



INTERNATIONAL
TECHNOLOGY
CORPORATION

*File
EPA*

December 1, 1987

Ted Gerow
Department of Environmental Health
470 27th Street, Third Floor
Oakland, California 94612

Dear Mr. Gerow:

SUBJECT: LEAK DETECTION PLAN FOR THE SAN FRANCISCO-OAKLAND BAY
BRIDGE TOLL PLAZA FACILITY
IT PROJECT NUMBER 190297-13

IT Corporation (IT) has been retained by the Office of the State Architect (OSA) in Sacramento, to prepare leak detection plans for underground storage tanks at state-owned facilities throughout Regions I and II as specified by OSA under Agreement Number CS 6387 and Work Order Number GST 754.

Each facility has been visited and a leak detection plan has been developed. Enclosed is the leak detection plan for the facility mentioned above.

We ask that your agency review and approve the plan. Please sign and return the enclosed form. Upon notice of the approval, the state will proceed with plan implementation. We look forward to hearing from you soon.

If you have any questions, please call me at (415) 372-9100.

Sincerely,

John McGuire
Project Manager

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ENVIRONMENTAL HEALTH
ADMINISTRATION

Regional Office

4585 Pacheco Boulevard • Martinez, California 94553 • 415-372-9100



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

*11/11/87
S.F. OAKLAND Bay Bridge
TOLL PLAZA
INTERSTATE 580
94602*

December 1, 1987

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Department of Environmental Health
470 27th Street, Third Floor
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John McGuire
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LEAK DETECTION AND MONITORING PLAN
OFFICE OF THE STATE ARCHITECT
SACRAMENTO, CALIFORNIA
IT PROJECT NUMBER 190263

PREPARED FOR:

STATE OF CALIFORNIA
DEPARTMENT OF GENERAL SERVICES
OFFICE OF THE STATE ARCHITECT
1500 5TH STREET
SACRAMENTO, CALIFORNIA 95814

PREPARED BY:

IT CORPORATION
4585 PACHECO BOULEVARD
MARTINEZ, CALIFORNIA 94553

DECEMBER 1, 1987

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF WORK

The following plan outlines a method recommended to OSA by IT Corporation (IT) for a leak detection plan (LDP) and tank monitoring program (TMP) for management of the underground storage tank at the S.F.-Oakland Bridge Toll Plaza. The OSA has selected IT to develop plans to bring a number of underground tanks into compliance with current state and local agency requirements.

1.2 BACKGROUND

This plan has been prepared in compliance with current and proposed "California Underground Tank Regulations" dated August 1985, and applicable local agency guidelines. The regulations referenced in this plan are derived from the California Administrative Code, Title 23 (Waters), Subchapter 16 (Underground Tank Regulations) by the California State Water Resource Control Board.

Enclosed is a copy of a completed survey form and site sketch for the facility. Information contained in the survey form was completed in cooperation with the facility manager.

2.0 LEAK DETECTION PROGRAM

2.1 TANK INTEGRITY TESTING

All tanks included in this program have recently undergone integrity testing. Based on the allowable product variation of less than or equal to 0.05 gallons per hour for testing of tanks with a capacity up to 12,499 gallons, as stated in the regulations, the tanks at this facility (except the 3,000 gallon gasoline tank) are certified "tight". A copy of the certification has been submitted by OSA to your agency.

The 3,000 gallon gasoline tank is currently under investigation for a suspected leaking fill line. Once proper repairs are completed, the tank will be tested to determine integrity. If the tank is certified "tight", the monitoring alternative selected in this plan will be implemented. Should the tank fail the test, or contamination be found around the tank, proper unauthorized leak reporting procedures will be followed and cleanup procedures implemented.

As required by the guideline alternative selected for this facility, tank integrity testing shall be repeated annually.

3.0 TANK MONITORING PROGRAM

Based upon results of the leak detection program, the proposed tank monitoring program at this facility shall consist of all applicable monitoring methods under State Alternative 5.

3.1 ALTERNATIVE 5

Monitoring under this alternative shall include daily inventory reconciliation, annual tank testing, and continuous pipeline leak detectors, where applicable. This monitoring option has been selected for the tanks at this facility based upon the amount of monthly throughput and the assumption that inventory reconciliation can be measured by the tank owner, operator, or other qualified personnel on a daily basis in accordance with all provisions of Section 2644 of the regulations. Attached is an example of an Inventory Reconciliation Sheet that will be used at this facility. Inventory reconciliation indicating a product loss exceeding the allowable measurement error given in Section 2641-(c)-(5)-(iv), Table 4.2 of the regulations, plus 0.15 percent of the throughput at any time during a 30-day period shall require further investigation in accordance with Section 2644 (f) and (g).

The method of delivering product is by suction from the tanks to the dispensing units. Therefore, pipeline leak detectors are not planned for this facility.

If daily inventory reconciliation requirements by qualified personnel are not met, monitoring under proposed Alternative 9, described in Section 3.2 below, shall be considered.

3.2 PROPOSED ALTERNATIVE 9

Although this alternative is currently not approved by the State of California, it has been included here for reference. Monitoring under this alternative shall include daily inventory reconciliation, rate of volume change (RVC) testing, tank testing once every three years, and pipeline leak detectors, where applicable. This monitoring option can be selected for the tanks at this facility based on the condition that the inventory reconciliation requirement for manual measurements of the tank volumes cannot be met.

To comply with this requirement, a tank level measuring (TLM) device shall be installed to automatically perform inventory reconciliation and RVC testing functions.

Inventory reconciliation exceeding the levels specified in Table 4.3 Section 2541-(c)-(9) of the regulations shall require further investigation. The TLM must meet with requirements of Section 2641-(c)-(9)-(e) - which specifies detection of a temperature compensated volume change of 0.2 gallons per hour for each hour during rate of volume change testing when liquid is at center of tank.

Frequency of RVC testing is dependent on the inventory reconciliation allowable variation selected from Table 4.3 Section 2541-(c)-(9).

The method of delivering product is by suction from the tanks to the dispensing units. Therefore, pipeline leak detectors are not planned for this facility.

3.3 OVERFILL PROTECTION OPTION

Although this option is not required by law, it is highly recommended. Retrofit the existing tanks with an overfill protection basin having a minimum 5-gallon capacity and a drain valve in the base to provide a means for product return to the primary container.

3.4 REPORTING

As required under Alternative 5 and 9, a report shall be submitted quarterly to the regulating agency indicating the inventory reconciliation findings, dates, and excessive variations.

TO BE COMPLETED BY REGULATORY AGENCY

Facility Name: S.F.-Oakland Bay Bridge Toll Plaza Facility
IT Project Number: 190297-13

The proposed leak detection plan ____ is ____ is not (please check one) approved by this agency.

Comments: _____

Please return completed form to:

IT Corporation
Attention: John McGuire
4585 Pacheco Boulevard
Martinez, California 94553

Agency Name and Address _____

Signature of Agency Representative _____
Please print name here _____

PRELIMINARY UNDERGROUND TANK INFORMATION SURVEY
Office of the State Architect, State of California

INSTRUCTIONS FOR COMPLETING FORM

- 1) Complete one form for each facility.
- 2) Where data is estimated or uncertain, note "est" or "approx"
- 3) Not all of the information requested here will be available. However, it is very important and should be completed or estimated if at all possible.
- 4) Attach additional sheets if more space is needed to answer the questions.
- 5) Provide at least two (2) pictures as per specifications.

Photo Identification A10-A19

I. ADMINISTRATIVE

A. Department

Name: S.F.-Oakland Bay Bridge Toll Plaza
Address: P.O. Box 7310
City: San Francisco County: _____ CA Zip: 94120
Phone: (415) 464-0876 Contact: John Ongaro

B. Facility

Name: S.F.-Oakland Bay Bridge Toll Plaza
Address: S.F.-Oakland Bay Bridge Toll Plaza
Nearest Cross Street: Interstate 580
City: Oakland County: Alameda CA Zip: 94102
Phone: (415) 464-0876 Contact: John Ongaro

B. Facility (continued)

Number of underground tanks at facility: three

Tanks - owned X leased _____

Facility - owned X leased _____

C. Operator (if different from facility)

Name: Same as I-B

Address: _____

City: _____ County: _____ CA Zip: _____

Phone: _____ Contact: _____

Emergency Contact

Day: Name Jack Oldenhaig Phone (415) 464-0876

Night: Name Toll Dispatcher Phone (415) 464-0589

E. Product Supplier

Name: Bay Cities Oil Marketer

Address: 60 Castro Street

City: Richmond County: Contra Costa CA Zip: 94802

Phone: 800-548-1888 Contact: _____

F. Registration and Certification

Which regulations govern the tanks at this facility (e.g.
State, County, Local) State

F. Registration and Certification (continued)

Have tanks been registered? unk Date of registration _____

Which agency enforces the State tank regulations? _____

Agency Address: Department of Environmental Health

470 27th Street, Third Floor

Oakland, CA 94612

Phone: (415) 874-6434 Contact: Ted. Gerow

Tank Registration or Permit #: _____

Fees Paid: _____ Cost: _____

(Provide copies of registration/permit/fees to consult)

II. SITE INFORMATION

A. Geology

Predominant natural soil type: silt and clay

Depth to first aquiclude _____

Is site area on floodplain? yes _____ no X

B. Groundwater

Name of the groundwater basin and sub-basin? _____

Alameda Bay Plain Basin

Estimated depth to high water table ~5 feet

Estimated depth to low water table ~10 to 15 feet

Average depth to water table ~10 feet

Are there any water wells within 0.5 miles? yes _____ no X

If yes, distance and direction to well _____

B. Groundwater (continued)

Uses of groundwater (eg. agricultural, domestic, industrial)

none

Current conditions of groundwater unc- S.F. Bay

Hydraulic gradient and direction, if known West

Approximate ground surface slope and direction flat

C. Nearby Utilities

Distance to nearest underground telephone line ~25'

Distance to nearest underground gas line ~25'

Distance to nearest underground power line ~25'

Distance to nearest water line ~10'

Distance to nearest storm sewer line unc ~30'

Distance to nearest off-site basement ~100'

Are there any high voltage power lines that pose a risk to drilling? yes X no _____

Is there any nearby power for the monitoring system

yes X no _____

D. Site History and Surrounding Area SOURCE:John Ongaro

Please note source of information entered in this section.

Nearest location where cuttings generated during the drilling operations can be disposed of none

D. Site History and Surrounding Area (continued)

Suspected contamination X Confirmed contamination _____

No contamination _____

Dates and extent of known spills at this site and materials spilled none

Type of surrounding environment (eg. forest, agricultural, industrial etc.) industrial/S.F. Bay

Activities on adjoining sites Port of Oakland

Hazardous liquids that may be stored on adjoining sites (eg. hydrocarbons, fuels, pesticides solvents etc.) paint
 thinners, motor oils

Known spills on adjoining sites none

E. Facility Plan

Draw a sketch of the site with the recommended location of soil borings in accordance with the schedule of number of groundwater and/or vadose monitoring wells required pursuant to the provisions of monitoring alternatives of the California Underground Storage Tank Regulations.

Please see Attached Sketch

III. TANK INFORMATION

A. General Tank Description

OSA Tank Identification Number (1)-2241, (2)-2242, (3)-2477

Attach sketch of tank location.

Tank used for: Product storage: X waste storage
 sump other (describe)

Capacity in gallons (1)3000, (2)2000, (3)2000

A. General Tank Description (continued)

Annual throughput in gallons (1)-70,000, (2&3)-20,000

Status of tank (active or inactive) all active

If inactive:

Date tank taken out of service _____

Quantity of material remaining in tank _____

Is tank filled with inert material? yes _____ no _____

Manufacturer of tank unknown

Installation year (1)-1957, (2)-1979, (3)-1957

Date of last tank test all 3-18-87

B. Tank Construction and Operation

Wall Material all steel

Elevation of ground above each tank ~6 feet

Tank dimensions (1)-5.3x18, (2)-5.3x12, (3)-5.3x12

Depth to bottom of tank unc ~8 to 10 feet for all

Is tank in a vault? yes _____ no X

Is there secondary containment? yes _____ no X

Type of backfill (natural soil, sand, pea gravel, clay etc)

unc-gravel

Type of internal protection (eg. liner, epoxy) unk

Type of external protection (eg. asphalt, fiberglass)

unknown

Type of cathodic protection none

Existing monitoring equipment or procedures none

B. Tank Construction and Operation (continued)

Are fuel additives (inhibitors) used in this tank?

yes _____ no X

Does tank have fuel transfer capability? yes X no _____

Size and number of tank openings (1)1x3",1x2", (2)1x2",2x4", (3)1x3",1x4",1x2" (plugged)

C. Material Stored

Material currently stored (1)-gasoline, (2&3)-Diesel

If petroleum stored, grade of motor vehicle fuel or waste oil. (1)-Unleaded, (2&3)-Diesel #2

Material stored used for (1)emergency vehicles, (2&3)-boiler

Past materials stored (1) regular gasoline

D. Tank History

PLEASE NOTE SOURCE OF THE INFORMATION ENTERED IN THIS SECTION

source:John Ongaro

Describe past repairs and include dates Currently the unleaded gasoline tank is under investigation. The fill line did not pass the pressure test.

Dates and extent of known leaks none, except fill line to gas tank may have leaked-currently under investigation

E. Miscellaneous Tank Information

What are the compliance alternatives for this tank _____

State Alternative # 5 after proper repairs on gas tank

COMPLETE THE FOLLOWING QUESTIONS IF THE INFORMATION IS KNOWN. DO NOT TRY AND INSPECT THE TANK FOR CODE COMPLIANCE.

Which construction codes do tanks meet? (eg. fire codes, county building codes, etc) - give dates. unc

Surface elevation - unc ~6 feet

Surface material directly above tank (eg. pavement) _____
asphalt and concrete

Does the surface material show signs of settlement or distress? no

Is surface directly above the tank used (eg. structures, storage yard) yes

If yes, describe (1)-vehicle parking (2)-sidewalk (3)-road

E. Miscellaneous Tank Information (continued)

Are there signs of tank movement (eg. floating, excessive settlement) no

If yes, explain _____

Are filler caps, access covers, locks, etc functional yes

Is overfill protection available no

(NOTE: THE FACILITY MANAGER SHOULD ANSWER THE FOLLOWING FOUR QUESTIONS).

Is underground storage needed at this facility yes

Feasibility of placing tank above ground feasible

Are commercial sources available and feasible to use by the agency available for gasoline only, but not feasible

Feasibility of eliminating or consolidating this tank with others? not feasible

Are other State facilities within one mile of this site? yes

What equipment is used on-site that cannot be taken off-site for refueling? boilers and backup generators

General comments diesel tank near admin bldg. rarely used.

Gasoline and diesel must be on site. Gas pump removed until gas fill line problem can be resolved.

Would the elimination of the tank(s):

- pose a threat to public safety yes

- hinder the agencies ability to provide vital services yes

IV. INVENTORY RECONCILIATION

Is inventory reconciliation done yes

If yes, with what frequency _____

Daily _____ Weekly X Monthly _____

Are there meters with totalizers on dispensing mechanisms? currently on diesel pump only

Is there an automated tank level gauging system? no

If inventory reconciliation is done on a daily basis, what is your typical daily variation? +/- 10 gal. _____

+/- 25 gal. _____ +/- 50 gal. _____ +/- 100 gal. _____

greater than 100 gallons _____

What is tank throughput? Daily (1)~200,(2&3)~50

Weekly (1)~1400,(2&3)~350 Monthly (1)~6000,(2&3)~1500

If the tank is 1,000 gallons or less, can the tank be operated so that there are periods of up to 7 days where no inputs or withdrawals are allowed? _____

V. PIPING INFORMATION

A. General Piping information

Attach a sketch of piping layout

Type of piping used steel

Size of piping used unc except for 2" supply to boilers

Length of piping from tank to dispenser or point of use _____

(1)~15',(2&3)~20 feet to boilers,~200 feet to dispenser

A. General Piping Information (continued)

Age of piping see tank installation info

Is piping above or below ground (indicate on sketch) below

Type of backfill used in piping trenches unc

Method of delivering material through pipeline (gravity, suction, pressure, etc) suction

Leak detection equipment used none

Venting type all 2" ~20 feet above ground

Is product metered between tank and end device no

Are fill connections or sounding tube covers located above grade? no

Is there an overfill protection device on the fill pipe no

Describe known leaks (dates, extent, location) gas tank did not pass the pressure test-problem is believed to be in the fill line

B. Miscellaneous Piping Information

Accessibility of piping for workmen partially accessible

Describe effort to access piping break and remove concrete

Feasibility of placing piping above ground not feasible

Feasibility of placing piping in utility tunnel not feas

VI. TANK INVESTIGATION HISTORY

Date	Describe Investigation	Investigation Co. etc.
<u>Mid 1987</u>	<u>Uncovering fill line to gasoline tank to tighten fittings</u>	<u>unknown</u>

VII. LEAK DETECTION PLAN INFORMATION

A. Identification of all suitable monitoring alternatives

Alternative # State Alternative # 1

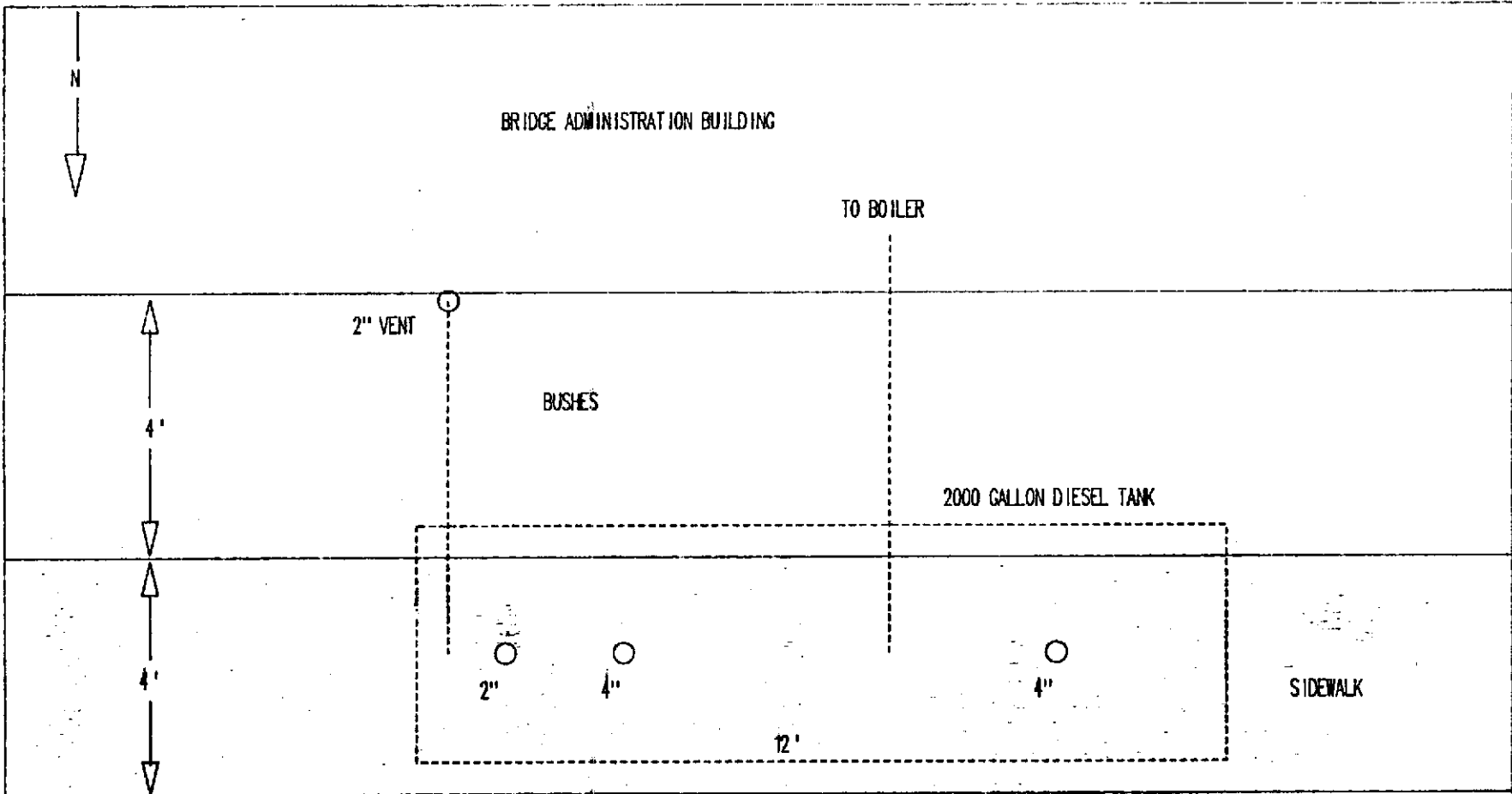
Alternative # State Alternative # 5

Alternative # _____


Alternative # _____

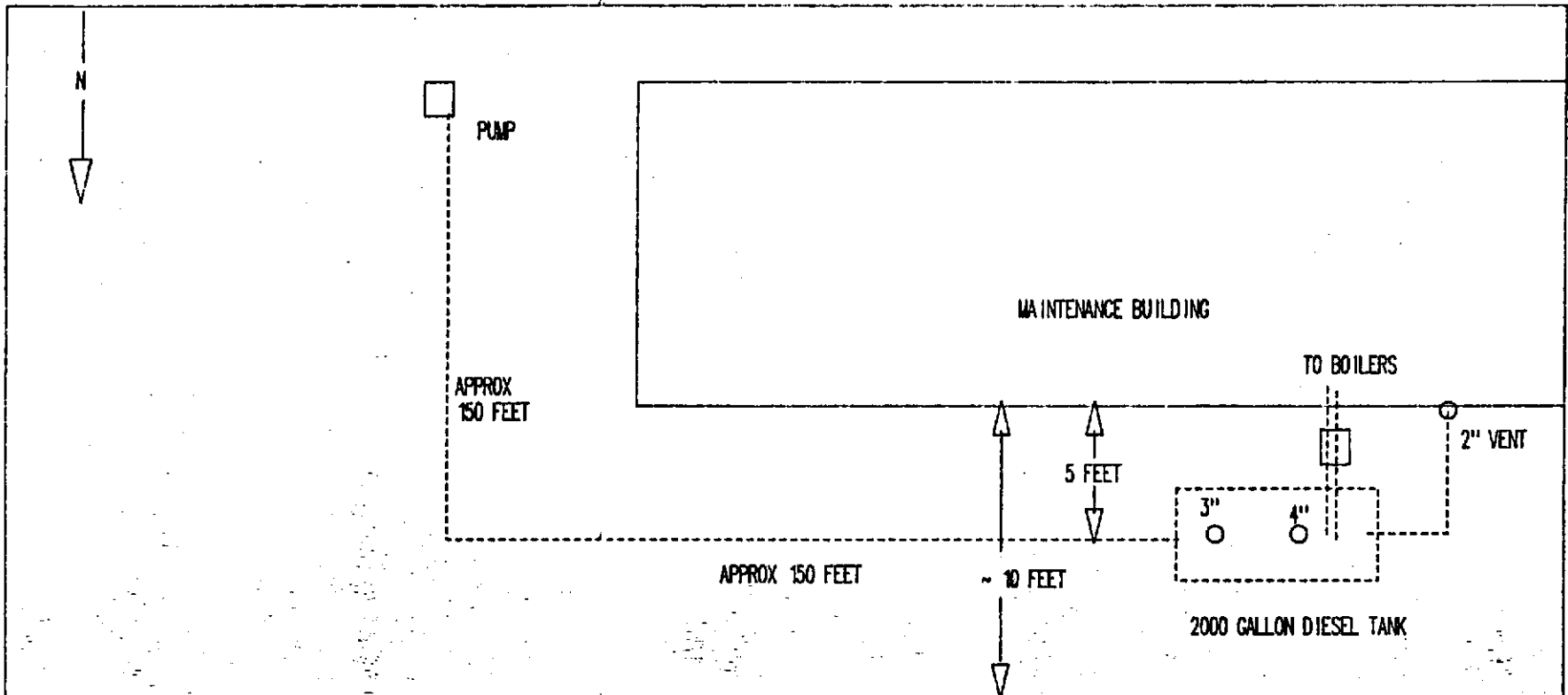
B. Monitoring Alternative Selected No. # 5 after proper repairs

Reasons for selection Cost effective to use personel on
site.




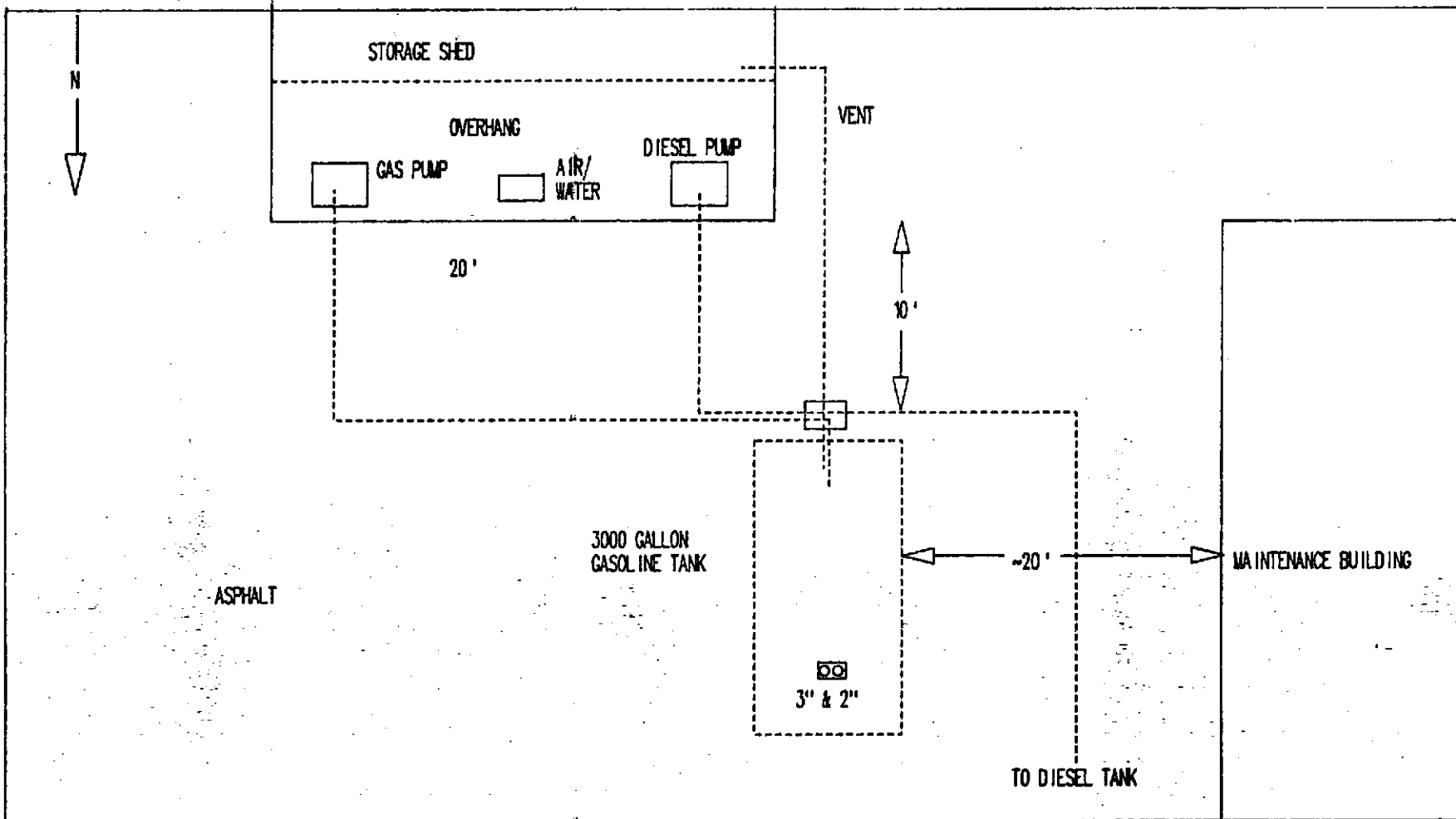
WEST BOUND TRAFFIC ON BRIDGE

 <p>...Creating A Safer Tomorrow</p>	FACILITY NAME: BAY BRIDGE TOLL PLAZA	DRAWN BY: DAVID CAMILLE
	DRAWING NUMBER: 190297-13-1	DATE: 10-1-87



WEST BOUND TRAFFIC ONTO BRIDGE

 ...Creating A Safer Tomorrow	FACILITY NAME: BAY BRIDGE TOLL PLAZA	DRAWN BY: DAVID CAMILLE	
	DRAWING NUMBER: 190297-13-2	DATE: 10-1-87	CHECKED BY: DJC 12-1-87 APPROVED BY: Jha 12-1-87



...Creating A Safer Tomorrow

FACILITY NAME: BAY BRIDGE TOLL PLAZA
 DRAWING NUMBER: 190297-13-3

DRAWN BY: DAVID CAMILLE
 DATE: 10-1-87
 CHECKED BY: DJC 12-1-87
 APPROVED BY: [Signature] 12-1-87

