manhole and used to aid in removing the victim.

2) Manual Manhole Rescue. When a victim is to be manually removed from a manhole, proceed in the following manner:

A. Place a retrieval rope around the victim, making one complete turn around the victim's body high up at the armpits, keeping the line high up under the armpits so it will not have to be raised later.

B. Tie three half hitches at the back of the victim in line with the spine.

C. Free the blower hose in the manhole (if any) so it can be pulled out from the grade level.

D. Ascend the manhole ladder, if any.

E. Pull the ventilation hose out of the manhole (if any).

F. Remove the manhole shield.

G. Pull the manhole ladder out of the manhole (if a portable ladder).

H. The rescuers will assume a position on opposite sides of the rescue rope at the grade level at the manhole opening.

I. Obviously, the effort required to rescue a person from a manhole by hand necessitates quite a sustained level of physical strength. To minimize the strain placed on the rescuers, they must coordinate their combined efforts very closely or else their work will be substantially dissipated and could result in further injury to the victim or themselves. An effective rescue will require that one of the participants in the rescue direct the overall effort and audibly signal the pulling cycle of the operation. Success will be achieved when the two rescuers coordinate their grip and maintain a continuous strain on the rope together.

J. The hands of the rescuers will be positioned to form a locking hold on the rope. The rescuer on the right of the rope should have the right hand forward, while the rescuer on the left will have the left hand forward and between both hands of the rescuer on the opposite side of the rope.

K. The rescuer will exert a steady pull on the rescue rope. This is accomplished by lifting and continuously changing the position of the hand furthest back on the rescue rope to the forward position. **NOTE:** THE TOTAL WEIGHT LIFTED BY EACH RESCUER IS HALVED WHEN THIS IS ACCOMPLISHED. HOWEVER, AT ANY GIVEN MOMENT, IF ONE RESCUER SLACKS OFF IN AN UNCOORDINATED FASHION, THE OTHER RESCUER IS BURDENED WITH THE EXTRA WEIGHT.

3) Mechanical Manhole Rescue

A. When an aerial lift device is available, follow the same procedure as outlined in Manual Manhole Rescue.

B. Position the aerial lift device over the hole. Fasten the rope previously attached to the victim to the lifting mechanism. As one rescuer operates the mechanical lifting device, the other rescuer will guide the victim safely through the manhole chimney.

CONFINED SPACE ENTRY PERMIT				EXPIRATION: (TIME/DATE)				
CLASS I, II, III, IV								
NAME OF ACTIVITY & LOCATION:								
TYPE OF OPERATION TO BE PERFORMED:								
TESTED BY: (GFE/T)				(TIME/DATE)				
TIME IN:		TIME OUT:		NUMBER OF ENTRANTS		DETECTION INSTRUMENT(S):		
(NOTIFY UTILITY CONTROLLER)						TYPE: _____ SERIAL #: _____		
						TYPE: _____ SERIAL #: _____		
R E A D I N G S								
ATMOSPHERIC TESTS	INITIAL TESTS	ADJACENT SPACE TESTS	RE-TEST / TIME	POST VENTILATION				P. E. L.
				15 MIN	30 MIN	45 MIN	OTHERS	
% OXYGEN								20% TO 22%
FLAM / COMB (% LEL)								ANY % OVER 10
TOXICITY								CO 50 ppm H2S 10 ppm
OTHERS								NH4 25 ppm SO2 5 ppm
THIS CERTIFICATE INDICATES THE CONDITIONS THAT EXIST AT THE TIME TESTS WERE CONDUCTED								
<input type="checkbox"/> NOT Safe for Personnel - NOT Safe for Hot Work				<input type="checkbox"/> SAFE for Personnel - NOT SAFE for Hot Work				
<input type="checkbox"/> NOT Safe for Personnel without Protection - NOT Safe for Hot Work				<input type="checkbox"/> SAFE for Personnel - SAFE for Hot Work				
<input type="checkbox"/> INERTED - NOT SAFE for personnel INSIDE - SAFE for Personnel and Hot Work OUTSIDE _____								
<input type="checkbox"/> PRESSED UP with (_____) NOT SAFE for Personnel INSIDE - SAFE for Hot Work OUTSIDE								
COMMENTS:								
SPECIAL REQUIREMENTS								
YES NO <input type="checkbox"/> <input type="checkbox"/> INSTRUMENT CALIBRATION & BATTERY CHECK <input type="checkbox"/> <input type="checkbox"/> FORCED EXHAUST VENTILATION REQUIRED <input type="checkbox"/> <input type="checkbox"/> LOCK OUT - TAG OUT - DE-ENERGIZE <input type="checkbox"/> <input type="checkbox"/> FIRE EXTINGUISHER <input type="checkbox"/> <input type="checkbox"/> RESPIRATORY PROTECTION <input type="checkbox"/> <input type="checkbox"/> PRE-ENTRY WORK CREW SAFETY BRIEFING				YES NO <input type="checkbox"/> <input type="checkbox"/> PPE: CLOTHING / HAND / HEAD / FOOT <input type="checkbox"/> <input type="checkbox"/> LIFELINES / HARNESS / HOIST / RETRIEVAL LINE <input type="checkbox"/> <input type="checkbox"/> INTRINSICALLY SAFE POWER TOOLS & LIGHTING <input type="checkbox"/> <input type="checkbox"/> STANDBY PERSON / BUDDY SYSTEM / FIRE WATCH <input type="checkbox"/> <input type="checkbox"/> AUDIO / VISUAL / RADIO COMMUNICATION <input type="checkbox"/> <input type="checkbox"/> RESCUE PROCEDURES REVIEWED				
(GFE/T):				WORK CREW REP:				
FIRE DEPARTMENT		NSCO: 302-3333 NASA: 263-3333 T.I.: 395-6911 DODHF: 892-4562 NRMC: 839-2333 H.PT.: 822-6779		UTILITY CONTROL: 302-6171 SAFETY/PWC GFE 302-5697/5690				
DISTRIBUTION: WHITE (JOB SITE) BLUE (SHOP/UNIT) YELLOW (PWC GFE) GREEN (GFET RECORD FILE)								

APPENDIX B
RESPIRATORY PROTECTION

Since respiratory protection may be needed in this project, its availability for employee requests is a must. It is expected that the entire operation will be requiring Level D protection, and at the most not beyond Level C. The kind of respirators is available will be of the following, in different name brands and models:

- Half mask
- Full face mask
- Powered air purifying
- Gas mask
- Airline respirator
- Pressure demand SCBA
- Emergency escape unit

The cartridges and filters to be used are indicated on the succeeding pages.

The cartridge and filter selection for respirators available for the project is as follows:

Description/

NOSH/MSHA Approval #

Hazards

Organic Vapors Cartridge/

Organic vapors

TC-23C-118/TC-23C-264

Acid Gases Cartridge/

Chlorine, hydrogen chloride, and sulfur

TC-23C-168/TC-23C-266

dioxide

Acid Gases & Organic

Organic vapors, chlorine, hydrogen

Vapors Cartridge/

chloride and sulfur dioxide

TC-23C-170/TC-23C-268

Ammonia-Methylamine cartridge/ Ammonia and methylamine

TC-23C-191/TC-23C-270

HEPA Organic Vapors,

Organic vapors; dusts, fumes and mists

Dusts, Mists, Fumes/

with a TWA not less than 0.05 mg/m³

TC-23C-303/TC-23C-305

asbestos containing dusts and mists,
prefilter and retainer caps optional.

HEPA Acid Gases, Dusts,
Fumes, Mists/
TC-23C-307/TC-23C-309

Chlorine, hydrogen chloride, sulfur dioxide; dusts, fumes and mists with a TWA not less than 0.05 mg/m³, asbestos containing dusts and mists, prefilter and retainer caps optional.

HEPA Organic Vapors,
Acid Gases, Dusts, Fumes,
Mists/
TC-23C-311/TC-23C-313

Organic vapors, chloride, hydrogen chloride, sulfur dioxide; dusts, fumes and mists with a TWA not less than 0.05 mg/m³, asbestos containing dusts and mists, prefilter and retainer caps optional.

HEPA Ammonia, Methylamine
Dusts, Fumes, Mists/
TC-23C-315/TC-23C-317

Ammonia or methylamine; dusts, fumes, and mists with a TWA not less than 0.05 mg/m³ asbestos containing dusts and mists; prefilter and retainer caps optional.

HEPA Filter Cartridge/
TC-21C-228/TC-21C-229

Dusts, fumes and mist with a TWA less than 0.05 mg/m³ asbestos containing dusts and mists, prefilter and retainer caps optional.

Dusts and Mists Filter/
TC-21C-179/TC-21C-217

Dusts and mists having a TWA not less than 0.05 mg/m³ or 2 mppcf. Filter assembly required.

Dusts and Mists Prefilter/
Approved

Dusts and mists having a TWA not less than 0.05 mg/m³ or 2 mppcf. Use with chemical absorption cartridge. Filter cover required.

Dusts, Fumes, Mists, Filter/
TC-21C-240/TC-21C-242

Dusts, fumes and mists having a TWA not less than 0.05 mg/m³ or 2 mppcf. Filter assembly required.

HEPA Prefilter

Use in conjunction w/HEPA cartridges

Qualifications for Use

a. Medical Qualification

1) Supervisors shall insure that all personnel required to use respirators shall have a respiratory protection physical examination prior to use and annually, thereafter.

2) The Occupational Medicine Division, Naval Hospital, Oakland shall determine medical qualifications policy and conduct the physical examination.

b. Fit Testing. Qualitative fit testing shall be required for use of negative pressure respirators. Personnel having facial hair interrupting the respirators facial seal shall not be fit tested. Fitting shall be initially accomplished by having the employee put on and adjust a respirator to fit and performing negative and positive pressure test. The test agent of choice shall be stannic chloride (irritant smoke) used with respirators with high efficiency particulate filters cartridges isoamyl acetate (banana oil) with respirators with organic vapor cartridges or saccharin with dust, mist and fume respirator can also be used when performing qualitative fit testing. Instructors shall ensure that personnel wear the respirators in the same manner as the respirator would be worn in the work area, e.g., straps are not abnormally tightened to ensure an adequate fit. Only trained personnel shall conduct the fit tested. The employee shall be exposed to the test agent while moving through a normal work type range of motion and observe if the chemical is detected.

c. Training. All supervisors shall ensure that personnel utilizing respirators shall be trained as specified in this project.

Training

a. Training shall be conducted by a qualified instructor. Training will usually be conducted by industrial hygienist or personnel who have attended NIOSH or OSHA courses on respiratory protection.

b. All supervisors and their personnel who will use or issue respiratory protection shall be instructed in its use.

c. Training shall include:

1) Information on airborne contaminants to which personnel may be exposed and the effect on health due to such exposures.

2) Discussion of the reason why a respirator is required in lieu of engineering controls and information concerning selection.

3) Proper selection of respirators and filter types, respirator capability, limitations and protection factors.

4) Description of respirators construction, operating principles and limitations.

5) Respiratory protection equipment issue procedures.

6) Instructions in pre use inspection, fitting the respirator properly, and operating principles.

7) Storage, inspection, maintenance and cleaning of respirators.

8) Significance of and requirements for maintenance of NIOSH/MSHA approval.

9) Method of denoting end of service life of filters and periodic replacement.

10) Training shall be conducted prior to use for supervisors and their employees utilizing respiratory protection and annually thereafter.

11) During training, personnel shall be given an opportunity to handle the respirator, have it fitted properly, test its face piece to seal, wear it in ambient air for a familiarity period, and wear it in a test atmosphere.

Respirator Fit Testing

a. Qualitative Fit Testing. The respirator is not functioning properly unless the air comes only through the cartridge(s), canister, or airline in the case of supplied air respirators. Each individual who is required to use a respirator shall be tested at time of initial fitting and annually thereafter except for those who work with or may be exposed to asbestos or lead which require semiannual testing. As a minimum, the following procedures shall be used to insure an adequate fit:

1) All respirators shall be donned in accordance with manufacturer recommendations.

2) The face piece seal shall be checked by the wearer each time the respirator is used. A positive or negative pressure test shall be used.

A. Positive Pressure Test. For most respirators place the palm of the hand or thumb over the exhalation valve and press lightly. Exhale gently to increase pressure inside the face piece. Respirator is properly fitted if no air leaks out around the edges and slight positive pressure can be felt inside the face piece.

B. Negative Pressure Test. Inhale while covering the cartridge or canister inlet lightly with the palm(s) of the hand(s) being careful to minimize pressure on the respirator. No air should leak into the face piece.

3) No respiratory protection equipment, except positive pressure supplied air hoods, where appropriate, shall be worn by individuals when conditions such as beards, sideburns, etc., prevent a good face seal. Where the user's facial hair, etc. interferes with the proper performance of the respiratory protection equipment, the user (employee) shall be removed/transferred from his position until he can be satisfactorily fit tested and protected. Other items which may interfere with proper fit of the respiratory protection equipment could be a skull cap which projects under the face piece, temple pieces on eye glasses, or the absence of one or both dentures.

4) During respirator fit testing, isoamyl acetate (banana oil), saccharin mist or irritant smoke shall be used to test for proper fit.

b. Quantitative Fit Testing. Respirators shall be quantitatively fit tested where facilities are available, and where legally required, respirators are used for protection against lead. Testing shall be conducted in accordance with the test equipment manufacturers instructions and in accordance with reference 15-1 of Navy regulations.

c. Recordkeeping. Respirator fit testing shall be documented and shall include the type of respirator, brand name and model, method of test and test date.

Maintenance and Care of Respirators

a. Inspection for Defects

1) All respirators shall be inspected routinely before and after each use. The respirator inspection shall include the condition of the face piece, head bands, valves, canister, and connection tubes, where applicable.

2) Respirators kept ready for emergency use shall be inspected after each use and at least monthly to assure that they are in satisfactory working condition. A record shall be kept of inspection dates and findings.

3) Self-contained breathing apparatus shall be inspected monthly. Air cylinders shall be fully charged according to manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

b. Cleaning and Disinfecting

1) Respirators, other than those for emergency use shall be turned in, cleaned, and disinfected as frequently as necessary, preferable daily, but at periods no longer than 30 days.

2) Respirators maintained for emergency use shall be cleaned and disinfected after each use.

3) Each respirator user should be briefed on the cleaning procedure and be assured that he/she will always receive a clean and disinfected respirator.

4) Cleaning procedures shall be in accordance with the procedures set forth by the manufacturer and relevant Navy regulations. The elements of the cleaning procedure shall be:

A. Disassembly of the respirator.

B. Cleaning of the respirator, in cleaner disinfectant or detergent solution. Cleaner disinfectant shall be chosen in accordance with manufacturer's recommendations or as specified by the Safety Manager (Code 09A).

C. Rinsing with clean, warm water.

D. Drying in a clean area. Air Drying preferred.

E. Inspection of component parts.

F. Assembly of the respirator and replacement with approved new parts as necessary.

G. Placing respirator in a clean plastic bag and sealing.

c. Repair

1) Replacement shall be done only by trained, experienced persons with parts designed for the respirator.

2) No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations.

3) Reducing or admission valves on regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

d. Storage

1) Cleaned respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals.

2) Respirators shall be packed or stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

e. Storage of Issued Respirators. Respirators issued to individuals shall be stored in a clean plastic bag, carton, or carrying case, as appropriate. The area selected for storage shall not be exposed to dust, sunlight, extreme heat or cold, excessive moisture or damaging chemicals, or in a location where they would be subjected to punctures.

Purchase

a. All respirators purchased shall have NIOSH/MSHA approval.

b. To ensure that all parts furnished are approved, i.e., they are identical to those in the original model, style, and number, all

replacement respirator component parts, filter, and cartridges shall be purchased from the same manufacturer who supplied the original respirator. Supervisors ordering replacement component parts for respirators shall include a "no substitute" clause in purchase requests, citing this instruction as the authority.

- c. Respirators purchases shall be approved by the HSO.

Surveillance of Work Area. Supervisors who assign personnel to operations requiring the use of respiratory protection shall inspect the operation frequently to ensure that personnel are utilizing respirators when required. Supervisors shall also inspect the operation to ensure conditions of employee exposure have not changed.

Respirator Issue.

- a. Respirators shall only be issued at PWC Tool Cribs.

- b. Personnel engaged in issuing respirators shall be trained and familiarized with each type of respirator available to ensure that the correct respirator is issued. In cases of uncertainty, assistance will be sought from the Code 09A Safety Office.

Respirator Use.

- a. Only respiratory protective equipment specified by the HSO

for this project shall be used.

b. Respirators shall be used as issued. No modifications or substitutions to issued equipment shall be permitted. Any modification, no matter how slight, will result in voiding of respirator approval.

c. Respirators shall be used only by the person for whom it was issued.

d. Respirators shall be inspected prior to each use. If the respirator is found to be damaged, the employee will bring the respirator to an appropriate tool crib for repair or replacement. Respirators infrequently used (including emergency use respirators) shall be inspected as least once a month.

e. Face fitting respirators shall not be worn when a condition, such as a beard or sideburns, or wearing a skull cap, prevents a good face seal.

f. The wearing of contact lenses with a respirator is not permitted. Individuals using corrective lenses shall not be permitted to wear respirators where the glasses temple bars interfere with the respirators seal.

Chapter 8 - Page 14

To: <i>S. Worthington</i>	From: <i>E. Hughes</i>
Co: <i>NAV / NPW</i>	Co: <i>DTSC</i>
Depl.:	Phone # <i>540 3848</i>
Fax # <i>302-5434</i>	Fax #

EPA ACTION GUIDES UNKNOWN ATMOSPHERES	
0-10% LEL	continue investigation
10-25% LEL	continue with caution
>25% LEL	LEAVE AREA IMMEDIATELY

EPA ACTION GUIDES UNKNOWN ATMOSPHERE	
0-5ppm	level C
5-500ppm	level B
500-2000ppm	level A

EPA ACTION GUIDES UNKNOWN ATMOSPHERES	
background (.02mR/hr)	continue investigation
3-5 times background	consult health physicist
>2mR/hr	potential hazard; leave area; consult health physicist

Note: If your meter is reading in cpm and you go above 3 times background (background for that site), then a health physicist should be consulted.

U.S. EPA Recommended Action Levels

HAZARD ^b	MONITORING EQUIPMENT ^c	MEASURED LEVEL	ACTION
Explosive atmosphere	Combustible gas indicator	< 10% LEL ^d	Continue investigation.
		10%-25% LEL	Continue onsite monitoring with extreme caution as higher levels are encountered.
		> 25% LEL	Explosion hazard. Withdraw from area immediately.
Oxygen	Oxygen concentration meter	< 19.5%	Monitor wearing self-contained breathing apparatus. NOTE: Combustible gas readings are not valid in atmospheres with <19.5% oxygen.
		19.5%-25%	Continue investigation with caution. Deviation from normal level may be due to the presence of other substances.
		> 25%	Fire hazard potential. Discontinue investigation. Consult a fire safety specialist.

Radiation	Radiation survey equipment	≤ 2 mrem/hr ^a	Radiation above background levels (normally 0.01-0.02 mrem/hr) ^b signifies the possible presence of radiation sources. Continue investigation with caution. Perform thorough monitoring. Consult with a health physicist.
		> 2 mrem/hr	Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of a health physicist.
Inorganic and organic gases and vapors	Colorimetric tubes Chemical-specific instruments, including halide meter, hydrogen sulfide detector, carbon monoxide monitor, and mercury meter	Depends on chemical	Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. ^c
Organic gases and vapors	Portable photoionizer Organic vapor analyzer 1) Operated in gas chromatography (GC) mode 2) Operated in survey mode	Depends on chemical	Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. ^c

^aBased on *Standard Operating Guides*. U.S. EPA, December, 1984.

^bThese are general classes of hazards. Not all components of these classes can be measured.

^cConsult manufacturers' literature for use limitations associated with the specific equipment and for the specific substances the equipment can detect. See Tables 7-1 and 7-2 for more complete descriptions.

^dLEL = lower explosive limit.

^emrem/hr = milliroentgen equivalent in man per hour.

^fSource: U.S. Nuclear Regulatory Commission Rules and Regulations, 10 CFR Chapter 1, Part 20.105.

^gSource: Sax, I.N. 1979. *Dangerous Properties of Industrial Materials*, Fifth Edition. p. 167. Van Nostrand Reinhold Company, New York.

^hPEL = OSHA permissible exposure limit.

REL = NIOSH recommended exposure limit.

TLV = threshold limit value.

See Table 6-4.

ATTACHMENT 1

FIELD ACTIVITIES LIST
(Sheet 1 of 2)

Directions: D indicates the D level of personnel protection; C indicates the C level or upgraded C level of personnel protection. Quantity of personnel protection items will be dependent upon number of on-site field personnel.

RESPIRATORY PROTECTION: None needed ()
() SCBA, Airline
() Air-purifying respirator
() Cartridge Type: _____
() Escape mask
() Other _____

HEAD, EYES& EAR PROTECTION:
(X) Safety glasses, Goggles
(X) Hard hat
() Face shield
() Ear plugs
() Other _____

PROTECTIVE CLOTHING: None needed ()
() Encapsulating suit
() Saranex coveralls
() Tyvek PE coveralls
() Tyvek coveralls
() Coveralls
() Other _____

GLOVES: None needed ()
() Inner gloves/liners Type: _____
() Work gloves Type: disposable, latex
() Outer gloves Type: _____
() Other gloves Type: _____

BOOTS:
(X) Steel toed/steel shank, work boots
() Overboots Type: _____
() Disposable booties Type: _____
() Other Type: _____

ATTACHMENT 1

FIELD ACTIVITIES LIST
(Sheet 2 of 2)

Directions: Check as appropriate and indicate quantity taken out. Write in any additional equipment that is not listed here.

MONITORING EQUIPMENT:

- photoionization detector
- 10.2 lamp 11.7 lamp other _____
- Radiation detector
- Oxygen deficiency/combustible gas detector
- Hydrogen cyanide detector
- Detector tubes

Type of detector tubes: _____

Other (such as hydrogen sulfide analyzer)

MISCELLANEOUS EQUIPMENT:

- First aid kit X _____
- Eyewash and/or shower X _____
- Absorbent material (if required) _____
- Adequate water supply X _____
- Fire extinguishers (if required) _____
- Hand-held alarm horns (if required) _____

ATTACHMENT 2
SAFETY MEETING SIGN-OFF SHEET

Meeting Held by: _____
Project No.: _____

Date: _____
Site/Facility: _____

ITEMS DISCUSSED

Hazard Evaluation:

Toxic Vapors	Yes	_____	No	_____
Explosivity	Yes	_____	No	_____
Radioactivity	Yes	_____	No	_____
O ₂ Depletion	Yes	_____	No	_____
Physical Hazards	Yes	_____	No	_____

Personal Protection to be Worn and Equipment to be Used

Yes _____ No _____

Decontamination Procedures:

Yes _____ No _____

EMERGENCY INFORMATION

First Aid	Yes	_____	No	_____
Hospital Route	Yes	_____	No	_____
Poison Control Center	Yes	_____	No	_____

Team Member, Signature

Date

ATTACHMENT 3-
SITE LOG

Site/Facility: _____

Team Member	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
(Date) / /	/ /	/ /	/ /	/ /	/ /	/ /

Enter time spent on-site (ONS), in off-site reconnaissance (OSR), decontamination procedures (DEC), office interview (OFC), or other field work.

ATTACHMENT 4
AUTHORIZED PERSONNEL TO ENTER SITE

Personnel

Responsibility

1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

ATTACHMENT 5

INDUSTRIAL HYGIENE SURVEY DATA

ACTIVITY: Navy Public Works Center, SFB DATE: _____

DEPARTMENT: Utilities, Code 650 POC: _____

LOCATION: NAS Alameda Storm Drain Line: IND. HYG: _____

OPERATION/PROCESS/DEFICIENCY DESCRIPTION:

<u>SAMPLE TYPE</u>	<u>MEASURED CONCENTRATION</u>	<u>TWA</u>	<u>PEL</u>
--------------------	-------------------------------	------------	------------

RECOMMENDED CORRECTIVE ACTION(S):

REFERENCES/NOTES:

Health and Safety Plan,

ATTACHMENT 6
PLAN ACCEPTANCE FORM

INSTRUCTIONS: This form is to be completed by each person prior to beginning work at the subject work site. THIS FORM IS TO BE RETURNED TO THE HEALTH AND SAFETY FILES, PWC, SAN FRANCISCO, CALIFORNIA.

Job No. _____
Project _____

By my signature below, I acknowledge that I have read and understand the contents of the proceeding Health & Safety Plan. I agree to perform my work in accordance with the plan.

Signed

Print Name

Company, Location

Date

cc: Health and Safety Program Manager
Health and Safety Files, PWC/SFB

ATTACHMENT 7
PLAN FEEDBACK FORM

Instructions: This form is to be completed by each person returning from work on the subject work site and returned to the Health and Safety Files, PWC SFB, San Francisco, California.

PROBLEMS WITH PLAN REQUIREMENTS:

UNEXPECTED SITUATIONS ENCOUNTERED:

RECOMMENDATIONS FOR FUTURE REVISIONS:

cc: PWCSFB Health and Safety Program Manager
Health and Safety Files

ATTACHMENT 8
ACCIDENT REPORT FORM
(Sheet 1 of 2)

FIELD SUPERVISOR'S REPORT OF ACCIDENT
(USE FOR ON-SITE ACCIDENTS OR EXPOSURES ONLY)

To: _____

From: _____

Telephone: ____/____-_____

Name of Injured/Ill Employee: _____

Date of Accident: _____ Time of Accident: _____

Exact Location of Accident: _____

Description of Accident: _____

Nature Of Illness or Injury and Part Of Body Involved: _____

Probable Disability (check one) .

- Fatal
- Lost work days (No. of days:____)
- Restricted activity (No. of days:____)
- No lost work days
- First aid only

ATTACHMENT 8—
ACCIDENT REPORT FORM
(Sheet 2 of 2)

ACTION(S) TAKEN BY REPORTING UNIT:

CORRECTIVE ACTION WHICH REMAINS TO BE TAKEN: (BY WHOM AND BY WHEN)

Name of Field Supervisor: _____
Signature: _____
Date: _____

Original to: PWC FILE (Health and Safety)



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

STEVE WORTHINGTON


for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of

March, 1992


Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

CARLITO D. REYES

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Director of Risk Management & Safety

918



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

MICHAEL JULIAN

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of

March, 19 92

Thomas W. Jones
Director of Risk Management & Safety

94c



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

YORK SO

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas L. Fowlesh

Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this *Certificate of Attendance* has been presented to

BILL CARTER

for *Successful Completion of*

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 1992


Director of Risk Management & Safety

99 E



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

HAROLD KAILHIWA

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas L. Finnesen

Director of Risk Management & Safety

99F



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

LARRY KELLEY

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Director of Risk Management & Safety

99c



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

ALVAN R. OKAMURA

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas H. Jones

Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

PACIFICO ICASIANO

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 1992

Thomas L. Joubert
Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

MARY NGUYEN

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 1902

Director of Risk Management & Safety

99 J



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

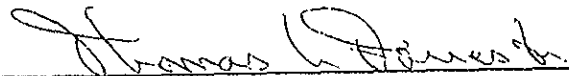
SAMSON DYSON.

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 1992


Director of Risk Management & Safety

74 b6



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

NORIO ESAKI

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas L. Jones

Director of Risk Management & Safety

94L



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

JOHN ATKINSON.

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of

March, 1902



Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

CARLOS BUTLER

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92

Thomas L. Jones
Director of Risk Management & Safety

N66



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

CHESTER KNOBLOCK

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92

Thomas H. Forest
Director of Risk Management & Safety

ebb



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

DON PASQUINI

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas V. Jones

Director of Risk Management & Safety

dp



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

JAMES WAYNE

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92

Thomas L. Forester
Director of Risk Management & Safety



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

STERLING MALBROUGH

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of

March, 19 02

Thomas L. Jensen

Director of Risk Management & Safety

91R



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

STAN LIM

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92

Thomas V. Duvick
Director of Risk Management & Safety

945



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

ROBERT B. WOO

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th

day of

March

, 19 92

Thomas L. Forest

Director of Risk Management & Safety

49 T



ERICKSON ENTERPRISES

May it be known that this *Certificate of Attendance* has been presented to


CECIL B. FOSTER.

for *Successful Completion of*

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92


Director of Risk Management & Safety

99 u



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

VIRGILIO PABROS

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92

Thomas L. Forester
Director of Risk Management & Safety

91 V



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to


JEFF CAIN

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 02


Director of Risk Management & Safety

W 69



ERICKSON ENTERPRISES

May it be known that this *Certificate of Attendance* has been presented to


LUPE GAYTAN

for *Successful Completion of*

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92



Director of Risk Management & Safety

94 X



ERICKSON ENTERPRISES

May it be known that this Certificate of Attendance has been presented to

JERRY GIBSON

for Successful Completion of

40 - Hour Hazwoper Training Course

Presented this

27th day of
March, 19 92



Director of Risk Management & Safety

941

Match 1 DB Rec# - 5,970 Dataset-Federal

Section :280.34

Reference:Title 40 | Part 280 | Subpart C

Keywords :Waste | Tank | Underground Storage Tank |

Spill | Release | Leak | Compliance | Reporting |

Notification | Recordkeeping | Closure

Full Text:

280.34 Reporting and recordkeeping.

Owners and operators of UST systems must cooperate fully with inspections, monitoring and testing conducted by the implementing agency, as well as requests for document submission, testing, and monitoring by the owner or operator pursuant to section 9005 of Subtitle I of the Resource Conservation and Recovery act, as amended.

(a) Reporting. Owners and operators must submit the following information to the implementing agency;

(1) Notification for all UST systems (280.22) which includes certification and installation for new UST systems (280.20(e)),

(2) Reports of all releases including suspected releases (280.50), spills and overfills (280.53), and confirmed releases (280.61);

(3) Corrective actions planned or taken including initial abatement measures (280.62), initial site characterization (280.63), free product removal (280.64), investigation of soil and ground-water cleanup (280.65), and correction action plan (280.66); and

(4) A notification before permanent closure or change-in-service (280.71). ★

(b) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used (280.20(a)(4); 280.20(b)(3)).

(2) Documentation of operation of corrosion protection equipment (280.31);

(3) Documentation of UST system repairs (280.33(f));

(4) Recent compliance with release detection requirements (280.45); and

(5) Results of the site investigation conducted at permanent closure (280.74). ★

(c) Availability and Maintenance of Records. Owners and operators must keep the records required either:

(1) At the UST site and immediately available for inspection by the implementing agency; or

(2) At a readily available alternative site and be provided for inspection to the implementing agency upon request. ★

(3) In the case of permanent closure records required under 280.74, owners and operators are also provided with the additional alternative of mailing closure records to the implementing agency if they cannot be kept at the site or an alternative site as indicated above.

Note: The recordkeeping and reporting requirements in this section have been approved by the Office of Management and Budget and have been assigned OMB Control No. 2050-0068.

[53 FR 37194, Sept. 23, 1988]

Date :09/23/1988

Section :280.71

Reference:Title 40 | Part 280 | Subpart G

Keywords :Waste | Tank | Underground Storage Tank |

Compliance | Closure | Notification

Full Text:

280.71 Permanent closure and changes-in-service. ☆

(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (b) and (c) of this section, or within another reasonable time period determined by the implementing agency, owners and operators must notify the implementing agency of their intent to permanently close or make the change-in-service, unless such action is in response to correction action. The required assessment of the excavation zone under 280.72 must be performed after notifying the implementing agency but before completion of the permanent closure or a change-in-service.

(b) To permanently close a tank, owners and operators must empty and clean it by removing all liquids and accumulated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with an inert solid material. ☆

(c) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with 280.72. N/A

Note: The following cleaning and closure procedures may be used to comply with this section:

(A) American Petroleum Institute Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks";

(B) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks," may be used as guidance for compliance with this section; and

(D) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard * * * Working in Confined Space" may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.

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Match 4 DB Rec# - 5,991 Dataset-Federal

Section :280.72

Reference:Title 40 | Part 280 | Subpart G

Keywords :Waste | Tank | Underground Storage Tank |

Compliance | Closure

Full Text:

280.72 Assessing the site at closure or change-in-service. ★

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release. The requirements of this section are satisfied if one of the external release detection methods allowed in 280.43(e) and (f) is operating in accordance with the requirements in 280.43 at the time of closure, and indicates no release has occurred.

(b) If contaminated soils, contaminated ground water, or free product as a liquid or vapor is discovered under paragraph (a) of this section, or by any other manner, owners and operators must begin corrective action in accordance with Subpart F. ★

[53 FR 37194, Sept. 23, 1988]

Date :09/23/1988

Match 6 DB Rec# - 5,993 Dataset-Federal

Section :280.74

Reference:Title 40 | Part 280 | Subpart G

Keywords :Waste | Tank | Underground Storage Tank |

Compliance | Closure | Recordkeeping

Full Text:

280.74 Closure records.

Owners and operators must maintain records in accordance with 280.34 that are capable of demonstrating compliance with closure requirements under this Subpart. The results of the excavation zone assessment required in 280.72 must be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the UST system out of service; ★

(b) By the current owners and operators of the UST system site; or

(c) By mailing these records to the implementing agency if they cannot be maintained at the closed facility.

[53 FR 37194, Sept. 23, 1988]

Date :09/23/1988

7001

Match 7 DB Rec# - 15,965 Dataset-California

Section :25298

Reference:Health and Safety Code

Keywords :Waste | Underground Storage Tank | Compliance | Closure | CA Statutes

Full Text:

25298. (a) No person shall abandon an underground tank system or close or temporarily cease operating an underground tank system, except as provided in this section.

(b) An underground tank system which is temporarily taken out of service, but which the operator intends to return to use, shall continue to be subject to all the permit, inspection, and monitoring requirements of this chapter and all applicable regulations adopted by the board pursuant to Section 25299.3, unless the operator complies with subdivision (c) for the period of time the underground tank system is not in use.

(c) No person shall close an underground tank system unless the person undertakes all of the following actions: ★

(1) Demonstrates to the local agency that all residual amounts of the hazardous substance or hazardous substances which were stored in the tank system prior to its closure have been removed, properly disposed of, and neutralized.

(2) Adequately seals the tank system to minimize any threat to the public safety and the possibility of water intrusion into, or runoff from, the tank system.

(3) Provides for, and carries out, the maintenance of the tank system as the local agency determines is necessary for the period of time the local agency requires.

(4) Demonstrates to the appropriate agency, which has jurisdiction over the site, that the site has been investigated to determine if there are any present, or were past, releases, and if so, that appropriate corrective or remedial actions have been taken. ★

(Amended by Stats. 1989, Ch. 1397.)

Match 8 DB Rec# - 15,966 Dataset-California

Section :25298.5

Reference:Health and Safety Code

Keywords :Waste | Underground Storage Tank | Compliance | Closure | CA Statutes

Full Text:

25298.5. The analysis of any material which is required to demonstrate compliance with this chapter shall be performed by a laboratory accredited by the department pursuant to Chapter 7.5 (commencing with Section 1010) of Part 2 of Division 1. ★

(Added by Stats. 1988, Ch. 894.)

C 001

Match 9 DB Rec# - 27,167 Dataset-California

Section :2620

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Applicability | Hazardous Substance | Monitoring | Release |
Reporting | Closure
Full Text:

Article 2. General Provisions

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this chapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure of underground storage tanks; and specify variance request procedures.

(b) Owners and operators of one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable permit. Both the owner and operator are responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

(c) Counties shall implement the regulations in this chapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this chapter within its boundaries in accordance with section 25283 of the Health and Safety Code. Local agencies shall issue an operating permit for each underground storage tank, for several underground storage tanks, or for each facility, as appropriate, within

jurisdiction.

(d) Owners and operators of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this chapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this chapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this chapter. In addition, owners and/or operators of underground storage tanks subject to this

chapter must comply with the release reporting requirements of Article 5 of this chapter, the repair and upgrade requirements of Article 6 of this chapter, the closure requirements of Article 7 of this chapter, and the underground storage tank operating permit application requirements of Article 10 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25283, 25284, 25299.1, 25299.3 40 CFR 280

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

Match 10 DB Rec# - 27,196 Dataset-California

Section :2670

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Compliance | Closure | Applicability |
Release | Leak
Full Text:

Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of section 2671 shall apply to those underground storage tanks in which the storage of hazardous substances has ceased but the underground storage tank will again be used for the storage of hazardous substances within the next 12 consecutive months. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances.

(c) The permanent closure requirements of section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this chapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to section 2671 or

2672, the applicable containment and monitoring requirements of Articles 3 or 4 of this chapter shall continue to apply.

(f) At least thirty (30) days prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with section 2671 or 2672 of this article, as appropriate.

(g) Underground storage tanks that have emitted an unauthorized release do not qualify for temporary closure pursuant to section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made which would make the underground storage tank capable of storing hazardous substances in accordance with the permit issued by the local agency.

(h) Underground storage tanks that have emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of section 2672 of this article.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to section 13304 of the Water Code and any other applicable law or regulations.

Authority: Health and Safety Code 25299.3, 25299.7
Reference: Health and Safety Code 25298 40 CFR 280.70,
280.71, 280.73

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

100 #

N/A

Match 12 08 Rec# - 27,198 Dataset-California

Section :2672

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Closure | Compliance | Sampling |
Analysis | Release
Full Text:

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either subsection (b) of this section for underground storage tank removal or subsection (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate subsection of this section. Subsections (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank shall be inerted to levels that shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed. This documentation shall be submitted within the time frame specified by the local agency.

(4) An owner of an underground storage tank or any part thereof that is destined for a specific reuse shall advise the local agency, within the time frame specified by that agency, of:

- (A) The name of the new owner of the underground storage tank;
(B) Name of the new operator;

- (C) The location of use; and
(D) Nature of use.

(c) Owners of underground storage tanks subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

(3) The underground storage tank, except for piping that is closed pursuant to subsection (2) of this section, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration shall be based on soil sample analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, soil samples shall be taken immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank in accordance with section 2649. A separate sample shall be taken for each 20 lineal-feet of trench for piping.

(2) If the underground storage tank or any portion thereof is not removed, at least one boring shall be taken as close as possible to the mid point beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank. If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.
(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298 40 CFR 280.71

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

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N/A

N/A

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N/A

Match 1 DB Rec# - 15,965 Dataset-California

Section :25298

Reference:Health and Safety Code

Keywords :Waste | Underground Storage Tank | Compliance |

Closure | CA Statutes

Full Text:

25298. (a) No person shall abandon an underground tank system or close or temporarily cease operating an underground tank system, except as provided in this section.

(b) An underground tank system which is temporarily taken out of service, but which the operator intends to return to use, shall continue to be subject to all the permit, inspection, and monitoring requirements of this chapter and all applicable regulations adopted by the board pursuant to Section 25299.3, unless the operator complies with subdivision (c) for the period of time the underground tank system is not in use.

(c) No person shall close an underground tank system unless the person undertakes all of the following actions:

(1) Demonstrates to the local agency that all residual amounts of the hazardous substance or hazardous substances which were stored in the tank system prior to its closure have been removed, properly disposed of, and neutralized.

(2) Adequately seals the tank system to minimize any threat to the public safety and the possibility of water intrusion into, or runoff from, the tank system.

(3) Provides for, and carries out, the maintenance of the tank system as the local agency determines is necessary for the period of time the local agency requires.

(4) Demonstrates to the appropriate agency, which has jurisdiction over the site, that the site has been investigated to determine if there are any present, or were past, releases, and if so, that appropriate corrective or remedial actions have been taken.

(Amended by Stats. 1989, Ch. 1397.)

Match 2 DB Rec# - 15,966 Dataset-California

Section :25298.5

Reference:Health and Safety Code

Keywords :Waste | Underground Storage Tank | Compliance |

Closure | CA Statutes

Full Text:

25298.5. The analysis of any material which is required to demonstrate compliance with this chapter shall be performed by a laboratory accredited by the department pursuant to Chapter 7.5 (commencing with Section 1010) of Part 2 of Division 1.

(Added by Stats. 1988, Ch. 894.)

Section :2620

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Applicability | Hazardous Substance | Monitoring | Release |
Reporting | Closure
Full Text:

Article 2. General Provisions

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this chapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure of underground storage tanks; and specify variance request procedures.

(b) Owners and operators of one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable permit. Both the owner and operator are responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

(c) Counties shall implement the regulations in this chapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this chapter within its boundaries in accordance with section 25283 of the Health and Safety Code. Local agencies shall issue an operating permit for each underground storage tank, for several underground storage tanks, or for each facility, as appropriate, within their jurisdiction.

(d) Owners and operators of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this chapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this chapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this chapter. In addition, owners and operators of underground storage tanks subject to this

chapter must comply with the release reporting requirements of Article 5 of this chapter, the repair and upgrade requirements of Article 6 of this chapter, the closure requirements of Article 7 of this chapter, and the underground storage tank operating permit application requirements of Article 10 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7
Reference: Health and Safety Code 25283, 25284, 25299.1, 25299.3 40 CFR 280

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

Section :2670

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Compliance | Closure | Applicability |
Release | Leak

Full Text:

Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of section 2671 shall apply to those underground storage tanks in which the storage of hazardous substances has ceased but the underground storage tank will again be used for the storage of hazardous substances within the next 12 consecutive months. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of a stored material during normal operating practice prior to the planned input of additional hazardous substances.

(c) The permanent closure requirements of section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this chapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to section 2671 or 2672, the applicable containment and monitoring requirements of Articles 3 or 4 of this chapter shall continue to apply.

(f) At least thirty (30) days prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with section 2671 or 2672 of this article, as appropriate.

(g) Underground storage tanks that have emitted an unauthorized release do not qualify for temporary closure pursuant to section 2671 of this article until the underground storage tank owner demonstrates to the local

agency's satisfaction that appropriate authorized repairs have been made which would make the underground storage tank capable of storing hazardous substances in accordance with the permit issued by the local agency.

Underground storage tanks that have emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of section 2672 of this article.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to section 13304 of the Water Code and any other applicable law or regulations.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298 40 CFR 280.70, 280.71, 280.73

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

Section :2671

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Compliance | Closure | Monitoring |
Inspection

Full Text:

2671. Temporary Closure Requirements

(a) The owner or operator shall comply with all of the following requirements to complete and maintain temporary closure of an underground storage tank:

(1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank shall be inerted, as often as necessary to levels that will preclude an explosion or to such lower levels as may be required by the local agency.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and the test results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.

(4) Except for required venting, all fill and access openings and piping shall be sealed utilizing locked caps or concrete plugs.

(5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank unless the power services some other equipment which is not being closed such as the impressed current cathodic protection system.

(b) The monitoring required pursuant to the permit may be modified by the local agency during the temporary closure period. In making a decision to modify such monitoring the local agency shall consider the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet been detected.

(c) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to verify that the temporary closure measures are still in place. Such inspection shall include at least the following actions:

(1) Visual inspection of all locked caps and concrete plugs.

(2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to subsection (a)(3) of this section.

(d) The owner may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in

sections 2662, 2663, and 2664.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298 40 CFR 280.70

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

Division :2672

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Closure | Compliance | Sampling |
Analysis | Release

Full Text:

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either subsection (b) of this section for underground storage tank removal or subsection (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate subsection of this section. Subsections (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank shall be inerted to levels that shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed. This documentation shall be submitted within the time frame specified by the local agency.

(4) An owner of an underground storage tank or any part thereof that is destined for a specific reuse shall advise the local agency, within the time frame specified by that agency, of:

(A) The name of the new owner of the underground storage tank;

(B) Name of the new operator;

(C) The location of use; and

(D) Nature of use.

(c) Owners of underground storage tanks subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage

tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

The underground storage tank, except for piping that is closed pursuant to subsection (2) of this section, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration shall be based on soil sample analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, soil samples shall be taken immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank in accordance with section 2649. A separate sample shall be taken for each 20 lineal-feet of trench for piping.

(2) If the underground storage tank or any portion thereof is not removed, at least one boring shall be taken as close as possible to the mid point beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long diagonal side of the tank. If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298 40 CFR 280.71

HISTORY:

1. Amendment of section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

Date :08/09/1991

Match 1 DB Rec# - 27,184 Dataset-California

Section :2649

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank | Hazardous Substance | Well | Construction | Sampling | * SEE PAGES 4 1/2 5/5 Compliance | Release | Analysis | Monitoring | Ground Water Full Text:

2649. Well Construction and Sampling Requirements

(a) Owners of existing underground tanks who utilize a qualitative release detection method shall comply with the requirements of this section and any applicable requirements of sections 2644, 2647, and 2648 of this article.

(b) The installation of all monitoring wells and the drilling of all other borings shall be in accordance with local permitting requirements or, in their absence, with the following requirements:

(1) All monitoring wells and all other borings shall be logged during drilling according to the following requirements:

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5, and 6, published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention: Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225);

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation;

(C) All wet zones above the water table shall be noted and accurately logged. Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log; and

(D) Geologic logs shall be described by a professional geologist or civil engineer, who is registered or certified by the State of California, and who is experienced in the use of the Unified Soil Classification System or by a technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals, provided that the professional must review the logs and assume responsibility for the accuracy and completeness of the logs.

(2) All drilling tools shall be thoroughly steam cleaned immediately before each boring is started;

(3) All well casings, casing fittings, screens, and all other components that are installed in a well shall be thoroughly cleaned before installation;

(4) Soil and water sampling equipment and materials used to construct a monitoring well shall be compatible with the stored hazardous substance and shall not donate, capture, mask, or alter the constituents for which analyses will be made. All perforated casings used in the construction of monitoring wells shall be factory perforated;

(5) Drilling fluid additives shall be limited to

inorganic, non-hazardous materials which conform to the requirements of subsection (b)(4) of this section. All additives used shall be accurately recorded in the boring

Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 calendar days for possible analysis for contaminating or interfering constituents;

(7) If evidence of contamination is detected by sight, smell, or field analytical methods, drilling shall be halted until a responsible professional determines if further drilling is advisable;

(8) All borings which are converted to vadose zone monitoring wells shall have the portion of the boring which is below the monitored interval sealed with approved grout;

(9) All borings which are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with an approved grout. All slurry-type grouts used to seal an abandoned boring or an abandoned well shall be emplaced by the tremie method; and

(10) All monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering. Surface seals may be required by the local agency.

(c) When installing a vadose zone or ground water monitoring well, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by reviewing all available water level records for wells within one mile of the site. Existing site ground water levels shall be established either by reviewing all available water level measurements taken within the last two years at all existing wells, within 500 feet of the underground storage tank which are perforated in the zone of interest, or by drilling at least one exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient, if possible, and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than ten feet from the underground storage tank;

(2) The exploratory boring may be of any diameter capable of allowing the detection of first ground water;

(3) The exploratory boring shall be drilled to first perennial ground water, or to a minimum depth of 20 feet for vadose zone monitoring wells, or to a minimum depth of 30 feet for ground water monitoring wells if permitted by site lithology;

(4) If ground water is encountered, and ground water monitoring is the monitoring method, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section; and

(5) If ground water is encountered, but ground water monitoring is not the monitoring method, or if the exploratory boring does not encounter ground water, the boring shall be sealed in accordance with the provisions of subsection (b)(9) of this section.

(d) In addition to the requirements of subsection (b) of this section, all ground water monitoring wells shall be designed and constructed according to the following minimum requirements:

(1) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the bottom level of the underground storage tank. However, wells shall not extend through locally extensive impermeable zones that are below the water table and that are at least five feet thick. In these situations, the well shall be terminated one to two feet into the impermeable zone;

(2) Ground water monitoring wells shall be designed and constructed as filter packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well;

(3) Ground water monitoring well casings shall extend to the bottom of the boring and shall be factory perforated from a point of one foot above the bottom of the casing to an elevation which is either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation;

(4) All well casings shall have a bottom cap or plug;

(5) Filter-packs shall extend at least two feet above the top of the perforated zone except where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones or where the ground surface is less than ten feet above the highest anticipated ground water level, the local agency may reduce the height of the filter pack so long as the filter pack extends at least to the top of the perforated zone. Under such circumstances, additional precautions shall be taken to prevent plugging of the upper portion of the filter pack by the overlying sealing material;

Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of two inches which are installed in a boring whose diameter is at least four inches greater than the outside diameter of the casing;

(7) Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction (Reference Bulletins 74-81 and 74-90 on Water Well Standards are available from the Department of Water Resources, Sacramento);

(8) Seventy-two or more hours following well construction, all ground water monitoring wells shall be adequately developed and equilibrium shall be established prior to any water sampling;

(9) Well heads shall be provided with a water-tight cap and shall be enclosed in a surface security structure that protects the well from surface water entry, accidental damage, unauthorized access, and vandalism. Traffic lids shall be clearly marked as monitoring wells; and

(10) Pertinent well information including well identification, well type, well depth, well casing diameters (if more than one size is used), and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(e) In addition to the requirements of subsection (b) of this section, all vadose zone vapor monitoring wells shall be constructed and sealed as follows:

(1) Well casings for vapor monitoring shall be fully perforated except for the portion adjacent to a surface seal and that portion used as a free liquid trap;

Surface seals for vapor wells that are completed no more than five feet below the bottom of the underground storage tank and which are above any free water zones may be required at the discretion of the local agency on a site-specific basis;

(3) If surface seals for vapor wells are completed in or below a potential free water zone, the seal shall not extend below the top of the underground storage tank; and

(4) Vapor wells need not be sealed against infiltration of surface water if constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface.

(f) Undisturbed (intact) soil samples shall be obtained from all borings for the installation of monitoring wells and all other borings and analyzed according to the following minimum requirements, unless the local agency waives this requirement under this subsection:

(1) Borings shall be drilled and sampled using accepted techniques which do not introduce liquids into the boring and which will allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using acceptable techniques, the requirement for soil sampling may be waived by the local agency provided, however, that installation of the vadose zone or ground water monitoring system shall be completed; and provided further, that once below the water table, borings need not be advanced using the same method that was used in the vadose zone;

Soil samples shall be obtained at intervals of five feet or less and at any significant change in lithology, beginning at the ground surface. Sampling is not required in unweathered bedrock which has little or no permeability;

(3) A soil sample shall be obtained at the termination depth of a dry boring regardless of the spacing interval;

(4) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide any specified replicate analyses; ★

(5) Soil samples shall be acquired, prepared, preserved, stored, and transported by methods that are appropriate for the objectives of the investigation which safeguard sample integrity and satisfy the requirements of subsection (g) of this section;

(6) Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative or qualitative results. Lower detection limits shall be verified by the laboratory;

(7) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then samples shall be analyzed for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents;

(8) If hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations

(background concentrations shall be applicable only if the constituent occurs naturally at the site), further soil analysis is not necessary pursuant to this subsection. The hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations and the owner or operator shall comply with subsection (9) of this section. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment; and

(9) If soil analysis indicates that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank pursuant to Article 3, 6 or 7 of this chapter.

(g) The qualitative release detection method shall include consistent sampling and analytical procedures, approved by the local agency, that are designed to ensure that monitoring results provide a reliable indication of the quality of the medium (e.g., ground water, soil-pore liquid, soil vapor, or soil) being monitored. Some acceptable procedures are listed as references in Appendix I, Table C of this chapter. At a minimum, the owner or operator shall provide a written detailed description, to be specified in the permit and to be maintained as part of the records required under section 2712 of Article 10 of this chapter, of the procedures and techniques for:

(1) Sample collection (e.g., purging techniques, water level, sampling equipment, and decontamination of sampling equipment);

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain-of-custody control.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292 40 CFR 280.43

HISTORY:

1. New section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

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Section :2650

Reference:Title 23

Keywords :Water | Underground Storage Tank | Tank |
Hazardous Substance | Reporting | Release | Leak |
Applicability | Compliance | Spill | Operating | Monitoring
Full Text:

Article 5. Release Reporting and Initial Abatement Requirements

2650. Reporting and Recording Applicability

(a) The requirements of this article apply to all owners or operators of one or more underground storage tanks storing hazardous substances.

(b) The owner or operator shall record or report any unauthorized release from the underground storage tank, and any spill or overflow, in accordance with the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(c) The owner or operator of an underground storage tank with secondary containment shall record any unauthorized release described in section 25294 of the Health and Safety Code in accordance with section 2651 of this article.

(d) Owners or operators subject to the requirements of this article shall record all spills and overfills in accordance with the requirements of section 2651 of this article.

The owner or operator of an underground storage tank shall report to the Board any unauthorized release described in section 25295 of the Health and Safety Code, and any of the following conditions according to section 2652 of this article:

(1) Any unauthorized release recorded under subsections (c) or (d) of this section which the owner or operator is unable to cleanup or which is still under investigation within eight hours of detection;

(2) The discovery by the owner or operator, local agency, or others of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;

(3) Unusual operating conditions observed by the owner or operator including erratic behavior of product dispensing equipment, the sudden loss of product from the underground storage tank, or an unexplained presence of water in the tank, unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced; and

(4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

(5) The reporting requirements of this article are in

addition to any reporting requirements specified by section 13271 of Division 7 of the California Water Code and other laws and regulations.

Authority: Health and Safety Code 25299.3, 25299.7
Reference: Health and Safety Code 25294, 25295 40 CFR 280.52

HISTORY:

1. Repealer filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

2. New section filed 8-9-91 as an emergency; effective upon filing (Register 91, No. 34). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed.

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