April 23, 1990

Marvin T. Miiura, Ph.D., Director
Office of Environmental Quality Control
State of Hawaii
465 S. King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miharu:

Subject: Fort Street Mall Reconstructed Sewers
Honolulu, Hawaii, DWH: 2-1-2(13)

This letter is a Notice of Negative Declaration for the Fort Street Mall
Reconstructed Sewers, Honolulu, Hawaii, pursuant to Chapter 343, HRS. The
construction of the proposed project between Queen and Merchant Streets will
involve the use of private funds and City lands. Should the project between
Pauahi and Hotel Streets be required, the construction will involve the use of
City funds and City lands. This notice of determination was based on an
environmental assessment prepared by the Division of Wastewater Management and
after consulting with other agencies and individuals. Four (4) copies of the
Notice of Negative Declaration/Environmental Assessment are attached. The
pertinent data for this notice are as follows:

1. Proposing Agency - Department of Public Works, City and County of
   Honolulu.

2. Proposed Action - The proposed projects consist of the installation of
   approximately 336 feet of 12-inch sewer mains and, if required,
   approximately 300 feet of 10-inch sewer mains along the Fort Street Mall
   between Queen and Merchant Streets, and between Pauahi and Hotel Streets,
   respectively. The proposed site is located in the Downtown, business
   area of Honolulu.

Environmental impacts are primarily short-term relating to construction
activities which will interfere with normal pedestrian traffic. Moderate
impact on business is expected from this project and construction
activities must be controlled at the site to reduce impacts to the
adjacent business establishments. Air quality and ambient noise level
may be affected during construction. Construction activities will impact on the underground utilities, especially gas. However, construction plans have been reviewed by the utility companies and coordination during construction with these companies will be required to minimize any utility disruptions.

The contractor will be required to mitigate the impacts during construction by following State and County regulations to controlling dust and noise, posting warning signs and covering or barricading trenches when required for safety.

Long-term impact will be the provision of adequate sewer capacity to accommodate existing and planned sewage flows for the Downtown Fort Street Mall area.

3. Determination - After preparing an environmental assessment and consulting with other agencies and individuals, we have determined that the proposed project will not have a significant impact on the environment, and an Environmental Impact Statement will not be prepared.

4. Reasons Supporting Determination - Reasons and conclusion supporting the determination are based on the following criteria. The proposed project will not:

- destroy any archaeological, historical or cultural resources;
- directly affect any rare or endangered species, flora or fauna;
- conflict with the State's environmental policies and goals expressed in Chapter 344, HRS;
- affect the economic or social welfare of the community or state;
- involve an environmentally sensitive area;
- degrade environmental quality.

The proposed wastewater improvements will support planned developments designated on the Development Plan Land Use Map and is consistent with the Development Plan Public Facilities Map.

5. Contact Person - Richard Leong
   Division of Wastewater Management
   Department of Public Works
   Honolulu Municipal Building, 14th Floor
   650 S. King Street
   Honolulu, Hawaii 96813
   Telephone No. 527-5863

Very truly yours,

(Signed)

SAN CALLEJO
Director and Chief Engineer

Attach. (4 copies)
cc: Department of General Planning
    Department of Land Utilization
ENVIRONMENTAL ASSESSMENT
FOR
* FORT STREET MALL RECONSTRUCTED SEWERS *
HONOLULU, HAWAII
TAX MAP KEYS: 2-1-2 (13)

This document is prepared pursuant to Chapter 343, H.R.S.

PROPOSING AGENCY: Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

RESPONSIBLE OFFICIAL: SAM CALLEJO
Director and Chief Engineer

DATE 4-25-90

PREPARED BY:
DIVISION OF WASTEWATER MANAGEMENT
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I. DESCRIPTION OF THE PROPOSED ACTION AND STATEMENT OF OBJECTIVES

The proposed projects consist of the installation of approximately 336 feet of 12-inch sewerline along the Fort Street Mall between Queen and Merchant Streets, and, if required, approximately 300 feet of 10-inch sewerline between Pauahi and Hotel Streets, as shown on figures 1, 2, and 3.

The existing sewers that traverse along the Fort Street Mall between Queen and Merchant and Pauahi to Hotel Streets were constructed in the early 1900s. The sewer section between Merchant and Hotel Streets were reconstructed during the 1968 Fort Street Mall Renovation. The existing sewers between Queen and Merchant Streets are considered to be at capacity. It requires frequent maintenance due to the age of the pipes and recent sewage leakages at several business structures in the area. Upon construction completion of the 25 story Pan Pacific Plaza First Interstate Tower Office Complex located at the former Kress Department Store property, the existing sewers will be inadequate to take the additional flows from this development. The sewer section between Hotel and Pauahi Streets is considered adequate for the currently approved City Development Plan for the area.
However, a proposed Development Plan amendment considered in the 1990 Annual Amendment Review to increase the building height limit in a portion of Downtown from 350 feet to 500 feet has been initiated by the City Department of General Planning. Should this amendment be approved, a proposed sewer project to upgrade the Hotel to Pauahi Streets segment may be required (figure 3).

The objective of the project is to provide sewers with adequate capacity to effectively accommodate the existing and planned sewage flows from the various downtown properties that are connected to the Fort St. Mall sewer system (figure 4).

II. AGENCIES CONSULTED IN THE ASSESSMENT PROCESS

The following agencies and organizations were requested to review and comment on the draft environmental assessment. The asterisk denotes those who responded in writing. All comments received are included at the end of this determination.

A. STATE OF HAWAII

* Department of Business and Economic Development

  Department of Health

  Department of Land and Natural Resources

* Office of Environmental Quality Control
B. CITY AND COUNTY OF HONOLULU
   * Board of Water Supply
   * Department of General Planning
   * Department of Land Utilization
     Department of Parks and Recreation
   * Department of Transportation Services
   * Fire Department

C. OTHERS
   Hawaiian Electric Company
   Hawaiian Telephone Company
   * Gasco, Inc.
   * Oceanic Cablevision
     Downtown Neighborhood Board No. 13
   * Downtown Improvement Association (DIA)
   * Mayor's Committee on Fort Street Mall
     Pan Pacific Plaza Bishop Street Associates

III. DISCUSSION OF THE ASSESSMENT PROCESS
This environmental assessment is prepared in accordance
with Section 11-200-9 of the Environmental Impact Statement
Rules, Title 11, Chapter 200, Department of Health, State
of Hawaii, pursuant to Chapter 343, Hawaii Revised
Statutes.
An assessment at the earliest practicable time is necessary in order to determine and evaluate any significant environmental impacts due to the proposed action. The potential impacts were identified and evaluated to determine the need for an environmental impact statement. Other agencies having jurisdiction or expertise were consulted during this assessment process.

IV. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The proposed sewer projects are located at the southwest end of the Fort Street Mall between Queen and Merchant Streets and at the center of the Mall between Pauahi and Hotel Streets. The area tributary to the sewer system is the downtown business area generally fronting the Fort Street Mall from Queen Street mauka beyond Vineyard Boulevard and segments along Merchant, Bethel, Pauahi and Hotel Streets (figure 4).

The City Department of Parks and Recreation recently had proposed to implement a renovation plan for Fort Street Mall between Beretania and Queen Streets. Fort Street Mall was first completed in 1968 as a major part of a long-range effort to improve the downtown environment for pedestrians. A draft environmental assessment (EA) for the Fort Street Mall Renovation was submitted to
interested agencies for review. No further action is anticipated at this time for this renovation project since the construction bids exceeded the funds available, and the City rejected all bids.

The EA for this project is being prepared because the existing sewers along the Fort Street Mall between Queen and Merchant Streets will exceed capacity upon completion of the Pan Pacific Plaza First Interstate Tower Building currently under construction.

V. GENERAL DESCRIPTION OF THE ACTION'S TECHNICAL, SOCIAL, ECONOMIC AND ENVIRONMENTAL CHARACTERISTICS

A. TECHNICAL CHARACTERISTICS

Only the Fort Street Mall Reconstructed Sewers project between Queen and Merchant Streets is recommended for construction at this time. This proposed project consists of the installation of approximately 336 feet of 12-inch sewers from an existing sewer manhole on Merchant Street, through the Fort Street Mall area to an existing sewer manhole makai of Queen Street. The proposed sewer alignment was designed to minimize interfering with the many existing underground utilities in the area. An underground gas utility system serves a group of customers in the area and is
interconnected with the GASCO utility network in the
downtown area. The project will disturb existing
structures such as concrete ramps, planter boxes and
electric lamp posts. The contractor will be required
to restore the project site to its original/existing
or better condition.

B. SOCIAL CHARACTERISTICS

Construction of both projects will not displace any
families. It will cause temporary disturbances due to
the construction activities along the Mall area which
is heavily used by shoppers and downtown workers
especially during the noon-lunch hours. Some vehicular
traffic congestion is anticipated at the intersection
of the Fort Street Mall with Queen and Merchant
Streets.

The Development Plan Land Use Map designates the Fort
Street Mall as Park and Recreation area and the
surrounding area as Commercial (figure 5). The
project is on the Primary Urban Center Development
Plan Public Facilities Map and is designated as a
publicly funded sewerline improvement to be
constructed within six years.

C. ECONOMIC CHARACTERISTICS

The Queen to Merchant Street sewer project is
estimated to cost about $100,000 and will be funded
entirely by the developer for the Pan Pacific Plaza

- 6 -
First Interstate Tower currently under construction. Construction of this project will not increase sewer user charges nor require direct assessment to the residents being served by their improvements. The Pauahi to Hotel Street sewer project is on hold pending future City Council action.

Construction of the Queen to Merchant Street sewer project is tentatively scheduled to start in fiscal year 1991 and should be completed within nine months.

D. ENVIRONMENTAL CHARACTERISTICS

The proposed sewers will be installed under the Fort Street Mall. There are no known natural, historic or archaeological sites located within the project area. However, should any evidence of archaeological findings be uncovered during excavation, construction will be halted and the State Historic Preservation Office will be notified.

The proposed sewer projects will be located underground, therefore there will be no impact on the aesthetic character of this area except during construction. There are no known endangered species of flora or fauna located within the project site. Since this is a developed area, construction of these projects will have no impact on wildlife.
VI. IDENTIFICATION AND SUMMARY OF MAJOR IMPACTS AND PROPOSED MITIGATION MEASURES

A. PRIMARY SHORT-TERM IMPACTS

Primary short-term impacts will result from construction activities. Use of construction equipment such as backhoes, trucks, compactors, and pavers will create noise, dust and exhaust emissions. Construction activities will partially interfere with normal pedestrian traffic. Vehicular traffic is prohibited along the Mall except for periodic service vehicles. An exception is vehicular access to the C. Brewer Building. The C. Brewer driveway on the Koko Head side of the Fort Street Mall between Merchant and Queen Streets shall be kept open and access provided at Merchant Street at all times, as stipulated in the "1988 Cumulative Supplement to the traffic code of the City and County of Honolulu 1976," article XXV, Pedestrian Malls, Sec. 15-25.1(2). Other utilities such as water, gas, electric and telephone installations may also be affected by the construction activities. Construction plans have been reviewed by the utility companies for coordination.

B. PRIMARY LONG-TERM IMPACTS

The primary long-term impact will be to provide effective accommodation of existing and future sewage
flows in the downtown business area for the estimated, ultimate tributary equivalent population.

C. MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACTS

Construction activities will be controlled by existing laws, an adequate pedestrian control plan, and the construction contract documents, and enforced through field inspections.

The Contractor will be required to comply with the provisions of Title 11, Chapter 43, "Community Noise Control of Oahu", of the State Department of Health Administrative Rules. A Community Noise Permit shall be obtained by the Contractor from the Department of Health for activities which generate noise in excess of 60 dbA (business, hotels, apartments). Construction activities which create "excessive noise" will normally not be allowed at the site before 7:00 a.m. and after 6:00 p.m. of the same day. Construction activities which emit noise in excess of 95 dbA, at or beyond the property line of construction will be restricted to the hours between 9:00 a.m. and 5:30 p.m. Activities which generate noise levels in excess of 95 dbA shall be prohibited on Saturdays. Activities which generate noise in excess of the
allowable noise levels are not allowed on Sundays and specific holidays listed in Title 11, Chapter 43, Section 6(e)(1)(A)(B)&(C). The Director of Health may specify conditions in the noise permit and may modify or revoke a permit at any time in order to protect the physical, mental, or social well-being of the public. The construction specifications will be prepared to permit the Contractor to perform his work at night when the Mall would be void of pedestrian traffic. Night work will require a noise variance permit.

During construction operations, the Contractor will be required to comply with Paragraph 11-60-5, Fugitive Dust, Chapter 60, Air Pollution Control, Title 11, Administrative Rules, State of Hawaii, pertaining to dust control. The Contractor will also be required to observe all other Federal, State and City rules and regulations concerning noise, air and water pollution during the construction period. The Contractor will be responsible for the maintenance of all equipment to minimize emissions. The Contractor will be required to comply with safety precautions and measures in the "Rules and Regulations Governing the Use of Traffic Control Devices" at both ends of the project sites adjacent to public streets adopted by the State Highway Safety Coordinator, and the "Manual on Uniform
Traffic Control Devices for Streets and Highways, Part IV Traffic Controls for Highway Construction and Maintenance Operation", U.S. Federal Highway Administration, dated 1981. The Contractor will be required to restore to their original or better condition all existing pavements and facilities such as planter boxes, concrete ramps and light poles after the project is constructed.

In the event that any previously unidentified sites or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings or walls are encountered, the contractor will contact the Historic Sites Office of the Department of Land and Natural Resources. Work in the immediate area should be delayed until the Historic Sites Office is able to assess the impact and make further recommendations for mitigative activity, if warranted.

VII. ALTERNATIVES CONSIDERED

There are two alternatives to be considered in this sewer project: (1) no action and (2) the proposed project.

(1) No Action: If no action is taken, the periodic backflows and leakages in the existing Fort Street Mall sewer system between Queen and Merchant

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Streets will cause this unsanitary condition to continue. In recent years, eight complaints have been recorded of backflows/leakages from businesses at the Mall area. The last backflow/leakage occurred in December 1989 at the First Federal Savings and Loan building. TV inspection of the Mall sewer line between Queen and Merchant Streets was made on January 21, 1990 and no defects were noted in the main line. Preliminary conclusion is that the existing sewerline between Queen and Merchant Streets requires replacement.

The existing sewerline between Pauahi and Hotel Streets may be inadequate if the building height limit for the area is increased from 350 feet to 500 feet.

(2) The proposed project:
   (a) To install approximately 336 feet of 12-inch sewers along the Fort Street Mall between Queen and Merchant Streets. Both ends of this project shall be connected to existing manholes located at the Street intersections with the
project. The existing sewerline will be plugged and abandoned in place after the new 12-inch sewer is installed. This alternative is estimated to cost approximately $100,000.

(b) To install approximately 300 feet of 10-inch sewers along Fort Street Mall between Pauahi and Hotel Streets. The existing sewerline will also be plugged and abandoned in place. This project is on hold pending future City Council action.

VIII. DETERMINATION

An evaluation of the above alternatives has resulted in the recommendation of the second alternative as the most feasible approach. Also, this draft assessment presently shows that the project will have no significant impacts on the environment and an Environmental Impact Statement is not required. Therefore, in accordance with the provisions of Chapter 343, Hawaii Revised Statutes, a Negative Declaration is determined to be in order.

IX. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

The following findings and reasons support the determination that there will be no significant effect on the environment as a result of this project:
A. There are no direct social or economic impacts resulting from the proposed action due to the subsurface nature of the project.

B. The impacts associated with construction activities are short-term and temporary only. All short-term impacts will be minimized in accordance with applicable City and County of Honolulu, State of Hawaii and Federal rules and regulations.

C. No rare or endangered wildlife or flora exists in the project area.

D. No archaeological, historical or cultural sites will be affected by the project. Should any possible significant archaeological findings be uncovered by construction work at the project site, appropriate measures for evaluating and determining courses of action will be available in the construction contract provisions.

E. The proposed sewer improvements conform with the City's Development Plan Public Facilities criteria and is designated on the Primary Urban Center Development Plan Map.

F. The primary benefit of this proposed project is to provide adequate sewer capacity to accommodate existing and planned sewage flows in the downtown area especially along the Fort Street Mall.

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COMMENTS FROM CONSULTED PARTIES
March 28, 1990

Mr. Sam Callejo
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Re: Draft Environmental Assessment for Fort Street Mall
Reconstructed Sewers project, TMK 2-1-2 (13)

Dear Mr. Callejo:

We have reviewed the draft Environmental Assessment for the Fort Street Mall reconstructed sewer project, and we have no comments to the proposed project.

Returned is our copy of the draft Environmental Assessment.

Sincerely,

[Signature]
Roger A. Ulveling

RAU: dqn
Enclosures
March 13, 1990

Mr. Sam Callejo
Department of Public Works
City and County of Honolulu
652 S. King St.
Honolulu, HI 96813

Dear Mr. Callejo:

The Office of Environmental Quality Control has reviewed the Draft Environmental Assessment for the Fort Street Mall Reconstructed Sewers and finds the document to be complete in accordance with Chapters 343 and 220 HRS.

We concur that no significant environmental impacts will result from this project and that a negative declaration is in order.

Thank you for the opportunity to review this draft document. Please send the final document in for publication in the OEOC bulletin at your convenience.

Please contact Steve Holman, staff planner, if you have any questions.

Sincerely,

[Signature]

Marvin T. Niura, Ph.D.
Director, Office of Environmental Quality Control

March 29, 1990

Dr. Marvin Niura, Director
State of Hawaii
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Niura:

Subject: Draft Environmental Assessment for Fort Street Mall Reconstructed Sewers
Honolulu, Hawaii

Thank you for your review and comments on the subject assessment. At this time, we will be filing a Negative Declaration.

If you should have any questions, please contact Richard Leong at 594-9463.

Very truly yours,

[Signature]

San Callejo
Director and Chief Engineer
MEMORANDUM

TO: MR. KAZU NAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR FORT STREET HALL RECONSTRUCTED SIDEWALKS, HONOLULU, HAWAII

Thank you for your review and comments on the subject assessment. We will submit construction plans to your Engineering Branch for review and approval.

If you should have any questions, please contact Richard Lonng at 927-1869.

Director and Chief Engineer
MEMORANDUM

TO:  SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
     DEPARTMENT OF PUBLIC WORKS

FROM:  BENJAMIN B. LEE, CHIEF PLANNING OFFICER
        DEPARTMENT OF GENERAL PLANNING

SUBJECT:  DRAFT ENVIRONMENTAL ASSESSMENT FOR
          FORT STREET MALL RECONSTRUCTED GARDENS
          HONOLULU, HAWAII

We have reviewed the Draft Environmental Assessment (EA) and concur with your preliminary determination that a Negative Declaration may be filed. We offer the following comments to update, correct and clarify the Draft EA:

1. A 1998 Annual Amendment Review proposal for increasing heights Downtown is cited on page 1 of the Draft EA. This amendment was rejected by the City Council. We have, however, initiated an amendment in the 1999 Annual Amendment Review to increase the height in a portion of Downtown to 500 feet in order to allow the transfer of development (floor area) from historic sites to other sites. This will encourage preservation of historic sites with an increase in permitted density in the Downtown area.

2. On page 5 the Draft EA incorrectly states that the Development Plan (DP) Land Use Map designates the site Preservation. The site is designated Park and Recreation.

3. Page 6 of the Draft EA states that the subject project is on the Primary Urban Center DP Public Facilities Map. It is designated as a publicly funded sewer line improvement within six years. However, we understand that the project will now be privately funded and implemented by the developers of the Pan Pacific Plaza First Interstate Tower.
March 30, 1990

MEMORANDUM

TO: MR. BENJAMIN B. LEE, CHIEF PLANNING OFFICER
    DEPARTMENT OF GENERAL PLANNING

FROM: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
    DEPARTMENT OF PUBLIC WORKS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR
    FORT STREET MALL RECONSTRUCTED SEWERS
    HONOLULU, HAWAII

Thank you for your review and comment on the subject assessment. The environmental assessment will be revised to incorporate your recommendations relating to the project. The information provided by your representative on your proposed amendment in the 1990 Annual Amendment Review to increase the building height limit in a portion of Downtown to 500 feet will enable my staff to evaluate the impact, if any, on the Fort Street Mall sewer system. Per discussion with your representative, no change is proposed on the Primary Urban Center DP Public Facilities Map, designated as a publicly funded sewerline improvement, even though the project now will be privately funded.

SAM CALLEJO
Director and Chief Engineer
MENORANDUM

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
   DEPARTMENT OF PUBLIC WORKS

FROM: DONALD A. Clegg, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR FORT STREET MALL
   RECONSTRUCTED SEWERS, HONOLULU, HAWAII; TAX MAP KEY: 2-1-2: 13

Based on the assessment, we concur that there are no significant environmental
impacts, and a Negative Declaration is warranted.

Donald A. Clegg
Director of Land Utilization

DAC: s1
0338N/4

March 19, 1990
DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
880 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK FASI
MAJOR

TE-1280/PL90.1.075

April 3, 1990

MEMORANDUM

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: ALFRED J. THIEDE, DIRECTOR

SUBJECT: FORT STREET MALL RECONSTRUCTED SEWERS
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 2-1-2

This is in response to your memorandum dated March 7, 1990, requesting our review and comments on the above subject.

The C. Brewer driveway on the Koko Head side of the mall between Merchant and Queen Streets shall be kept open and access provided to Merchant Street at all times, as stipulated in the "1988 Cumulative Supplement to the Traffic Code of the City and County of Honolulu 1976," Article XXV, Pedestrian Malls, Sec. 15-25.1(2).

Should you have any questions, please contact Wayne Nakamoto of my staff at 523-4190.

ALFRED J. THIEDE
March 21, 1990

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: LIONEL E. CAMARA, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
FORT STREET MALL RECONSTRUCTED SEWERS
HONOLULU, HAWAII

We have reviewed the subject material provided and have no additional comments.

Should you have any questions, please contact Battalion Chief Michael Zablan
of our Administrative Services Bureau at local 3838.

[Signature]
LIONEL E. CAMARA
Fire Chief

LEC/MZ:1m
City and County of Honolulu  
Department of Public Works  
600 South King Street  
Honolulu, Hawaii 96813  

March 15, 1990

Attention: Mr. Sam Gallego  
Director and Chief Engineer

Gentlemen:

Subject: Draft Environmental Assessment for  
Fort Street Mall Reconstructed Storm Sewers  
Reference: WWM 90-01

Please be advised that Gasco, Inc. maintains an underground gas utility system within the project vicinity, which serves a group of customers in the area and is interconnected with the utility network in the downtown area. We would appreciate the consideration of your planners and consultants during the project planning and design process to provide the necessary coordination during construction and minimize any potential conflicts with the proposed sewer reconstruction.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is required, please call me at 547-3774.

Very truly yours,

[Signature]

Steve M. Sava  
Manager, Engineering

EX:dlc

Mr. Edwin M. Sawa  
Manager, Engineering  
GASCO, Inc.  
P.O. Box 3379  
Honolulu, Hawaii 96812

March 20, 1990

Dear Mr. Sawa:

Subject: Draft Environmental Assessment for  
Fort Street Mall Reconstructed Storm Sewers  
Honolulu, Hawaii

Thank you for your review and comment on the subject assessment. Your underground gas utility system within the project vicinity will be addressed in the environmental assessment and identified in the construction plans and specifications. Construction plans (two sets) will be submitted to you for review and approval.

If you have any further comments or questions, please contact Richard Leong at 537-5663.

Very truly yours,

[Signature]

Sam Gallego  
Director and Chief Engineer

ccl: EIC Branch
March 12, 1990

City and County of Honolulu
650 South King St.
Honolulu, HI 96813

Attention: Mr. Sam Callejo
Director and Chief Engineer

Subject: Draft Environmental Assessment for Fort Street
Mall Reconstructed Sewers
Honolulu, Hawaii

Dear Mr. Callejo:

Concerning your letter of March 7, 1990 (WEW-90-07), Oceanic should not be affected by this project. Our only facilities within the project scope are contained in leased Hawaiian Telephone conduits and according to the drawings furnished, does not appear to be affected.

Should there be any questions regarding our facilities, I can be reached at 834-4145.

Sincerely,

Don Camacho
Director of Administration

DC:bs
Mr. Sam Callejo  
Director and Chief Engineer  
Department of Public Works  
City and County of Honolulu  
639 South King Street  
Honolulu, Hawaii 96813

Re: UPP 90-18 / Drafts Environmental Assessment Statement for Fort Street Mall Reconstructed Sewers

March 12, 1990

Mr. Sam Callejo:

Thank you for informing us of the sewer improvements which are being contemplated for the Fort Street Mall. We fully agree with the need to increase the system's capacity and are pleased with the Department's concern about maintaining pedestrian access during construction and speeding the work by allowing construction at night. It is our hope that this work can be coordinated with the renovation program planned for the Mall which is part of the new budget.

We are concerned that the segment between Pauahi and Hotel may be held back, pending City Council action to allow buildings of greater height and density in Downtown. We urge you to consider those increases as inevitable and proceed with that segment now. We believe that public support for rail transit and the realization that Downtown is running out of sites for new office buildings makes that change obvious. Downtown needs to make better use of the sites remaining and must prepare for new larger building which will replace many of the existing obsolete high rise buildings.

Enclosed is a map which shows where the potential office building sites are located. There are enough to last about a dozen more years. Please call me, if you need more information.

Very truly yours,

William A. Grant, AIA  
Executive Director

WAG:send

Cc: Richard Loong

---

Mr. William A. Grant, Executive Director  
Downtown Improvement Association  
701 Bishop Street, Suite 1000  
Honolulu, Hawaii 96813

March 29, 1990

Re: Drafts Environmental Assessment for Fort Street Mall Reconstructed Sewers  
Honolulu, Hawaii

Mr. William A. Grant:

Subject: Drafts Environmental Assessment for Fort Street Mall Reconstructed Sewers  
Honolulu, Hawaii

Thank you for your March 12, 1990 comments on the subject project. We are pleased to receive your full agreement with the need to increase the (sewer) system's capacity. Your concern on the proposed greater height and density in Downtown is noted. We are coordinating with the City's Department of General Planning on the proposed building height increases for Downtown and will ensure that sewer capacities are designed for the estimated ultimate tributary equivalent population.

A copy of your letter will be appended to the Environmental Assessment. If there are any questions, please contact Mr. Richard Loong at 521-3963.

Very truly yours,

[Signature]

SAM CALLEJO  
Director and Chief Engineer

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU  
639 SOUTH KING STREET  
HONOLULU, HAWAII 96813
March 9, 1990

Ms. Sam Callejo
Director and Chief Engineer
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Re. Draft Environmental Agreement for Fort Street Mall

Dear Mr. Callejo:

I received your request for input on the proposed P.A. for the Fort Street Mall sewer project addressed to me as Chairman of the Mayor's Committee on the Fort Street Mall. Please be advised that this committee was abolished, by the Mayor, earlier this year and as such we no longer have a committee from which to report.

As an effective property owner I will make my view known to the Downtown Improvement Association, who will be responding to your request.

Sincerely,

RICHARD W. GUSHMAN, II

RWG/phe [eareport.rwg]

cc: William Grant, Executive Director
    Downtown Improvement Association

808 524 4195  Amfac Building  Suite 200  700 Bishop Street  Honolulu Hawaii 96813
April 23, 1990

Marvin T. Miura, Ph.D., Director
Office of Environmental Quality Control
State of Hawaii
465 S. King Street, Room 104
Honolulu, Hawaii 96813

Dear Mr. Miura:

Subject: Fort Street Mall Reconstructed Sewers
Honolulu, Hawaii, TMR: 2-1-2(13)

This letter is a Notice of Negative Declaration for the Fort Street Mall Reconstructed Sewers, Honolulu, Hawaii, pursuant to Chapter 363, HRS. The construction of the proposed project between Queen and Merchant Streets will involve the use of private funds and City lands. Should the project between Pauahi and Hotel Streets be required, the construction will involve the use of City funds and City lands. This notice of determination was based on an environmental assessment prepared by the Division of Wastewater Management and after consulting with other agencies and individuals. Four (4) copies of the Notice of Negative Declaration/Environmental Assessment are attached. The pertinent data for this notice are as follows:

1. **Proposing Agency** - Department of Public Works, City and County of Honolulu.

2. **Proposed Action** - The proposed projects consist of the installation of approximately 336 feet of 12-inch sewer mains and, if required, approximately 300 feet of 10-inch sewer mains along the Fort Street Mall between Queen and Merchant Streets, and between Pauahi and Hotel Streets, respectively. The proposed site is located in the Downtown, business area of Honolulu.

Environmental impacts are primarily short-term relating to construction activities which will interfere with normal pedestrian traffic. Moderate impact on business is expected from this project and construction activities must be controlled at the site to reduce impacts to the adjacent business establishments. Air quality and ambient noise level...
may be affected during construction. Construction activities will impact on the underground utilities, especially gas. However, construction plans have been reviewed by the utility companies and coordination during construction with these companies will be required to minimize any utility disruptions.

The contractor will be required to mitigate the impacts during construction by following State and County regulations to controlling dust and noise, posting warning signs and covering or barricading trenches when required for safety.

Long-term impact will be the provision of adequate sewer capacity to accommodate existing and planned sewage flows for the Downtown Fort Street Mall area.

3. **Determination** - After preparing an environmental assessment and consulting with other agencies and individuals, we have determined that the proposed project will not have a significant impact on the environment, and an Environmental Impact Statement will not be prepared.

4. **Reasons Supporting Determination** - Reasons and conclusion supporting the determination are based on the following criteria. The proposed project will not:

   - destroy any archaeological, historical or cultural resources;
   - directly affect any rare or endangered species, flora or fauna;
   - conflict with the State’s environmental policies and goals expressed in Chapter 344, HRS;
   - affect the economic or social welfare of the community or state;
   - involve an environmentally sensitive area;
   - degrade environmental quality.

The proposed wastewater improvements will support planned developments designated on the Development Plan Land Use Map and is consistent with the Development Plan Public Facilities Map.

5. **Contact Person** - Richard Leong  
   Division of Wastewater Management  
   Department of Public Works  
   Honolulu Municipal Building, 14th Floor  
   650 S. King Street  
   Honolulu, Hawaii 96813  
   Telephone No. 527-5863

Very truly yours,

SAM CALLEJO  
Director & Chief Engineer

Attach. (4 copies)  
cc: Department of General Planning  
    Department of Land Utilization
ENVIRONMENTAL ASSESSMENT
FOR
SAFETY HAZARD REMOVAL
FORT BARRETT, OAHU, HAWAII

October 1990

Prepared by:  M & E Pacific, Inc.
Pauahi Tower, Suite 500
1001 Bishop Street
Honolulu, HI 96813

Prepared for:  U.S. Army Engineer Division
Pacific Ocean
Fort Shafter, Hawaii 96858
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1.0 PURPOSE AND NEED

1.1 SITE DESCRIPTION:

Fort Barrette is located approximately 0.5 mile south of the community of Makakilo on the Island of Oahu, in an area known as the Ewa Plain (see Exhibit A, Project Location), north of Barbers Point Naval Air Station. The site covers an area of approximately 28 acres and is comprised of three separately owned parcels (see Exhibit B, Project Site). The parcels are identified by the following Tax Map Key (TMK) numbers:

<table>
<thead>
<tr>
<th>Lot Number</th>
<th>TMK</th>
<th>Acres</th>
<th>Owner</th>
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<tr>
<td>5</td>
<td>9-1-16:21</td>
<td>12.232</td>
<td>A.B. Lau Estate</td>
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<tr>
<td>6</td>
<td>9-1-16:22</td>
<td>0.274</td>
<td>U.S. Army</td>
</tr>
<tr>
<td>7</td>
<td>9-1-16:2</td>
<td>15.792</td>
<td>C&amp;C Honolulu</td>
</tr>
</tbody>
</table>

The following land use policies govern the project:

- State Land Use: Agricultural
- General Plan: Parks and Recreation
- Zoning: F2 - General Preservation

The site has not been maintained for many years, and is subject to vandalism and deterioration. A number of features on the site have been determined to be potential safety hazards, and are in an unsightly condition.

The following features are considered hazardous. Each feature is identified with a location number in Exhibit B, Project Site. Photographs of most features are in Exhibit C.

Septic Tanks (#30, #31, #57):

A total of three underground septic tanks were found on the site. Septic tanks #30 and #31 are located near the generator building, and septic tank #57 is located near an underground plotting room. These tanks are constructed of concrete with metal covers. They are missing their covers and are safety hazards.

Concrete Boxes (#41, #44):

These concrete boxes appear to be electrical manholes. They were abandoned with some metal and wood debris left inside. Concrete box #41 is about 2' above ground and the metal cover missing. Concrete box #44 has a metal cover and is almost buried with top soil and vegetation.

Underground Fuel Tanks and Vaults (#28, #32):

There are two underground fuel tanks located just outside of the generator shed. Each of these tanks is situated within an underground vault that is accessible by a ladder. The tanks are cylindrical, approximately six feet
in diameter and about twenty five feet in length. Each tank has an estimated capacity of over 5,000 gallons. The concrete vaults are approximately 13 feet wide by 9 feet deep by 35 feet long.

Field sampling was conducted to determine the content of the diesel fuel tanks, and possible soil contaminations under the tanks. The study conducted on June 6, 1990 indicated that tank #28 (referred as Tank Site no. 1) has approximately 240 gallons of diesel and water mixture. Tank #32 (referred as Tank Site no. 2) is empty and dry. The soil under both of the tanks is clean and not contaminated. (see Appendix A) The soil material immediately outside of the vaults will be tested for contamination during removal. Soil contamination is not anticipated since the soil under the tanks has tested clean indicating that there has been no fuel leakage from the tanks.

Generator Shed (#29):

An underground generator building is located on the eastern side of the site, near the fuel tank vault. Most of the electrical equipment has been removed and the building appears to be in good structural condition. Access to the building is through a 4' by 8' double swing 1/4" thick metal door.

Reservoir (#46):

A large underground water reservoir was found near the middle of the site. The reservoir is about twenty to thirty feet deep. The capacity of this reservoir is estimated to be 80,000 gallons. Along the outside of the wall of the reservoir is another underground chamber which houses the piping manifold system for the reservoir. Metal covers are in place and are temporarily sealed.

1.2 PROPOSED ACTION:

The U.S. Army Corps of Engineers, Pacific Ocean Division, proposes to restore the site by remedying the present unsafe conditions, securing several structures, and removing the underground fuel storage tanks, under the Defense Environmental Restoration Program (DERP). This site is being developed by the City and County of Honolulu (C&C Honolulu) for Kapolei Park.

The proposed action is to:

a. Fill underground septic tanks (30, 31, 37) and concrete boxes (41, 44).

As required, stormwater run-off will be removed from the tanks prior to backfilling, and disposed of in an appropriate manner.

b. Remove underground fuel tanks (28, 32).

The waste oil (mixture of approximately 240 gallons of diesel and water) will be collected by and transported to an approved recycling facility. This facility must have a valid permit issued in accordance with the Solid Waste Disposal Act.
(SWDA), and must handle the waste in a manner that will protect human health and the environment. Recoverable oil could be reclaimed for beneficial purposes; unrecyclable waste must be disposed of in accordance with the SWDA.

In compliance with the U.S. Environmental Protection Agency (EPA) Federal Register 40 CFR Parts 280 and 281, Subpart F & G (Appendix B), the following procedures are required to close the underground storage tanks:

1. Tank #28 must be emptied and cleaned, with all waste oil removed. No oil removal remedy will be required at tank #32 since there is no presence of waste oil.

2. The tanks must be removed from the ground.

Since no soil contaminants were discovered under the diesel fuel tanks, no corrective measures to clean up the soil is anticipated before permanent closure.

c. Permanently seal openings of the generator shed (29) and the reservoir (46).

Since generator shed #29 was not a storage facility and is still in good condition, it can be secured in place by welding the metal entrance doors shut permanently. The water reservoir #46's cover plates were already temporarily sealed. However, the plates should be permanently sealed and painted to prevent any safety hazards.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION:

Under the Defense Environmental Restoration Program (DERP), Public Law 99-190, the Department of Defense (DoD) is required to determine whether any structures and/or activities generated at formerly used DoD sites require clean-up action because of the presence of hazardous/toxic wastes, unexploded ordinances, and/or unsafe debris. As part of the DERP, the COE conducted an initial site inventory survey of Fort Barrette, formerly known as Kapolei Military Reservation.

Fort Barrette initially served as an Army Signal Corps communications base; subsequently, it was selected as one of four sites for the installation of a battery of 16-inch naval guns. Construction was completed about 1933. In 1941, improvements were made to the installation to provide better protection against aerial bombardment. During this time, and later during World War II, additional improvements were made to the installation. In 1956, the installation was declared excess to the needs of the Army and it was turned over to the U.S. Navy, which in turn declared the property excess.

As a result of the site inventory report, a number of features on the site have been determined to be potential safety hazards. Since these features were the result of past DoD activities, under the DERP policies, the site was deemed eligible for remediation.
2.0 AFFECTED ENVIRONMENT

2.1 GEOGRAPHICAL CHARACTERISTICS:

Fort Barrette is shaped roughly like a truncated cone with the highest promontory rising to an elevation of 160 feet on the makai side and falling to an elevation of 115 feet at the front gate of Barbers Point Naval Air Station. The average slope is about 7 percent.

2.2 SOIL TYPE:

The soil is classified by the United States Department of Agricultural Soil Conservation Service as Lahaina silty clay (LaC3). The surface layer consists of approximately 18 inches thick of dark reddish-brown silty clay loam. The subsoil which is approximately 42 inches thick, consists of dark reddish-brown and dark red silty clay loam that has a subangular blocky structure. The substratum is coral limestone, sand or gravelly alluvium. The soil's acidic level varies from low to moderate (pH value is from 5.6 to 6.5).

The Lahaina soil series consist of well-drained soils. Permeability is moderate. Run-off is medium. The erosion hazard is severe, and most of the surface layer and parts of the subsoil have been eroded. The proposed action does not include grubbing or grading; therefore, it is not anticipated that erosion will be exacerbated.
2.3 COASTAL ZONE STANDARDS:

This project is not subject to Shoreline Protection Ordinance No. 4529; however, it is subject to stipulations of the National CZM (Coastal Zone Management) Act of 1972 (amended 16 U.S.C. 1451 et. seq.). Under this Act, Federal agencies are required to conduct their planning, management, development and regulatory activities in a manner consistent with State CZM programs. The Federal regulations for "Federal Consistency with Approved Coastal Management Programs" (15 Code of Federal Regulations [CFR], Part 930) establish the informational and procedural requirements which are binding on all Federal agencies.

2.4 FLOOD/TSUNAMI HAZARDS:

The site is located on a promontory; there are no perennial streams and the site is not located in a tsunami inundation area. According to the Flood Insurance Study, the area is classified D: Area of undetermined, but possible flood hazard.

2.5 FLORA AND FAUNA:

The U.S. Fish and Wildlife Service, and the Hawaii State Division of Forestry and Wildlife verify that no threatened or endangered species have been found on the site. Vegetation at the site is heavy and mostly of the dryland shrubbery variety. Various species of animals inhabit the area. Flora and fauna found at the site are identified in Appendix C, "Negative Declaration for Land Acquisition for Improvements at Kapolei Park".

Typical off-road vegetation
2.6 WATER QUALITY:

There are no groundwater resources suitable for domestic use in the project area, and there are no perennial streams in the vicinity.

2.7 AIR QUALITY:

The project is surrounded by agricultural lands currently used for the cultivation of sugar cane. There are no continual or point sources of air emissions at the site and aside from intermittent burning of the sugar cane fields, there are no other sources of air pollutants in the near vicinity.

There are several potential sources of air pollution located some distance from the site which might have some impact, depending on the prevailing wind conditions. They are: Kahe Generating Station, H-Power, refineries and other industrial activities in Campbell Industrial Park, Waipahu Incinerator and Naval Air Station (NAS), Barbers Point. The tradewinds normally keep air pollutants from these sources from becoming a problem in the area; however, air quality can be compromised by lack of trades or by the presence of Kona winds.

2.8 NOISE QUALITY:

The noise quality at the site on any given day consists of aircraft operations at NAS, Barbers Point, air traffic into Honolulu and Hickam Air Force Base, Coast Guard air operations, private aircraft, and surface transportation.

In regards to aircraft operations, the most common criteria for determining the acceptability of noise in a residential community is an outdoor level of 65 Ldn. Areas outside of the NAS do not exceed this.

2.9 HISTORIC PRESERVATION:

The Kualoa Archaeological Research staff conducted a reconnaissance survey (see Appendix C) at the site in May 1977. No surface artifacts, midden, or prehistoric structures were seen. At that time, at least twenty (20) abandoned, or partially abandoned, late historic military structures, including bunkers, barracks, and a chapel, were identified. On January 10, 1990 (see Appendix D), members of PEMCO staff verified the presence of these structures. Further coordination with the Corps of Engineers' Senior Archaeologist (Mr. C.F. Streck) was conducted in August 1990. The COE initiated coordination of a determination of no effect to historic properties with the Hawaii Preservation Office on August 20, 1990, in fulfillment of Section 106 of the National Historic Preservation Act of 1966, as amended under implementing regulations 36 CFR 800.

2.10 ACCESSIBILITY AND UTILITIES:

Access to the site is readily available via Farrington Highway and Barbers Point Access Road.

Electrical, water, and sewage facilities can be made available.
3.0 ALTERNATIVES

Three alternatives have been evaluated: the proposed action (project remediation), remediation with underground storage tanks abandoned in place, and no action. The proposed action includes removal of the USTs and sealing shut hazardous features to protect human health and the environment.

The U.S. Environmental Protection Agency has developed UST regulations to prevent leaks and spills, to detect releases and to remediate problems created by them. At present, the USTs are not in use and are subject to failure. As USTs age, the likelihood of failure increases and therefore, the possibility of environmental degradation increases. According to federal regulations, tanks installed prior to 1965 must have leak detection by December of 1989; therefore, the site is presently in non-compliance. The permanent closure of these USTs will put the site in compliance.

Two methods of closure are permitted, removal and abandonment in place. The abandonment in place alternative requires the removal of the product, dangerous vapors, sludge, appurtenance piping and devices, and filling the tank with inert material, such as sand or concrete.

When a tank is decommissioned in place, a permanent record of the tank location, date of disposal in place, and the method of conditioning the tank for disposal must be kept. Moreover, property owners and potential buyers must be informed of the presence of an abandon tank; implication is that liability does not necessarily end with the decommissioning of the tank. While abandonment is allowed when difficult terrain and expensive cost prevail, the preferred method of closure is removal.

The no action alternative would keep the project site "as is" and therefore, would be in violation of federal requirements.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 CORROSION:

Corrosion could be a problem in the future since the sealed openings (generator buildings, reservoirs, etc.) are exposed to the elements. This problem can be resolved by painting all exposed surfaces. The paint should be routinely maintained by the park personnel (CAC of Honolulu).

4.2 AIR QUALITY:

During the construction period, airborne emissions will consist of fugitive dust and construction vehicle and equipment emissions. Dust will be minimized by periodic sprinkling of water over the affected area. State laws regarding air pollution will govern the use of fuel burning equipment and internal combustion engines.
4.3 NOISE QUALITY:

Since the site is located in an open area with the nearest residential subdivision located approximately one-half mile away, noise during construction will not have a detrimental impact on the nearby residents.

4.4 HISTORIC PRESERVATION:

The proposed project shall have no effect to potentially significant cultural resources. Periodic monitoring of the construction project shall be performed by qualified archaeologists from the Corps of Engineers in order to insure that no adverse effects to unanticipated cultural resources occur.

5.0 SUMMARY and CONCLUSIONS

A number of features on the site have been determined to be a potential hazard to human health and the environment. The impacts of removal and/or modification of these features are both short term and long term. The long term impacts are beneficial in nature. The City and County of Honolulu is presently developing part of the site for a parkland. The proposed action will enhance the recreational attributes of this property. The removal of the UST's will also eliminate the possibility of an undetected release to the environment and put the project in compliance with federal requirements.

There are several potential short term impacts which will require mitigative measures:

1. A small area of vegetation will have to be cleared in order to facilitate removal of the UST's; however, it is anticipated that the vegetation will grow back. Noise, fugitive dust and construction equipment exhaust may have a temporary effect on the wildlife population, but the impacts will be minor. All Department of Health rules and regulations will be adhered to in order to mitigate these impacts.

2. It is possible to have an accidental release of tank contents, either during removal of the contents or during the removal of the tank. The contractor shall observe all safety requirements, follow procedures dictated by good engineering principles, and comply with Federal and State laws and regulations. The contractor shall provide an Accident Prevention Plan (APP) and an Activities Hazard Analysis (AHA) for situations anticipated to be encountered during the project.

In the event that a spill does occur, the contractor shall attempt to control, divert, and/or absorb the product in order to prevent further spread; and to secure the source in order to prevent additional releases. The contractor shall report all spills to the proper authorities and in a manner as required by State and Federal Law.

While the proposed action is not without adverse short term impacts, they are outweighed by the long term benefits both to human health and to the environment.
EXHIBIT A

Project Location
EXHIBIT B

Project Site
EXHIBIT C
Photographs
Septic Tank #30

Concrete Box #41
Fuel Tank Vault #28
(Tank within vault)

Fuel Tank Vault #28
(Piping)
Fuel Tank Vault #32

Fuel Tank Vault #32
(Piping)
Generator Shed #29

Reservoir #46
Fuel Tank Vault #32
(Filling Port)

Fuel Tank Vault #32
(Vent)
EXHIBIT D

Master Phasing Plan
Kapolei Park/Fort Barrette
APPENDIX A

Memorandum from MAE Pacific, Inc. of 6/12/90
and
Chemical Analysis Report
MEMORANDUM

June 12, 1990

TO: Files
FROM: BS
SUBJECT: Ft. Barrette - Field Sampling

Field sampling of two (2) fuel oil storage tanks on the project site was conducted on June 6, 1990 by Kay Town and Michelle Medeiros of AECOS, Inc., and Bert Saito and Tony Lau of M&E Pacific, Inc.

The project site is situated on the Ewa Plains just south of Makakilo City. Located on site is Ft. Barrette which is an abandoned Army fort acquired by the City and County of Honolulu for park development.

M&E was contracted to provide cost estimates, specifications and sketches for the removal of safety hazards at Fort Barrette. The removal of safety hazards includes the demolition and backfilling of eight (8) underground structures, sealing entries to three (3) hazardous structures and removal and disposal of two (2) diesel fuel tanks and its contents. (See Memorandum to Files dated October 13, 1989 for description of safety hazards on site).

Since the content of the diesel fuel tanks and the extent of soil contamination were unknown, a fair and equitable specification for tank closure could not be written. For this reason, M&E, together with U.S. Army Corps of Engineers, sub-contracted AECOS to sample and analyze the tanks' content and the soil within tanks' vaults.

After results are received from AECOS, M&E will complete contract specifications and sketches for tank closure at Fort Barrette.

SAMPLING METHODS AND DESCRIPTION

The diesel fuel tanks involved in the sampling are located Site No. 1 and Site No. 5 (see attached figures and photographs).

Sampling of each tank was accomplished through an uncapped vent pipe via a weighted glass vial which was lowered with nylon string.
MEMORANDUM
Fort Barrette
June 12, 1990
Page 2

Each tank lies in a concrete vault approximately 12.5' wide by 8.5' deep by 33' long (40' long for vault at Site No. 5). Each tank is approximately 6' in diameter and 25' long and its fuel capacity is approximately 5,300 gallons. Along one side of the fuel tank is a 6" wide by 30' long by 6" deep trench drain running along one side of the vault. The downstream end of the trench runs into a 1.5' by 1.5' by 1' deep sump drain with a 2" drain pipe.

The trench and sump of each vault contained soil which was subsequently sampled for fuel oil.

The tank at Site No. 1 had approximately 6.5 inches of liquid (240 gallons mixture of fuel and water) and the tank at Site No. 5 had no indication of liquid. The sampling bottle came up dry on the outside and, furthermore, the bottle had no smudges of oil residue (Note that the sampling was done at one end of the tank only. The tank may still contain oil residue).

MISCELLANEOUS ITEMS

AECOS indicated that the analyses of soil and liquid samples will be completed 30 days after the sampling date of June 6.
DEMOLITION PLAN OF STRUCTURE #5 (FUEL TANK)

SCALE: 1/8" = 1'-0"

NOTES:
- DEMOLITION SHALL INCLUDE, BUT IS NOT LIMITED TO WHAT IS SHOWN ON THIS PLAN.
- CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF EXISTING PIPE AND MISCELLANEOUS PIPING APPURTENANCES.
- REMOVE AND CAP EXISTING PIPING AND MISCELLANEOUS PIPING APPURTENANCES.

U.S. Army Corps of Engineers
Debris Removal at Fort Barrette

DEMOLITION PLAN OF STRUCTURE #5 (FUEL TANK)
Fort Barrette, Dahki
Prepared by M&E Pacific, Inc.
DEMOLITION PLAN OF STRUCTURE #1 (FUEL TANK)

NOTES:
DEMOLITION SHALL INCLUDE, BUT IS NOT LIMITED TO, WHAT IS SHOWN ON THIS PLAN.
CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF EXISTING PIPE AND MISCELLANEOUS PIPING APPURTEYNANCES.
REMOVE AND CAP EXISTING PIPING AND MISCELLANEOUS PIPING APPURTEYNANCES.

U.S. Army Corps of Engineers
Debris Removal at Fort Barrette

DEMOLITION PLAN OF STRUCTURE #1 (FUEL TANK)
Fort Barrette, Oahu
Prepared by: M&E Pacific, Inc.
FORT BARRETTE
PROPOSED SAFETY HAZARD REMOVAL
CHEMICAL ANALYSES

Prepared For:

M & E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813-3497

Prepared By:

AECOS, Inc.
970 North Kalaheo Avenue, A300
Kailua, Hawaii 96734

July 1990
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S) IMMEDIATELY FOLLOWING
FORT BARRETTE
PROPOSED SAFETY HAZARD REMOVAL
CHEMICAL ANALYSES

Prepared For:

M & E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813-3497

Prepared By:

AEGOS, Inc.
970 North Kalaheo Avenue, A300
Kailua, Hawaii 96734

July 1990
The subjects of the investigation were underground fuel storage Tank #1 and Tank #5 (figure 1) located at Fort Barrette, Ewa, Hawaii. Both tanks were located below ground level within concrete vaults. AECOS representatives, Michelle Medeiros and Kay Town, and M & E Pacific representatives, Bert Saito and Tony Lau, conducted the sampling event.

A laddered entry into the vault was available. Both tanks were raised above the floor of the vault by concrete supports. A drainage trench spanning the length of the tank at the edge of the vault contained soil. A total of eight (8) 40 ml vials, one vial between each concrete support, was collected from the drainage trench. The vials from each tank vault were respectively composited at AECOS to constitute a single soil for each tank. AECOS identified Tank #1 soil by log number [4455] and Tank #5 soil by log number [4456].

The contents of each tank were accessed through an uncapped vent protruding above the concrete vault at ground level. A 40 milliliter glass vial was lowered on a length of string into the tank. 1 - 500 ml glass bottle and 2 - 40 ml glass VOA vials of organic liquid were collected from Tank #1. AECOS identified Tank #1 organic liquid by log number [4454]. The vial deployed into Tank #5 was retrieved dry and unsoiled; no liquid was detected or collected from Tank #5.

AECOS submitted 2 - 40ml glass vials of soil for each Tank #1 and Tank #5 and 2 - 40 ml glass vials of organic liquid from Tank #1 to Brewer Analytical Laboratories in Hilo, Hawaii for analysis of purgeable halocarbon content using EPA method number 8010; no detectable quantities were reported. Results of purgeable halocarbon analyses are reported in Table I.

AECOS analyzed samples [4454], [4455], and [4456] for organochlorine pesticides and polychlorinated biphenyls (PCB) by EPA method number 8080. No detectable quantities were reported. Results of organochlorines pesticides and PCB analyses are reported in Table II.

The gasoline and diesel content of the organic liquid sample [4454] from Tank #1 was determined by AECOS by a modified version of EPA method number 8015 using the direct injection technique. Results of the total petroleum hydrocarbons analysis identified the organic liquid [4454] as diesel fuel. These results are summarized in Table III.

The soil samples from Tank #1 [4455] and Tank #5 [4456] were analyzed by a modified version of EPA method number 8015 using the headspace technique. Results of the total petroleum hydrocarbon analyses detected no quantifiable quantities of gasoline or diesel. Table III summarizes these results.
# TABLE I

Fort Barrette UST
Tank #1 Organic Liquid
Purgeable Halocarbon
(ug/L)

<table>
<thead>
<tr>
<th>Organic Liquid</th>
<th>Detection Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromobenzene</td>
<td>ND*</td>
</tr>
<tr>
<td>Bromodichloromethane</td>
<td>ND*</td>
</tr>
<tr>
<td>Bromoform</td>
<td>ND*</td>
</tr>
<tr>
<td>Bromomethane</td>
<td>ND*</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
<td>ND*</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>ND*</td>
</tr>
<tr>
<td>Chloroethane</td>
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<td>1,3-Dichlorobenzene</td>
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<td>Dichlorodifluoromethane</td>
<td>ND*</td>
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<tr>
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<td>1,2-Dichloroethane</td>
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<td>1,1-Dichloroethylene</td>
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<td>trans-1,2-Dichloroethylene</td>
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<td>trans 1,3-Dichloropropylene</td>
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<tr>
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<tr>
<td>Trichloropropane</td>
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<tr>
<td>Vinyl Chloride</td>
<td>ND*</td>
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* ND = Parameter not detected
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<tr>
<th>Soil</th>
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<tr>
<td>Bromoform</td>
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<tr>
<td>1,4-Dichlorobenzene</td>
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<td>ND*</td>
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<tr>
<td>trans 1,3-Dichloropropylene</td>
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<tr>
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</tr>
<tr>
<td>1,1,2-Trichloroethane</td>
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</tr>
<tr>
<td>Trichloroethylene</td>
<td>ND*</td>
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<tr>
<td>Trichloropropane</td>
<td>ND*</td>
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<tr>
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* ND = Parameter not detected
TABLE 1
Fort Barrette UST
Tank #5 Soil
Purgeable Halocarbon
(ug/L)

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<tr>
<th>Soil</th>
<th>Detection Limit</th>
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<tbody>
<tr>
<td>Bromobenzene</td>
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<td>Chloromethane</td>
<td>ND*</td>
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<td>ND*</td>
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<tr>
<td>1,2-Dichlorobenzene</td>
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</tr>
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<tr>
<td>1,1,2-Dichloroethylene</td>
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<td>trans-1,2-Dichloroethylene</td>
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<tr>
<td>1,1,1-Trichloroethane</td>
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</tr>
<tr>
<td>Vinyl Chloride</td>
<td>ND*</td>
</tr>
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* ND = Parameter not detected
## TABLE II A

Fort Barrette UST
Tank # 1 Organic Liquid

Organochlorine Pesticides and PCBs (μg/L)

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<th>Organic Liquid</th>
<th>Detection Limit</th>
</tr>
</thead>
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<tr>
<td>Alpha-BHC</td>
<td>ND* 0.1</td>
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<tr>
<td>Beta-BHC</td>
<td>ND* 0.2</td>
</tr>
<tr>
<td>Delta-BHC</td>
<td>ND* 0.1</td>
</tr>
<tr>
<td>Lindane</td>
<td>ND* 0.1</td>
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<tr>
<td>Chlordane</td>
<td>ND* 10</td>
</tr>
<tr>
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<td>ND* 2.5</td>
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<tr>
<td>4,4'DDE</td>
<td>ND* 2.5</td>
</tr>
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<td>4,4'DDT</td>
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</tr>
<tr>
<td>Endosulfan II</td>
<td>ND* 2.0</td>
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<tr>
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</tr>
<tr>
<td>Endrin</td>
<td>ND* 2.5</td>
</tr>
<tr>
<td>Endrin Aldehyde</td>
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<tr>
<td>Epoxide</td>
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<td>ND* 5</td>
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<tr>
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<td>ND* 3</td>
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<td>ND* 2</td>
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</tr>
<tr>
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<td>ND* 8</td>
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<td>Organochlorine Pesticides and PCBs (ug/L)</td>
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</tr>
<tr>
<td>------------------------------------------</td>
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<td><strong>TABLE II</strong> B</td>
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<tr>
<td>Fort Barretto UST</td>
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<td>Organochlorine Pesticides and PCBs (ug/L)</td>
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<tr>
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</tr>
<tr>
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<td>ND*</td>
</tr>
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Fort Barrette UST
Tank # 5 Soil
Organochlorine Pesticides and PCBs (ug/L)
TABLE III A

Fort Barrette UST
Tank # 1 Organic Liquid
Total Petroleum Hydrocarbons
(%)

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<tr>
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<th>Detection Limit</th>
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ND = Parameter not detected
**TABLE III  B**

Fort Barrette UST
Tank # 1  Soil

Total Petroleum Hydrocarbons
(mg/kg)

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<tr>
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<th>Detection Limit</th>
</tr>
</thead>
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<td>Soil</td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
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<td>0.5</td>
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<tr>
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ND = Parameter not detected
### TABLE III  C

**Fort Barrette UST**  
**Tank # 5  Soil**  

**Total Petroleum Hydrocarbons**  
**(mg/kg)**

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<tr>
<td>Diesel</td>
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</table>

ND = Parameter not detected
Figure 1
Map of project area (prepared by M & E Pacific).
Figure 2
Laddered entry to Tank #5 vault.
Figure 3

Sampling Tank #1 through uncapped vent.
Figure 4

Sampling Tank #5 through uncapped vent. Vial repeatedly retrieved empty and unsoiled.
Figures 5

Noting sampling events in the field. Ground level area over Tank # 5.
APPENDIX B

Part II

Environmental Protection Agency

40 CFR Parts 280 and 281
Underground Storage Tanks; Technical Requirements and State Program Approval; Final Rules
b. Small Businesses in the General Industry Sector. An estimated 24 to 41 percent of all USTs in the general industry sector are owned by firms with less than $5 million in assets. A typical small firm in this segment was assumed to have $200,000 in assets and not profits of less than $1 million. Overall, these firms represent about 12 percent of all UST-owning firms in the general industry sector. The cost of corrective action for non-plume release (i.e., no ground-water contamination) would leave a small general industry firm in severe financial distress, and the cost of corrective action for a plume release (i.e., contamination of ground water) would lead to the failure of the firm. Replacing a firm would cause a small general industry firm a temporary financial hardship, however, this hardship would not seriously threaten the survival of the firm.

c. Small Local Government Entities. Local government entities of all sizes own USTs. In 1982, the typical municipality with a population less than 30,000 had general revenues of $1.7 million. The costs of replacing even a single UST would represent 2 percent of the revenue of such a municipality, a significant expenditure that would have to be taken into account when planning. A corrective action that required cleaning up a dispersed plume would represent more than 13 percent of the general revenues of such a community, a sum that would probably cause severe financial distress.

In 1982, of the 30,000 local governments classified as counties, municipalities, and townships, 37,951 (approximately 97 percent) had populations of 30,000 or less. Almost all UST-owning local governments would, therefore, be subject to potentially substantial economic impacts under the technical standards rule if an UST release occurred.

C. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2050-0008. Reporting and recordkeeping burden on the public for this collection is estimated at 20,000 hours for the 1,200,000 respondents, with an average of 4 hours per response.

These burden estimates include all aspects of the collection effort and may include time for reviewing instructions, gathering and maintaining the data needed, and completing and reviewing the collection of information.

If you wish to submit comments regarding any aspect of this collection of information, including suggestions for reducing the burden, or if you would like a copy of the information collection request please reference ICR #1300, Contact Rick Westlund, Information Policy Branch, PN-223, U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460 (202-382-2745); and Marcus Pescoc, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

List of Subjects in 40 CFR Part 282


L. Thomas, Administrator.

For the reasons set out in the preamble, Part 260 of Title 40 of the Code of Federal Regulations is revised to read as follows:

PART 282—TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENTS FOR OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS (UST)

Subpart A—Program Scope and Interim Prohibition

Sec. 282.10 Applicability.
282.11 Interim prohibitions for deferred UST systems.

Subpart B—UST Systems: Design, Construction, Installation, and Notification

282.20 Performance standards for new UST systems.
282.21 Upgrading of existing UST systems.
282.22 Notification requirements.

Subpart C—General Operating Requirements

282.30 Spill and overfill control.
282.31 Operation and maintenance of corrosion protection.
282.32 Compatability.
282.33 Equipment, repairs, and recordkeeping.

Subpart D—Release Detection

282.40 General requirements for all UST systems.
282.41 Requirements for petroleum UST systems.

Subpart E—Requirements for hazardous waste UST systems.

282.43 Methods of release detection for oil.
282.44 Methods of release detection for piping.
282.45 Release detection recordkeeping.

Appendix I—List of Agencies Designated to Receive Notifications.

Appendix II—Statement for Shipping Tickets and Invoices.

Authority: 42 U.S.C. 6901, 6905, 6911, 6915(d), 6918(e), 6920(d), 6921(d), 6921(e), 6921(f).

Subpart A—Program Scope and Interim Prohibition

§ 282.10 Applicability.

(a) The requirements of this part apply to all owners and operators of an UST system as defined in 282.10(b) except as otherwise provided in paragraph (b), (c), and (d) of this section. Any UST system listed in paragraph (c) of this section must meet the requirements of 282.11.

(b) The following UST systems are excluded from the requirements of this part:

(1) Any UST system holding hazardous waste listed under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances.

(2) Any wastewater treatment tank system that is part of a wastewater treatment system.
treatment facility regulated under section 402 or 203(b) of the Clean Water Act.

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks.

(4) Any UST system whose capacity is 110 gallons or less.

(5) Any UST system that contains a de minimis concentration of regulated substances.

(6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(7) Demonstrate Subparts B, C, and D do not apply to any of the following types of UST systems:

(i) Wastewater treatment tank systems.

(ii) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following).

(3) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 59, Appendix A.

(4) Airport hydrant fuel distribution systems and

(5) UST systems with field-constructed tanks.

(7) Demonstrate Subpart D does not apply to any UST system that stores fuel solely for use by emergency power generators.

§ 290.11 Interim prohibition for deferred UST systems.

(a) No person may install an UST system listed in § 290.10(c) for the purpose of storing regulated substances unless the UST system (whether of single- or double-wall construction):

(1) Is not designed or lined with material that is compatible with the stored substance.

(2) The discharging of hazardous substances into the environment.

(b) The discharging of hazardous substances into the environment.

(c) The discharging of hazardous substances into the environment.

(d) The discharging of hazardous substances into the environment.

(e) The discharging of hazardous substances into the environment.

(f) The discharging of hazardous substances into the environment.

(g) The discharging of hazardous substances into the environment.

(h) The discharging of hazardous substances into the environment.

(i) The discharging of hazardous substances into the environment.

(j) The discharging of hazardous substances into the environment.

(k) The discharging of hazardous substances into the environment.

(l) The discharging of hazardous substances into the environment.

(m) The discharging of hazardous substances into the environment.

(n) The discharging of hazardous substances into the environment.

(o) The discharging of hazardous substances into the environment.

(p) The discharging of hazardous substances into the environment.

(q) The discharging of hazardous substances into the environment.

(r) The discharging of hazardous substances into the environment.

(s) The discharging of hazardous substances into the environment.

(t) The discharging of hazardous substances into the environment.

(u) The discharging of hazardous substances into the environment.

(v) The discharging of hazardous substances into the environment.

(w) The discharging of hazardous substances into the environment.

(x) The discharging of hazardous substances into the environment.

(y) The discharging of hazardous substances into the environment.

(z) The discharging of hazardous substances into the environment.

{[Note: The Nominally Association of Corrosion Engineers Standard RP-02-05, "Control of External Corrosion on Metallic Structures," may be used as guidance for complying with paragraph (b) of this section.]

§ 290.12 Definitions.

"Alveoground release" means any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the alveoground portion of an UST system or alveoground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

"Ancillary equipment" means any device utilized, but not limited to, such devices as piping, fitting, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

"Bellowground release" means any release to the subsurface of the land and to ground water. This includes, but is not limited to, releases from the belloground portions of an underground storage tank system and belloground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

"Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earth materials.

"Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

"Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such personnel must have education and experience in fuel resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.


"Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

"Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

"Consumptive use" with respect to heating oil means consumed on the premises.

"Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education of not less than five years experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

"Dielastic material" means a material that does not conduct direct electrical current. Dielastics are substances used to electrically isolate UST systems from the surrounding soils. Dielastics are used to electrically isolate portions of the UST system (e.g., tank from piping).

"Electrical equipment" means underground equipment that contains dielastic fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

"Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

" Existing tank system" means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before December 23, 1988. Installation is considered to have commenced if:

(a) The owner or operator has obtained all federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and if,

(b)(1) Either a continuous on-site physical construction or installation program has begun or,

(2) The owner or operator has entered into contractual obligations—which cannot be cancelled or modified without substantial loss—for physical
gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or re-injection into a produced gas or pipeline stream, or may collect and separate liquids from a gas stream.

"Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing pollutants.

"Motor fuel" means gasoline or a petroleum-based substance that is motor fuel as defined in section 101(4) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (PL 96-510) but not including any substance regulated as a hazardous waste under subtitle C.

"New tank system" means a tank system that will be used to contain an accumulation of regulated substances and for which installation has commenced after December 22, 1988. (See also "Existing Tank System").

"Nonoperational period" for a tank refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Subpart G.

"Owner" means any person in control of, or having responsibility for, the daily operation of the UST system.

"Overflow release" in a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

"Petroleum" means all substances that are petroleum products.

"Pipeline facilities" (including gathering lines) are new and existing gathering lines or any associated equipment, facilities, or buildings.

"Regulated substance" means:
(a) Any substance in section 101(4) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (PL 96-510) but not including any substance regulated as a hazardous waste under subtitle C.

(b) Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

The term "regulated substance" includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

"Release" means any spilling, leaking, emitting, discharging, escaping, leaking or discarding from an underground storage tank system into ground water, surface water or subsurface soils.

"Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or ground water.

"Residential tank" is a tank located on property used primarily for dwelling purposes.

"SARA" means the Superfund Amendments and Reauthorization Act of 1986.

"Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.

"Stream water or wastewater collection system means piping, pumps, conduits, and any other equipment.
necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any area where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

"Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with non-earthen materials) that is not an injection well.

"Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

"Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

"Underground release" means any belowground release.

"Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected there-to) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected there-to) is 10 percent or more beneath the surface of the ground. This term does not include any:

(a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
(b) Tank used for storing heating oil for consumptive use on the premises where stored;
(c) Septic tank;
(d) Pipeline facility (including gathering lines) regulated under:
   (2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 201, et seq.), or
   (3) Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition;
(f) Surface impoundment, pit, pond, or lagoon;
(g) Storm-water or wastewater collection systems;
(h) Flow-through process tank;
(i) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or
(j) Storage tank situated in an underground area (such as a basement, cellar, minnowing, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term "underground storage tank" or "UST" does not include any pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.

"Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product.

"UST system" or "Tank system" means an underground storage tank, connected underground piping, underground auxiliary equipment, and containment system, if any.

"Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

Subpart B—UST Systems: Design, Construction, Installation and Notification

§209.20 Performance standards for new UST systems.

In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems must meet the following requirements.

(a) Tanks. Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic or


(b) The tank is constructed of steel and cathodically protected in the following manner:

(1) The tank is coated with a suitable dielectrically bonded protective coating;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current anode status as required in §209.31(e); and

(iv) Cathodic protection systems are operated and maintained in accordance with §209.31 or according to guidelines established by the implementing agency.

Note: The following codes and standards may be used to comply with paragraph (a)(2) of this section: Underwriter's Laboratories Standard 1790, "Corrosion Protection Systems for Underground Storage Tanks";


(e) The tank is constructed of a steel-fiberglass-reinforced-plastic composite or


(f) The tank is constructed of metal without additional corrosion protection measures provided that:

(1) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life;

(2) Owners and operators maintain records that demonstrate compliance with the requirements of paragraphs (d)(ii) or (f)(ii) for the remaining life of the tank; or

(iii) The tank construction and corrosion protection is determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (a)(1) through (a)(3) of this section.
(b) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of fiberglass-reinforced plastic; or

Note: The following codes and standards must be used with paragraph (b)(1) of this section:

(a) Underwriters Laboratories Subject 971, "UL Listed Non Metal Pipe";
(b) Underwriters Laboratories Standard 527 for Flue Connectors for Flammable and Combustible and LP Gas;
(c) Underwriters Laboratories of Canada Code UL-C-107, "Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids"; and
(d) Underwriters Laboratories of Canada Standard CAN 4-5032-M81, "Flexible Underground Hose Connectors."

(2) The piping is constructed of steel and cathodically protected in the following manner:

(i) The piping is coated with a suitable dielectric material;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current operating states as required in § 290.41(e); and

(iv) Cathodic protection systems are operated and maintained in accordance with § 290.31 or guidelines established by the implementing agency or

Note: The following codes and standards may be used to comply with paragraph (b)(2) of this section:

(a) National Fire Protection Association Standards 2A, "Flammable and Combustible Liquid Codes"; and
(b) American Petroleum Institute Publication 1021, "Installation of Underground Petroleum Storage Systems";
(c) American Petroleum Institute Publication 1032, "Corrosion Protection of Underground Petroleum Storage Tanks and Piping Systems"; and
(d) National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Steel and Alumina Metallized Piping Systems."

(c) Protection equipment must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

Note: Tank, and piping system installation practices and procedures described in the following code may be used to comply with the requirements of paragraph (b) of this section:

(i) American Petroleum Institute Publication 516, "Installation of Underground Petroleum Storage Systems";

(d) Petroleum Equipment Institute Publication RP-100, "Recommended Practices for Installation of Underground Liquid Storage Systems";

(e) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with section 290.32.

(i) The installer has been certified by the tank and piping manufacturer(s); or

(ii) The installer has been certified by a registered professional engineer with education and experience in UST system installation; or

(iii) The installation has been inspected and approved by the implementing agency; or

(iv) All work listed in the manufacturer's installation checklists has been completed; or

(v) The owner and operator have complied with another method for ensuring compliance with paragraph (d) of this section that is determined by the implementing agency to be no less protective of human health and the environment.

§ 290.60 Upgrading of existing UST systems.

(a) Alternatives allowed. Not later than December 22, 1998, all existing UST systems must comply with one of the following requirements:

(i) New UST system performance standards under § 290.20;

(ii) Upgrading requirements in paragraphs (b) through (d) of this section;

(iii) Closure requirements under Subpart G of this part, including applicable requirements for corrective action under Subpart F.

(b) Upgrading requirements. Steel tanks must be upgraded to meet one of the following requirements in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory:

(i) Intermediate lining. A tank may be upgraded by internal lining if:

(A) The lining is installed in accordance with the requirements of § 290.33; and
(ii) Within 10 years after lining, and every 5 years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.

(3) Cathodic protection. A tank may be upgraded by cathodic protection if the cathodic protection system meets the requirements of § 200.43(c) through (i); (ii), (iii), and (iv) and the integrity of the tank is assured using one of the following methods:

(i) The tank is internally inspected and found to be structurally sound and free of corrosion holes prior to installing the cathodic protection system; or
(ii) The tank has been installed for less than 10 years and is monitored monthly for releases in accordance with § 200.43(h) through (ii); or
(iii) The tank has been installed for less than 10 years and is assessed for corrosion holes by conducting two (2) tightness tests that meet the requirements of § 200.43(z). The first tightness test must be conducted prior to installing the cathodic protection system. The second tightness test must be conducted between three (3) and six (6) months following the first operation of the cathodic protection system; or
(iv) The tank is assessed for corrosion holes by a method that is determined by the implementing agency to prevent releases in a manner that is no less protective of human health and the environment than paragraphs (ii)(i), (ii), (iii), and (iv) of this section.

(4) Lining system.

(i) The lining system is installed in accordance with the requirements of § 200.33.

(ii) The cathodic protection system meets the requirements of § 200.20(d) through (ii), (iii), and (iv).

§ 200.42 Certification of vessels and piping.

(a) Piping and piping system.

(i) Piping system. The piping system is certified in accordance with a code of practice developed by a nationally recognized or independent testing laboratory and any of the requirements of § 200.20(m) to (n). Note: The code or standards listed in the next paragraph(s) are to be used to comply with this requirement.

(ii) Spill and overfill prevention equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all existing UST systems must comply with new UST systems spill and overfill prevention equipment requirements specified in § 200.20(n).

(b) Spill and overfill prevention equipment.

(i) Any owner who brings an underground storage tank system into use after May 5, 1980, shall submit a form prescribed in Appendix I of this part, a notice of existence of each tank system to the state or local agency or department designated in Appendix II of this part to receive such notice.

(ii) Owners and operators of UST systems that were in the ground on or after May 5, 1980, unless taken out of operation on or after January 1, 1984, are required to notify the designated state or local agency in accordance with the Hazardous and Solid Waste Amendments of 1984, Pub. L. 98-62, on a form prescribed by EPA on November 8, 1980 (45 FR 44909) unless notice was given pursuant to paragraph (1)(ii) of this subpart.

Note: The form as prescribed in Appendix III of this part may be used to comply with this requirement.

§ 200.43 General operating requirements.

(a) Split and overfill centers.

(i) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

Note: The transfer procedures described in National Fire Protection Association Publication 208 may be used to comply with paragraph (a) of this section. Further guidance on spill and overfill prevention appears in American Petroleum Institute Publication 202, "Recommended Practice for Bulk Liquid Storage Control at Retail Outlets," and National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Installation."
spills and overflows in accordance with § 280.53.

§ 280.31 Operation and maintenance of corrosion protection.

All owners and operators of steel UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances:

(a) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of the portion of the tank and piping that remain in contact with regulated substances and are in contact with the ground.

(b) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(1) Frequency: All cathodic protection systems must be tested within 6 months of installation and at least every 3 years thereafter or according to another reasonable time frame established by the implementing agency; and

(2) Inspection criteria: The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

Note: National Association of Corrosion Engineers Standard 80-02-05, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used to comply with paragraph (b)(2) of this section.

(c) UST systems with impressed current cathodic protection systems must also be inspected every 10 days to ensure the equipment is running properly.

(d) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained (in accordance with § 280.34) to demonstrate compliance with the performance standards in this section. These records must provide the following:

(1) The results of the last three inspections required in paragraph (c) of this section; and

(2) The results of testing from the last two inspections required in paragraph (b) of this section.

§ 280.32 Compatibility.

Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.

Note: Owners and operators storing alcohol blends may use the following codes to comply with the requirements of this section:

(a) American Petroleum Institute Publication 102, "Storage and Handling Ethanol and Denatured Ethanol Blends at Distillation Terminals and Service Stations"; and

(b) American Petroleum Institute Publication 167, "Storage and Handling of Gasoline/Diesel/Gasohol Blends at Service Stations."
(1) Availability and Maintenance of Records. Owners and operators must keep the records required either:
(a) At the UST site and immediately available for inspection by the implementing agency; or
(b) At a readily available alternative site and be provided for inspection to the implementing agency upon request.
(c) 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 reconditioning and reporting requirements in this section have been implemented by the Office of Management and Budget and have been assigned OMB Control No. 3000-0068.

Subpart D—Release Detection
§ 260.40 General requirements for all UST systems.
(a) Owners and operators of new and existing UST systems must provide a method, or combination of methods, of release detection that:
(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;
(2) Is installed, calibrated, operated, and maintained in accordance with the manufacturer’s instructions, including routine maintenance and service checks for operability or running condition; and
(3) Meets the performance requirements in § 280.43 or 280.44, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, methods used after December 22, 1990 except for methods permanently installed prior to that date, must be capable of detecting the leak rate or quantity specified for that method in § 280.43 (b), (c), (d), or 280.44 (a) and (b) with a probability of detection of 0.85 and a probability of false alarm of 0.05.
(b) When a release detection method operated in...variances with the performance standards in § 280.43 or § 280.44 indicates a release may have occurred, owners and operators must notify the implementing agency in accordance with Subpart E.

| Owner and Operator of UST Systems must comply with the release detection requirements of this subpart by December 22 of the year listed in the following table: |

<table>
<thead>
<tr>
<th>Year when release detection was installed</th>
<th>1990</th>
<th>1991</th>
<th>1992</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1985 or above</td>
<td>RD</td>
<td>P</td>
<td>P/RD</td>
<td>RD</td>
</tr>
<tr>
<td>1985-89</td>
<td>RD</td>
<td>P</td>
<td>RD</td>
<td>P</td>
</tr>
<tr>
<td>1990-93</td>
<td>RD</td>
<td>P</td>
<td>RD</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New tanks (after December 22) immediately upon installation</th>
</tr>
</thead>
</table>
| P - Must be release detection by all pressure piping in accordance with § 280.40(a) and § 280.42(a), and § 280.42(c)
| P - Must be release detection for tanks and piping in accordance with § 280.40, § 280.41(a), and § 280.42. |

(d) Any existing UST system that cannot apply a method of release detection that complies with the requirements of this subpart must complete the closure procedures in Subpart G by the date on which release detection is required for that UST system under paragraph (c) of this section.

<table>
<thead>
<tr>
<th>Schedule for Phase-in of Release Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year when release detection is required (by December 22 of the year listed in the above table)</td>
</tr>
<tr>
<td>Before 1985 or above</td>
</tr>
<tr>
<td>1985-89</td>
</tr>
<tr>
<td>1990-93</td>
</tr>
</tbody>
</table>

Note: The reconditioning and reporting requirements in this section have been implemented by the Office of Management and Budget and have been assigned OMB Control No. 3000-0068.

Subpart D—Release Detection
§ 280.41 Requirements for petroleum UST systems.
Owners and operators of petroleum UST systems must provide release detection for tanks and piping as follows:
(a) Tanks. Tanks must be monitored at least every 30 days for releases using one of the methods listed in § 280.43(c) through (h) except that:
(1) UST systems that meet the performance standards in § 280.39 or § 280.31, and the monthly inventory control requirements in § 280.43 (a) or (b), may use tank tightness testing (conducted in accordance with § 280.43(e) at least every 5 years until December 22, 1990, or until 10 years after the tank is installed or upgraded under § 280.21(h), whichever is later; (2) UST systems that do not meet the performance standards in § 280.31 or § 280.21 may use nightly inventory controls (conducted in accordance with § 280.43(e) or (f)) and annual tank tightness testing (conducted in accordance with § 280.43(e) until December 22, 1990 when the tank must be upgraded under § 280.21 or permanently closed under § 280.71; and
(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one of the following requirements:
(1) Pressurized piping. Underground piping that conveys regulated substances under pressure must:
(i) Be equipped with an automatic line leak detector conducted in accordance with § 280.44(a); and
(ii) Have an annual line tightness test conducted in accordance with § 280.44(b) or have monthly monitoring conducted in accordance with § 280.44(c).

(2) suction piping. Underground piping that conveys regulated substances under pressure must:
(i) Have a line tightness test conducted at least every 3 years and in accordance with § 280.44(b) or have monthly monitoring conducted at least every 12 months and in accordance with § 280.44(c).

(3) The below-grade piping operates at less than atmospheric pressure;
(4) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;
(5) Only one check valve is included in each suction line;
(6) The check valve is located directly below and as close as practical to the suction pump;
(7) A method is provided that allows compliance with paragraphs (b)(3) through (b)(4) of this section to be readily determined.

§ 280.42 Requirements for hazardous substance UST systems.
Owners and operators of hazardous substance UST systems must provide release detection that meets the following requirements:
(a) Release detection at existing UST systems must meet the requirements for petroleum UST systems in § 280.41. By December 22, 1990, all existing hazardous substance UST systems must meet the release detection requirements for new systems in paragraph (b) of this section.
(b) Release detection at new hazardous substance UST systems must meet the following requirements:
(1) Secondary containment systems must be designed, constructed, and installed so:
(i) Contain regulated substances released from the tank system until they are detected and removed;
(ii) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system.

(iii) To check for evidence of a release at least every 30 days.

Note.—The provisions of 40 CFR 261.153, Compliance and Detection of Releases, may be used to comply with these requirements.

(2) Double-walled tanks must be designed, constructed, and installed to:

(i) Contain a release from any portion of the inner tank within the outer wall and

(ii) Detect the failure of the inner wall.

(3) External linings (including vaults) must be designed, constructed, and installed to:

(i) Contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Prevent the interference of precipitation or ground-water intrusion with the ability to contain or detect a release of regulated substance; and

(iii) Surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).

(4) Underground piping must be equipped with secondary containment that satisfies the requirements of paragraph (b)(1) of this section, such as trench liners, jacking of double-walled pipe. In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in accordance with § 264.44(b).

(5) Other methods of release detection may be used if owners and operators:

(i) Demonstrate to the implementing agency that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in § 264.43(b) through (h) can detect a release of petroleum;

(ii) Provide information to the implementing agency on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site; and

(iii) Obtain approval from the implementing agency to use the alternate release detection method before the installation and operation of the new UST system.

§ 264.43 Methods of release detection for tanks.

Each method of release detection for tanks used to meet the requirements of § 264.41 must be conducted in accordance with the following:

(a) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus any monthly basis in the following manner:

1. Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day.

2. The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch.

3. The regulated substance inputs are recorded with delivery receipts by measurement of the tank inventory volume before and after delivery.

4. Deliveries are made through a drop tube that extends to within one foot of the tank bottom.

5. Product shipping is measured and recorded within the local standards for meter calibration or an accuracy of 0.1 percent of the gross input for every 5 gallons of product withdrawn;

6. The measurement of any water level in the bottom of the tank is made to the nearest 0.05 inch at least once a month.

Note: Practices described in the American Petroleum Institute Publication 1012, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," may be used, where applicable, as guidance in meeting the requirements of this paragraph.

(b) Manual tank gauging. Manual tank gauging must meet the following requirements:

1. Tank liquid level measurements are taken at the beginning and ending of a period of at least 30 hours during which no liquid is added to or removed from the tank;

2. Level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;

3. The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

4. A leak is suspected and subject to the requirements of Subpart B if the variation between beginning and ending measurements exceeds the weekly or monthly standard in the following table:

<table>
<thead>
<tr>
<th>Nominal tank capacity</th>
<th>Weekly standard (one test)</th>
<th>Monthly standard (average of four tests)</th>
</tr>
</thead>
<tbody>
<tr>
<td>550</td>
<td>10 gallons</td>
<td>5 gallons</td>
</tr>
<tr>
<td>gallons or less</td>
<td>13 gallons</td>
<td>7 gallons</td>
</tr>
<tr>
<td>551-1,000 gallons</td>
<td>26 gallons</td>
<td>13 gallons</td>
</tr>
<tr>
<td>1,001-2,000 gallons</td>
<td>26 gallons</td>
<td>13 gallons</td>
</tr>
<tr>
<td>2,001-7,000 gallons</td>
<td>26 gallons</td>
<td>13 gallons</td>
</tr>
</tbody>
</table>

5. Only tanks of 550 gallons or less nominal capacity may use this method of release detection. Tanks of 551 to 2,000 gallons may use the method in place of annual inventory control in § 260.43(a). Tanks of greater than 2,000 gallons nominal capacity may not use this method to satisfy the requirements of this subpart.

(c) Tank tightness testing. Tank tightness testing for another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of potential compound placed in the tank, vapor pocket, tank deformation, evaporation of condensates, and the location of the water table.

(d) Automatic tank gauging. Equipment for automatic tank gauging that tests the loss of product and conducts inventory control must meet the following requirements:

1. The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and

2. Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of § 264.43(a).

(e) Vapor monitoring. Testing or monitoring for vapor within the soil gas of the excavation zone must meet the following requirements:

1. The measurements used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapor releases into the excavation area;

2. The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring device located in the excavation zone in the event of a release from the tank;

3. The measurement of vapor by the monitoring device is not rendered ineptive by the ground water, rainfall, or soil moisture or other known interference so that a release could go undetected for more than 30 days;

4. The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

5. The vapor monitors are designed and operated to detect any significant increase in concentration above the background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

6. In the UST excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (c) through (e) of this section and to
establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product; and
(7) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(I) Ground-water monitoring. Testing or monitoring for liquids on the ground water must meet the following requirements:

(1) The regulated substance stored is immiscible in water and has a specific gravity of less than one;
(2) Ground water is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravel, coarse to medium sand, coarse silts or other permeable materials);
(3) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground-water conditions;
(4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;
(5) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;
(6) The continuous monitoring devices or manual methods used can detect the presence of at least one-tenth of an inch of free product on top of the ground water in the monitoring wells;
(7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (I) (1) through (6) of this section and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and
(8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(II) Interstitial monitoring. Interstitial monitoring between the UST system and any immediately around or below it may be used, but only if the system is designed, constructed and operated to detect a leak from any part of the tank that routinely contains product and also meets one of the following requirements:

(a) The monitoring system is a continuous monitoring system that includes automatic leak detectors.

Note: The provisions outlined in the Steel Tank Institute’s “Standard for Dual Wall Underground Storage Tanks” may be used as guidance for aspects of the design and construction of underground steel double-walled tanks.

(2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier: (i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^-6 cm/sec) for the regulated substance stored to direct a release to the monitoring point and permit its detection; and
(ii) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The ground water, soil moisture, or rainfall will not render the testing or sampling method used ineffective so that a release could go undetected for more than 30 days.

(ii) The site is assessed to ensure that the secondary barrier is always above the groundwater level and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions;

(v) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(3) For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(ii) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(a) It can detect a 0.2 gallon per hour leak rate or a release of 150 gallons within 6 months with a probability of detection of 0.95 and a probability of false alarm of 0.005;

(b) The implementing agency may approve another method if the owner or operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in paragraphs (2) through (b) of this section. In comparing methods, the implementing agency should consider the ability of the method to detect a release that the method can detect within a reasonable period of time determined by the implementing agency and the date of installation.

(ii) The results of any sampling, testing, or monitoring must be maintained for at least 1 year, or for another reasonable period of time determined by the implementing agency, except that the results of tank tightness testing conducted in accordance with § 290.42(c) must be retained until the next test is conducted; and

(iii) The written documentation of all calibration, maintenance, and repair of the release detection equipment permanently located on or near the tank must be maintained for at least one year after the servicing work is completed, or for another reasonable time period.
determined by the implementing agency. Any schedules of required calibration and maintenance provided by the manufacturer must be retained for 5 years from the date of installation.

Subpart E—Release Reporting, Investigation, and Confirmation

§ 280.50 Reporting of suspected releases. Owners and operators of UST systems must report to the implementing agency within 24 hours, or another reasonable time period specified by the implementing agency, and follow the procedures in § 280.52 for any of the following conditions:

(a) The discovery by owners and operators of releases or other significant releases or spillages of regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewers and utility lines, and nearby surface water).

(b) Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained absence of water in the tank) unless equipment is found to be defective but not leaking, and is immediately repaired or replaced; and,

(c) Monitoring results from a release detection method required under §§ 280.40, 280.41, and 280.42 that indicate a release may have occurred unless:

(1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result; or

(2) In the case of inventory control, a second month of data does not confirm the initial result.

§ 280.51 Investigation due to off-site impacts.

When required by the implementing agency, owners and operators of UST systems must perform the procedures in § 280.52 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of significant releases (such as the presence of free product or vapors in soils, basements, sewers and utility lines, and nearby surface and drinking waters) that has been observed by the implementing agency or brought to its attention by another party.

§ 280.52 Release investigation and corrective action.

Unless corrective action is initiated in accordance with Subpart F, owners and operators of UST systems must conduct investigations of all suspected releases of regulated substances requiring reporting under § 280.53 within 7 days, or another reasonable time period specified by the implementing agency, using either the following steps or another procedure approved by the implementing agency:

(a) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 280.42(c) and § 280.44(b)) that determine whether a leak exists in that portion of the tank that consistently contains product, or the attached delivery piping, if any.

(b) Further investigation is not required if the test results for the system, tank, or delivery piping do not indicate that a leak exists, and if environmental contamination is not the basis for suspecting a release.

(c) Owners and operators must conduct a site check as described in paragraph (b) of this section if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.

§ 280.53 Reporting and cleanup of spills.

Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that results in a release to the environment that exceeds 25 gallons or another reasonable amount specified by the implementing agency, or that causes a sheen on nearby surface water; and

(2) Spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR Part 302).

(b) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than 25 gallons or another reasonable amount specified by the implementing agency, and a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within 24 hours, or another reasonable time period established by the implementing agency, owners and operators must immediately notify the implementing agency.

Note: Pursuant to §§ 290.12 and 335.40, a release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within 24 hours) to the National Response Center under sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and in appropriate state and local emergency plans. (Under Title III of the Superfund Amendments and Reauthorization Act of 1986.)

Subpart F—Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances

§ 280.60 General.

(a) Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this subpart except for USTs excluded under § 280.10(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(a) of the Resource Conservation and Recovery Act, as amended.

§ 280.61 Initial response.

Upon confirmation of a release in accordance with § 280.52 or after a release from the UST system is identified by any other manner, owners and operators must perform the following initial response actions within 24 hours of a release or within another reasonable time period specified by the implementing agency, and begin corrective action in accordance with Subpart F in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds 25 gallons or another reasonable amount specified by the implementing agency, or that causes a sheen on nearby surface water; and

(2) Spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR Part 302).
§ 280.65 Investigations for soil and ground-water cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence of concentrations of dissolved product contamination in the ground water, owners and operators shall conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with § 280.65;

(3) There is evidence that contaminated soils may be in contact with ground water (e.g., as found during conduct of the initial response measures or investigations required under § 280.50 through 280.65); and

(4) The implementing agency requests an investigation, based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

(b) Owners and operators shall submit the information collected under paragraph (a) of this section as soon as practicable or in accordance with a schedule established by the implementing agency.

§ 280.66 Site characterization.

(c) Identify and mitigate fire, explosion, and vapor hazards.

§ 280.66 Site characterization.

(d) Unless directed to do otherwise by the implementing agency, prepare and submit to the implementing agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in wells, basements, and excavations;

(3) The type of free product recovery system used;

(4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(5) The type of treatment applied to, and the effluent quality expected from, any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

(7) The disposition of the recovered free product.

§ 280.65 Investigations for soil and ground-water cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence of concentrations of dissolved product contamination in the ground water, owners and operators shall conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with § 280.65;

(3) There is evidence that contaminated soils may be in contact with ground water (e.g., as found during conduct of the initial response measures or investigations required under § 280.50 through 280.65); and

(4) The implementing agency requests an investigation, based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

(b) Owners and operators shall submit the information collected under paragraph (a) of this section as soon as practicable or in accordance with a schedule established by the implementing agency.

(c) Identify and mitigate fire, explosion, and vapor hazards.

§ 280.66 Site characterization.

(d) Unless directed to do otherwise by the implementing agency, prepare and submit to the implementing agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in wells, basements, and excavations;

(3) The type of free product recovery system used;

(4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(5) The type of treatment applied to, and the effluent quality expected from, any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

(7) The disposition of the recovered free product.

§ 280.65 Investigations for soil and ground-water cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence of concentrations of dissolved product contamination in the ground water, owners and operators shall conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with § 280.65;

(3) There is evidence that contaminated soils may be in contact with ground water (e.g., as found during conduct of the initial response measures or investigations required under § 280.50 through 280.65); and

(4) The implementing agency requests an investigation, based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

(b) Owners and operators shall submit the information collected under paragraph (a) of this section as soon as practicable or in accordance with a schedule established by the implementing agency.

(c) Identify and mitigate fire, explosion, and vapor hazards.

§ 280.66 Site characterization.

(d) Unless directed to do otherwise by the implementing agency, prepare and submit to the implementing agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in wells, basements, and excavations;

(3) The type of free product recovery system used;

(4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(5) The type of treatment applied to, and the effluent quality expected from, any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

(7) The disposition of the recovered free product.
§ 202.70 Corrective action plan.  
(a) At any point after reviewing the information submitted in compliance with § 202.01 through § 202.02, the implementing agency may require owners and operators to submit additional information or to develop and submit a corrective action plan for response to contaminated soil and ground water. If a plan is required, owners and operators must submit the plan in accordance with the physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration; the hydrogeologic characteristics of the facility and the surrounding area; the potential effects of residual contamination on nearby surface water and ground water; an exposure assessment; and any information assembled in compliance with this subpart.  
(b) The proposed corrective action plan must address the following factors as appropriate:  
(1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;  
(2) The hydrogeologic characteristics of the facility and the surrounding area;  
(3) The potential effects of residual contamination on nearby surface water and ground water;  
(4) An exposure assessment; and  
(5) Any information assembled in compliance with this subpart.  
(c) Upon approval of the corrective action plan or as directed by the implementing agency, owners and operators must implement the plan, including modifications to the plan made by the implementing agency. They must monitor, evaluate, and report the results of implementing the plan in accordance with a schedule and in a format established by the implementing agency.  
(d) Owners and operators may, in the interest of minimizing environmental contamination and preparing for effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved provided that they:  
(1) Notify the implementing agency of their intention to begin cleanup;  
(2) Comply with any conditions imposed by the implementing agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and  
(3) Incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the implementing agency for approval.  
§ 202.67 Public participation.  
(a) For each confirmed release that requires a corrective action plan, the implementing agency must provide notice to the public by means designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, broadcast advertisements, public service announcements, publications in a state register, letters to individual households, or personal contacts by field staff.  
(b) The implementing agency must ensure that the public is aware of and can participate in the corrective action plan.  
(c) The public can participate in the corrective action plan by making comments on the proposed corrective action plan, providing the implementing agency with suggestions for the corrective action plan, and participating in the decision-making process as appropriate.  
§ 202.71 Permanent closure and change-in-service.  
(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (d) and (e) 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 corrective action. The required assessment of the excavation zone under § 202.72 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 contaminated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with 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 contaminated sludges and conduct a site assessment in accordance with § 202.72.  
§ 202.72 Permanent closure and change-in-service.  
(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (d) and (e) 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 corrective action. The required assessment of the excavation zone under § 202.72 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 contaminated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with 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 contaminated sludges and conduct a site assessment in accordance with § 202.72.  
§ 202.72 Permanent closure and change-in-service.  
(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (d) and (e) 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 corrective action. The required assessment of the excavation zone under § 202.72 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 contaminated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with 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 contaminated sludges and conduct a site assessment in accordance with § 202.72.  
§ 202.72 Permanent closure and change-in-service.  
(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (d) and (e) 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 corrective action. The required assessment of the excavation zone under § 202.72 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 contaminated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with 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 contaminated sludges and conduct a site assessment in accordance with § 202.72.  
§ 202.72 Permanent closure and change-in-service.  
(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (d) and (e) 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 corrective action. The required assessment of the excavation zone under § 202.72 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 contaminated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with 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 contaminated sludges and conduct a site assessment in accordance with § 202.72.
§ 286.72 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 § 286.43 (a) and (l) is in operation 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 P.

§ 286.73 Applicability to previously closed UST systems.

When directed by the implementing agency, the owner and operator of an UST system permanently closed before December 20, 1988, must assess the excavation zone and close the UST system in accordance with this Subpart if releases from the UST may, in the judgment of the implementing agency, pose a current or potential threat to human health and the environment.

§ 286.74 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 § 286.72 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.
**Notification for Underground Storage Tanks**

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986. This form must be submitted by May 8, 1986. The information requested is required by Section 902 of the Resource Conservation and Recovery Act (RCRA), as amended.

The purpose of this notification is to facilitate the identification and evaluation of underground tanks that are, or have been, used to store regulated substances. It is expected that the information you provide will be used to determine whether tank locations need investigation.

### GENRAL INFORMATION

<table>
<thead>
<tr>
<th>I.D. Number</th>
<th>STATE USE ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Date Received</td>
</tr>
</tbody>
</table>

**Who Must Notify?** Section 902 of RCRA, as amended, requires that, unless exempted, owners or operators of underground tanks that store regulated substances must notify designated State or local agencies of the existence of those tanks. Owners means:

1. the person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and
2. in the case of an underground storage tank in use on November 8, 1984, or before, the person who owned the tank used for the storage, use, or dispensing of regulated substances, and
3. in the case of any underground storage tank in use before November 8, 1984, or before, the person who owned the tank used for the storage, use, or dispensing of regulated substances.

### INSTRUCTIONS

- Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

### II. LOCATION OF TANK(S)

<table>
<thead>
<tr>
<th>Facility Name or Company Site Identifier, as applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Address or State Road, as applicable</td>
</tr>
<tr>
<td>County</td>
</tr>
<tr>
<td>City (nearest)</td>
</tr>
<tr>
<td>State</td>
</tr>
<tr>
<td>ZIP Code</td>
</tr>
</tbody>
</table>

**Location of Tanks**

Indicate number of tanks at this location

**Mark box here if tanks are located on land within an Indian reservation or on other Indian trust lands.**

### III. CONTACT PERSON/TANK LOCATION

**Mark box here only if this is an amended or subsequent notification for this location.**

**Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands.**

**Certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.**

*Signature*

**Date Signed**
<table>
<thead>
<tr>
<th>10. Installation (mark all that apply):</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ The installer has been certified by the tank and piping manufacturers.</td>
</tr>
<tr>
<td>☐ The installer has been certified or licensed by the implementing agency.</td>
</tr>
<tr>
<td>☐ The installation has been inspected and certified by a registered professional engineer.</td>
</tr>
<tr>
<td>☐ The installation has been inspected and approved by the implementing agency.</td>
</tr>
<tr>
<td>☐ All work listed on the manufacturer's installation checklists has been completed.</td>
</tr>
<tr>
<td>☐ Another method was used as allowed by the implementing agency. Please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. Release Detection (mark all that apply):</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Manual tank gauging.</td>
</tr>
<tr>
<td>☐ Tank tightness testing with inventory controls.</td>
</tr>
<tr>
<td>☐ Automatic tank gauging.</td>
</tr>
<tr>
<td>☐ Vapor monitoring.</td>
</tr>
<tr>
<td>☐ Ground-water monitoring.</td>
</tr>
<tr>
<td>☐ Interstitial monitoring within a secondary barrier.</td>
</tr>
<tr>
<td>☐ Interstitial monitoring within secondary containment.</td>
</tr>
<tr>
<td>☐ Automatic line leak detectors.</td>
</tr>
<tr>
<td>☐ Line tightness testing.</td>
</tr>
<tr>
<td>☐ Another method allowed by the implementing agency. Please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. Corrosion Protection (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ As specified for coated steel tanks with cathodic protection.</td>
</tr>
<tr>
<td>☐ As specified for coated steel piping with cathodic protection.</td>
</tr>
<tr>
<td>☐ Another method allowed by the implementing agency. Please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. I have financial responsibility in accordance with Subpart I. Please specify:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method:</td>
</tr>
<tr>
<td>Insurer:</td>
</tr>
<tr>
<td>Policy Number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. OATH: I certify that the information concerning installation provided in Item 10 is true to the best of my belief and knowledge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer:</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Position</td>
</tr>
<tr>
<td>Company</td>
</tr>
</tbody>
</table>
May 31, 1977

TO: YUKIO TAKEPA
VIA: JOHN EVELAND
FROM: KUALOA ARCHAEOLOGICAL RESEARCH STAFF
SUBJECT: PUU O KAPOLEI - ARCHAEOLOGICAL RECONNAISSANCE SURVEY

The Kualoa Archaeological Research Project staff conducted a site reconnaissance survey, as requested, on May 13, 1977. Their findings and recommendations are contained in the attached report. The staff also wishes to express their appreciation to Mr. Raymond Au for his timely assistance.

If any questions arise concerning the contents of the report, please contact Stephan D. Clark or Robert D. Connolly, Archaeologists, Kualoa Regional Park, telephone 237-8252 or 237-8319.

STEPHAN D. CLARK

ROBERT D. CONNOLLY III

Attach.

cc: Milnor Lun
On May 13, 1977, the staff of the Kualoa Archaeological Research Project conducted an archaeological reconnaissance survey at Puu O Kapolei, just makai of Makakilo City, Oahu. Puu O Kapolei is the site of Fort Barrett, an abandoned army fort acquired by the City and County of Honolulu for park development. Its area measures approximately 1400 x 1000 feet, with elevations ranging from 80 to 160 feet above sea level. A heavy vegetative growth over most of the area consists chiefly of keawe, hala koa, sisal, and some domestic plants presumably planted by army personnel for landscaping purposes.

Puu O Kapolei is mentioned by J. G. McAllister in Archaeology of Oahu (1933), as the site of Puu Kapolei heiau. He states:

The stones from the heiau supplied the rock crusher which was located on the side of this elevation, which is about 100 feet away from the sea side. There was formerly a large rock shelter on the sea side where Kamapuaa is said to have lived with his grandmother.

The staff conducted the survey by spreading out about 15 feet apart and making repeated walks back and forth, covering the entire area. Puu O Kapolei was found to be extensively modified. There are presently at least twenty abandoned, or partially abandoned, late historic military structures on the site, including bunkers, barracks, and a chapel. Construction of these buildings would have required very extensive bulldozing of the area. Several basalt rock freestanding, and retaining, walls were seen which appear to have been built by army personnel. No surface artifacts, midden, or prehistoric structures were seen, including McAllister’s heiau and rock shelter, which were apparently destroyed before the time the army acquired the land for the fort.

The archaeological research staff recommends that because of the extensive land modifications at Puu O Kapolei, no further archaeological work will be required. If, however, during park development any evidence of prehistoric occupation should be uncovered, an archaeologist should be called in to evaluate the find.
May 27, 1977

Young Suk Ko, Director
Department of Parks and Recreation
City and County of Honolulu
Honolulu, Hawaii 96813

SUBJECT: Assessment of Fort Barrette

Dear Mr. Ko:

We have received your letter of May 23, notifying the Commission of your Department’s decision to rescind the negative declaration for the proposed Fort Barrette park and to file an EIS in the near future.

Prior to the filing of the EIS, an EIS preparation notice should be filed with the Commission and consultation undertaken with appropriate parties. Requirements for preparation notices and consultation are given by EIS Regulations 1:31 and 1:41.

We shall publish notice of the rescission and of the forthcoming preparation notice in the June & EGQ Bulletin.

Thank you for your attention to the requirements of Chapter 343, HRS.

Sincerely,

Allan Suematsu
Executive Secretary
APPENDIX C

Puu O Kapolei - Archaeological Reconnaissance Survey
NEGATIVE DECLARATION
FOR LAND ACQUISITION
AND IMPROVEMENTS AT
KAPOLEI PARK

I. Project Description

A. Project Feature

Land acquisition of approximately 14.7 acres of land
for the expansion of Kapolei Park.

Latter increments to include construction of
improvements including grading, sprinkler system,
landscaping, utilities, comfort stations, picnic and
camping facilities, parking and access road, open
play areas and security lighting.

B. Objective

Provide recreation amenities for residents of the
Ewa area, which is the proposed secondary urban
center.

C. Funding

LAND
FY 1979
$200,000
 SOURCE
CDBG

II. Environmental Effects and Assessment of Significance
(Short-term and long-term comparisons; irretrievable or
irreversible commitment of resources; mitigating
measures).

A. Physical Environment

1. Geographical Characteristics

Kapolei Park is situated between the Makakilo
subdivision and the front gate of Barbers Point
Naval Air Station. The site lies approximately
16 miles from downtown Honolulu.

The site is shaped roughly like a truncated cone
with the highest promontory, 160 feet elevation,
rising on the makai side and falling on the
front gate side to about 115 feet elevation.
The average slope is about 7%. Vegetation is
heavy and mostly of the dryland shrubbery
variety.
Soil type consists of Ewa silty clay loam and Lahaina silty clay. The surface of the Ewa silty clay loam is dark reddish-brown about 18 inches thick. The subsoil, about 42 inches thick, is dark reddish-brown and dark red silty clay loam that has subangular blocky structure. The substratum is coral lime stone, sand or gravelly alluvium. The soil is neutral in the surface layer and subsoil. Permeability is moderate, runoff slow, and the erosion hazard is slight.

The Lahaina soil series consist of well-drained soils. Most of the surface layer and, in places, part of the subsoil has been removed by erosion. Runoff is medium and the erosion hazard is severe.

2. Land Use

The site of Kapolei Park, formerly Fort Barrette, was constructed as a U.S. Army Coast Artillery Post sometime prior to 1931 on land ceded by the State of Hawaii to the Federal Government. The installation's original contiguous area was roughly 40 acres. Most of the more level land (approximately 12 acres to be acquired) was declared surplus and sold between 1963-1967 to Campbell Estate, the State, and to A. B. Lau. The remaining 15.8 acres, transferred to the City by the Federal government, is quite steep and difficult to utilize other than a passive and natural type of park.

Land use policies governing the project site are:

State Land Use: Agricultural
General Plan: Military
Zoning: Agricultural
Existing Land Use: Park

Existing land uses surrounding the project site are agricultural lands used for the production of sugarcane, Hakakilo residential subdivision and the Barbers Point Naval Station.

Agricultural lands surrounding the project area are proposed for residential use. Eventually, this area will become the secondary urban center on Oahu.
3. Flood/Tsunami Hazards

Being situated on a promontory, the project site is not subject to floods nor tsunamies.

4. Coastal Zone Standards

The project site is not subject to Shoreline Protection Ordinance No. 4529.

5. Flora and Fauna

There are no endangered species on the site. Existent flora and fauna include the following:

**Flora**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Botanical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hailoa</td>
<td>Waltheria americana</td>
</tr>
<tr>
<td>Ilima</td>
<td>Sida fallax</td>
</tr>
<tr>
<td>Kiale</td>
<td>Prosopis pallida</td>
</tr>
<tr>
<td>Singapore Plumeria</td>
<td>Plumeria obtusa</td>
</tr>
<tr>
<td>Koali'awahia (Morning-glory)</td>
<td>Ipomoea congesta</td>
</tr>
<tr>
<td>Ko'a-haole</td>
<td>Leucaena leucocephala</td>
</tr>
<tr>
<td>Giant reed</td>
<td>Arundo donax</td>
</tr>
<tr>
<td>Koli (Castor Bean)</td>
<td>Opuntia sp.</td>
</tr>
<tr>
<td>Mau'u-pilipili (Bristly foxtail)</td>
<td>Bougainvillea hybrid</td>
</tr>
<tr>
<td>Opiuma</td>
<td>Ricinus communis</td>
</tr>
<tr>
<td>American pluchea</td>
<td>Satoria verticillata</td>
</tr>
<tr>
<td>Garden spurge</td>
<td>Passiflora foetida</td>
</tr>
<tr>
<td>Rattlebox</td>
<td>Pithecellobium dulce</td>
</tr>
<tr>
<td>Be-still tree</td>
<td>Pluchea odorata</td>
</tr>
<tr>
<td>Cats-claw climber</td>
<td>Euphorbia hirta</td>
</tr>
<tr>
<td>Sausage tree</td>
<td>Crotalaria spectabilis</td>
</tr>
<tr>
<td>Sisal</td>
<td>Thevetia peruviana</td>
</tr>
<tr>
<td>Beggar's trick; Ko'oko'olau</td>
<td>Doxantha unguis-catata</td>
</tr>
<tr>
<td>Pakal kuku (Spiny amaranth)</td>
<td>Kigelia africana</td>
</tr>
<tr>
<td>Inikoa (Indigo)</td>
<td>Agave sisalana</td>
</tr>
<tr>
<td>Asystasia</td>
<td>Bidens pilosa</td>
</tr>
<tr>
<td>Ohia-lomi (Tomato)</td>
<td>Amaranthus spinosus</td>
</tr>
<tr>
<td>Ohai (Monkey pod)</td>
<td>Indigofera</td>
</tr>
<tr>
<td>Ki-paoa</td>
<td>suffruticososa</td>
</tr>
<tr>
<td>Bermuda grass, Manienie</td>
<td>Asystasia gangetica</td>
</tr>
<tr>
<td>Hairy-abutilon</td>
<td>Lycopersicon esculentum</td>
</tr>
<tr>
<td>Koali-kua-hulu (Hairy merremia)</td>
<td>Samanea saman</td>
</tr>
<tr>
<td>Nohu</td>
<td>Ocimum basilicum</td>
</tr>
<tr>
<td>Acuan</td>
<td>Cynodon dactylon</td>
</tr>
<tr>
<td></td>
<td>Abutilon grandifolium</td>
</tr>
<tr>
<td></td>
<td>Herremia aegyptia</td>
</tr>
<tr>
<td></td>
<td>Tribulus cistoides</td>
</tr>
<tr>
<td></td>
<td>Desmanthus virgatus</td>
</tr>
</tbody>
</table>
False mallow
Rattle box
Golden crown-beard
Apple of Peru
Ko'olua
Natal red top
Coat buttons
Paragray
Napier grass

Fauna

Mammals
Polynesian Rat
Roof Rat
Norway Rat
House Mouse

Birds
Black-Crowned Night Heron
Cattle Egret
Barn Owl
Common Gynah
Chinese Lace-Necked Dove
Barred Dove

House Sparrow
Brazilian Cardinal
American Cardinal
Ricebird
Japanese White-Eye

Reptiles
Three species of introduced Gecko and one specie of introduced Skink which are all common to Oahu lowland environments.

6. Water Quality
There are no groundwater resources suitable for domestic use in the project area.

7. Air Quality
Use of the park will not generate air pollutants.
During the construction period, airborne emissions will consist of fugitive dust and construction vehicle and equipment emissions. Dust will be minimized by periodic sprinkling of water over the affected area. State laws on air pollution will govern the use of fuel burning equipment and internal combustion engines.

8. Noise Standards

Inasmuch as the project site is located in the midst of open sugarcane fields; and, the nearest residential subdivision is located approximately one-half mile from the project site, both interior and exterior noise will not have any detrimental impact on the environment.

9. Historic Preservation

The Kualoa Archaeological Research staff conducted a reconnaissance survey at Kapolei Park in May 1977. No surface artifacts, midden, or prehistoric structures were seen, including McAllister’s heiau and rock shelter, which were apparently destroyed before the time the army acquired the site for the artillery base.

The archaeological research staff recommended that because of the extensive land modifications on the site, no further work will be required. If, however, during park development any evidence of prehistoric occupation should be uncovered, an archaeologist will be called to evaluate the find.

10. Traffic and Transportation

Access is readily available via Farrington Highway and Barbers Point access road.

Most of the park users will be travelling by private vehicles.

Additional transportation facilities will not be required.

11. Utilities

Electrical and sewage facilities are available.

An 8-inch waterline will be connected to existing resources in the vicinity of Farrington Highway.
12. Irreversible/Irretrievable Resources

Building materials and labor will be committed.

B. Socio-Economic Environment

1. Population/Recreation Standards

The 1975 Census indicated a population of 21,800 in the Ewa-Makakilo area. A population of 104,000 is expected by the year 2000. Based on the projected population and measuring it against the recommended 3 acres of park land per 1,000 population, there will be a need for approximately 312 acres of active recreation space. At present, there are only four playgrounds consisting of about 26 acres.

2. Police, Fire and Health

Emergency facilities are readily available in nearby communities. These include the Waianae Police Sub-Station; Leeward Hospital and the Makakilo Fire Station.

III. Alternatives

The only alternative considered is "no action." Inasmuch as there will be need for more public playgrounds in the Ewa-Makakilo area to support the projected population, this alternative is not acceptable.
APPENDIX D

PEMCO Field Report 1/10/90
FIELD REPORT

Date of visit: January 10, 1990

Project: Fort Barrette Environmental Assessment

Prepared by: Toan Nguyen

Weather: Clear

Purpose: Verify findings of the PUU O KAPOLEI - ARCHAEOLOGICAL RECONNAISSANCE SURVEY of May 31, 1977.

*********************************************************

1. The field survey of the Fort Barrette site was accomplished by Mr. Toan Nguyen and Mr. George Krzyminski from PENCO.

2. Insert from the archaeological survey:

"... There are presently at least twenty abandoned, or partially abandoned, late historic military structures on the site, including bunkers, barracks, and a chapel. Construction of these buildings would have required very extensive bulldozing of the area. Several basalt rock freestanding and retaining walls were seen which appear to have been built by army personnel..."

3. The site is generally overgrown with grass. However, the remains of the structures that are mentioned in the archaeological survey may still be identified at various locations as indicated in the attached plan - project site.

4. Remains of what appear to be a chapel and living quarters (barracks) are identified as "2-CMU Buildings" south of the fire control tower. These structures are accessible by a gravel road from the tower, and also by a foot path from the site of some former housing units east of the structures. The chapel structure has a large meeting room, and two smaller rooms which appear to be a bathroom and an office. The CMU walls, roof, and concrete slab are still remaining. The barracks structure has several rooms which indicate living quarters. Only exterior and interior CMU walls, and concrete slabs of the structure are remaining.

5. Several archery practice ranges are scattered throughout the site. No animals were seen during the visit.