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HAYWARD FIRE DEPARTMENT

September 24, 1998
L98184



BONKOWSKI & ASSOCIATES, INC.

Mr. Danny Galang
City of Hayward Fire Department
777 B Street
Hayward, CA 94541

**RE: Interim Remedial Measures Workplan
Hayward Cardlock,
1565 Industrial Parkway West,
Hayward, California**

3650 Mount Diablo Blvd.
Suite 200
Lafayette, California 94549

(510) 284-3552- FAX
(510) 283-9042

Dear Mr. Galang:

This Interim Remedial Measures Workplan (IRM) is submitted on behalf of Golden Gate Petroleum, for the Hayward Cardlock located at 1565 Industrial Parkway West in Hayward, California (Figure 1). It is proposed that the IRM be conducted concurrently with the removal and upgrade of the site's underground storage tanks, product lines, and dispenser islands, replacement actions required under 40 Code of Federal Regulations, Part 280. The tank system upgrade and replacement work will be conducted during either October or November 1998. To take advantage of the opportunities at the site that the tank replacement work will provide, and consistent with Section 2722(b) of Title 23 Division 3 Chapter 16 California Code of Regulations, overexcavation and dewatering will be conducted to remove hydrocarbons from subsurface soils and groundwater adjacent to the underground storage tank cavity at that time. A collection trench will be installed in the tank cavity excavation backfill to hydraulically control the migration of separate and dissolved phase hydrocarbons.

Background

Hayward Cardlock is located along the north side of Industrial Parkway West. The Hayward Cardlock (Figure 2) was purchased in 1983 by Golden Gate Petroleum and has been used for the retail sale of gasoline and petroleum fuel products since approximately 1960 when the station was installed. There are eight underground storage tanks at the station, a 2,000 gallon kerosene, 4,000 gallon Stoddard solvent, 12,000 gallon mid-grade unleaded, 12,000 gallon premium unleaded, 12,000 gallon red dye diesel, 20,000 gallon unleaded regular, and two 20,000 gallon diesel fuel.

5,000-gal

Tank #9: 1,000-gal used oil tank inside the shop.
(Fill/Evacuation Port is a straight drop.)



On 29 July 1998, Bonkowski & Associates, Inc. investigated two tank cavity backfill monitor ports located next to the three 20,000 gallon tanks at the site (Figure 2). The westerly monitor port was dry. The easterly sample port contained groundwater at a depth of approximately 13 feet and approximately 2 inches of product. Analysis of the product sample showed that it contained 160,000 mg/kg total petroleum hydrocarbons as gasoline (TPHG), 830,000 mg/kg total petroleum hydrocarbons as diesel (TPHD), 330,000 µg/kg benzene, 120,000 µg/kg toluene, 780,000 µg/kg ethylbenzene and 790,000 µg/kg total xylenes and 3,400,000 µg/kg methyl tertiary butyl ether (MTBE). Groundwater in the easterly port contained 140 mg/l TPHG, 58 mg/l TPHD, 1,500 µg/l benzene, 250 µg/l toluene, 230 µg/l ethylbenzene and 220 µg/l total xylenes and 260,000 µg/l MTBE. Kerosene was not noted in either of the samples. A copy of the laboratory report is included in Appendix A.

Beneficial Uses

The Water Quality Control Plan for the Bay Area Region has designated the beneficial uses of groundwater in this location as municipal and domestic supply, industrial water supply, industrial process water supply, agricultural supply, and freshwater replenishment to surface waters. The State and Federal standards applicable to groundwater at the site are based on Maximum Contaminant Levels (MCLs) established for hydrocarbon concentration and odor and taste thresholds. The standards are:

Aromatic Hydrocarbons

Benzene	1.0 µg/l	California Primary MCL ¹
Toluene	42 µg/l	Taste and odor threshold (U.S. EPA) ²
Ethylbenzene	29 µg/l	Taste and odor threshold (U.S. EPA) ²
Xylenes	17 µg/l	Taste and odor threshold (U.S. EPA) ²
MTBE	14 µg/l	Proposed public health goal (OEHHA) ³

Hydrocarbon Mixtures

Diesel or Kerosene	100 µg/l	Taste and odor threshold (U.S. EPA) ⁴
Gasoline	5 µg/l	Taste and odor threshold (SWRCB) ⁵

¹ Primary MCLs are based on health effects data, but contain other information relating to technical and economic feasibility of attainment in a water distribution system.

² Federal Register, Vol. 54, No. 97, pp. 22138, 22139.

³ Office of Environmental Health Hazard Assessment

⁴ 1980 Health Advisory. Documents states that the 100 µg/l level should be health protective for 10 days of exposure of less. No lifetime exposure advisory has been developed. However, lifetime health advisories are normally at least ten-fold lower than 10-day advisories. Therefore, a level of 10 µg/l would be a reasonable estimate of lifetime health protective level for diesel or kerosene.

⁵ McKee & Wolf, *Water Quality Criteria*, 2nd Ed., State Water Resources Control Board (1963, 1978) p. 230.

Remedial Action Goals

No explicit remedial action goal for soil and groundwater has been stated by the local implementing agency for the site. The State Water Resources Control Board (SWRCB) states the general goal for soil and groundwater remediation in the State's Non-Degradation Policy. State Water Resources Board Resolution No. 68-18 directs that there be no degradation in the quality of water and requires the attainment of "background" water quality levels and the remediation of contaminated soils to prevent further contamination. If background levels cannot be attained, the alternative cleanup levels, less stringent than background, shall:

1. Be consistent with maximum benefit to the people of the state.
2. Not unreasonably affect present and anticipated beneficial uses of such water.
3. Not result in water quality less than that prescribed in the Water Quality Control Plans and policies adopted by the State Regional Water Board.

Therefore, the proposed cleanup level is to be consistent with the protection of beneficial uses, the limitations of cleanup techniques, and the achievement of water quality control standards. These IRM actions are stated below.

Statements of Work

To take advantage of the access to contaminated soil and groundwater uncovered during the tank system upgrade activities, Bonkowski and Associates, Inc. plans to excavate and remove hydrocarbon impacted soils around the underground tanks, product lines, and dispenser islands as an IRM. The objective of the work is the removal of hydrocarbon contaminated source soils around the tanks and the product lines that are, or may be, contributing to groundwater contamination at the site.

Hydrocarbon impacted groundwater will be pumped from the excavation cavity during the excavation, treated using an adequately sized carbon bed, and discharged to the City of Hayward publicly owned treatment works (POTW) or under a National Pollutant

Discharge Elimination System (NPDES) permit to the storm sewer system. The work elements required to complete these tasks are summarized and described below.

Task 1. Preparation of Health & Safety Plan

B Bonkowski & Associates, Inc. will prepare a site specific Health & Safety Plan to address IRM activities. All team members and subcontractor personnel assigned to perform field work will have met applicable 29 Code of Federal Regulations (CFR) 1910.120 and California Code of Regulations (CCR) Title 8 requirements regarding 40-hour basic health and safety training and annual refresher training.

Task 2. Soil Excavation

The underground storage tanks, product lines and dispenser islands will be removed from the site. Groundwater is anticipated to be at a depth of approximately 13 feet. Impacted soils will then be excavated using a track excavator. Overexcavation of the tank cavity will be to a depth of approximately 15 feet below ground surface in the anticipated area shown in Figure 3. Groundwater is anticipated to be at a depth of approximately 15 feet during the IRM activity. Soil below the dispenser islands and product lines will be sampled under the supervision of the City of Hayward Fire Department. If the shallow soil has been impacted, it will be removed according to the criteria stated below. It is not anticipated that shoring will be necessary to conduct the IRM, however, if further review of the geotechnical data or site conditions warrant it, shoring will be considered.

Periodically, a soil sample taken from the bucket of the excavator will be analyzed for hydrocarbon content in the field using an Organic Vapor Meter (OVM). Soils that generate field screening readings of less than 100 parts per million TPH will be left in place. Soils that generate field screening readings of greater than 100 parts per million TPH will be loaded onto transport trucks and hauled to the nearest and most cost effective disposal facility that is permitted to receive them, such as Forward Landfill in Manteca, California.

Task 3. Soil Sampling and Laboratory Analysis

Soil samples will be collected at the soil water interface every 20 lineal feet along the perimeter of the excavation. In addition, a soil sample will be collected from soils that are offhauled to the disposal facility at a ratio of 1 sample per 50 cubic yards of soil. The samples will be placed in brass tubes, sealed at each end with Teflon tape and plastic end caps, placed on ice in a cooler, and transported under chain-of-custody to a State of California Certified Laboratory for chemical testing. The samples will be analyzed for TPHG, TPHD, BTEX, and MTBE using EPA Methods 8015 and 8020 respectively. The sample containing the highest levels of MTBE will be analyzed for confirmatory purposes using EPA Method 8240.

Task 4. Groundwater Treatment

It is anticipated that a considerable amount of hydrocarbon impacted groundwater, including separate phase hydrocarbons, will be encountered during the excavation portion of the IRM. As necessary, groundwater will be pumped from the excavation and deposited into a 20,000 gallon storage Baker tank that will be situated on-site. The groundwater will be pumped from the storage Baker tank through an appropriately sized pressure rated liquid phase granular carbon bed for treatment prior to discharge.

Samples of the discharged water will be collected in laboratory prepared sample containers from the outlet of the carbon bed, placed on ice in a cooler, and transported under chain-of-custody to a State of California Certified Laboratory for chemical testing. The samples will be analyzed for TPHG, TPHD, BTEX, and MTBE using EPA Methods 8015 and 8020.

Task 5. Excavation Backfilling

The excavation will be backfilled at the completion of the sampling activities. The backfill will consist of 1-1/2 inch crushed rock placed into the excavation to a depth of approximately 1 foot above the existing groundwater surface in the excavation. One layer of geo-textile fabric will be placed on the crushed rock, and clean imported fill material will be placed in two-foot lifts on top of the fabric. The site will be brought to grade with the clean fill material which has been compacted to 95% relative compaction. Asphalt or concrete will then be installed to match finished surfaces at the site.

Task 6. Collection Trench Construction

During backfilling a horizontal collection trench will be constructed, at a depth of approximately 2 feet below the top of groundwater, along the downgradient sides of the excavation. The trench will be constructed of schedule 40 PVC perforated pipe running along the downgradient sides of the perimeter of the excavation. The horizontal perforated PVC collector pipe will be wrapped in a geo-textile fabric and placed on 12 inches of 1-1/2 inch crushed rock. The horizontal perforated pipe will have three blank 4-inch PVC risers to surface grade, located at either end and at the middle of the horizontal run. Eighteen inches below grade the risers will be connected by two 2-inch diameter PVC lateral conduits. The conduits will run to a corner of the site (location to be determined) that will potentially be utilized as a remediation compound. If utilized, the conduits will contain hose and electrical wiring for pump operation. The trench will then be backfilled with crushed rock to a depth of 3 feet below grade. The balance of the trench will be backfilled with clean compacted fill to surface grade. The three risers will be brought to grade, with traffic rated Christy boxes and locking lids installed at the surface. Asphalt or concrete will then be installed to match finished surfaces at the site.

Reporting

Upon the completion of the excavation and sampling activities and the receipt of the laboratory data from the soil and groundwater sampling, an Interim Remedial Measures Report will be prepared. The report will summarize the activities conducted at the site, present the laboratory data and recommendations for any future activities at the site.

Schedule

The work will be initiated within 10 working days of the Hayward Fire Department and Underground Storage Tank Cleanup Fund approval.

Please contact our Senior Engineer Ms. Cynthia Dittmar at (925) 284-0407 or Mr. Michael S. Bonkowski at (925) 283-9042 if you have any questions or need any additional information.

Sincerely,
BONKOWSKI & ASSOCIATES

Michael S. Bonkowski, CEG 1329
Senior Managing Principal

Cynthia A. Dittmar
Senior Engineer

MB/cd
Figures
Appendix A

cc: Mr. William Martin, Golden Gate Petroleum

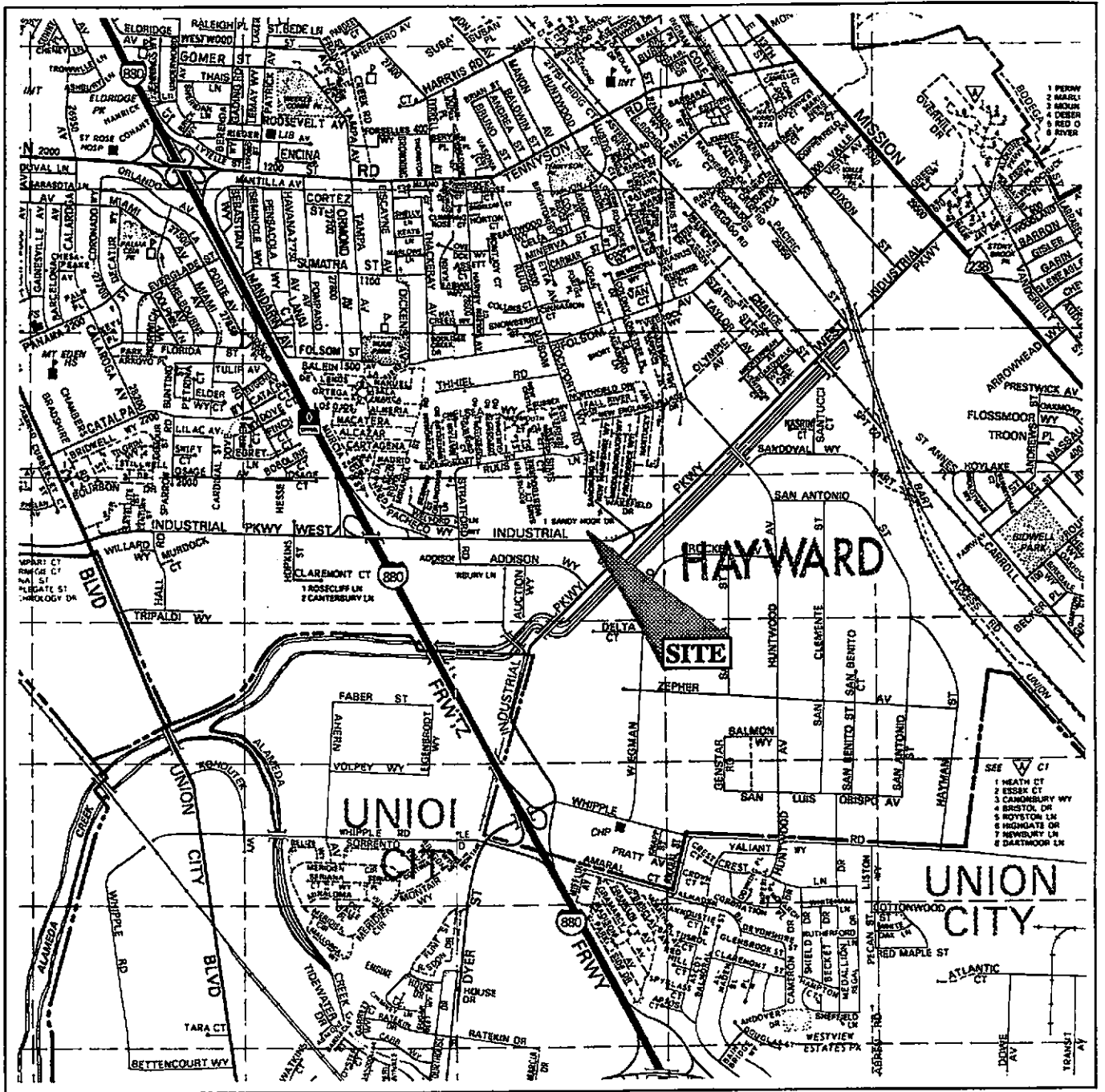
B
BONKOWSKI & ASSOCIATES, INC.
Geotechnical Services and
Hazardous Materials Management

Cynthia A. Dittmar
Staff Engineer

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510-450-0770

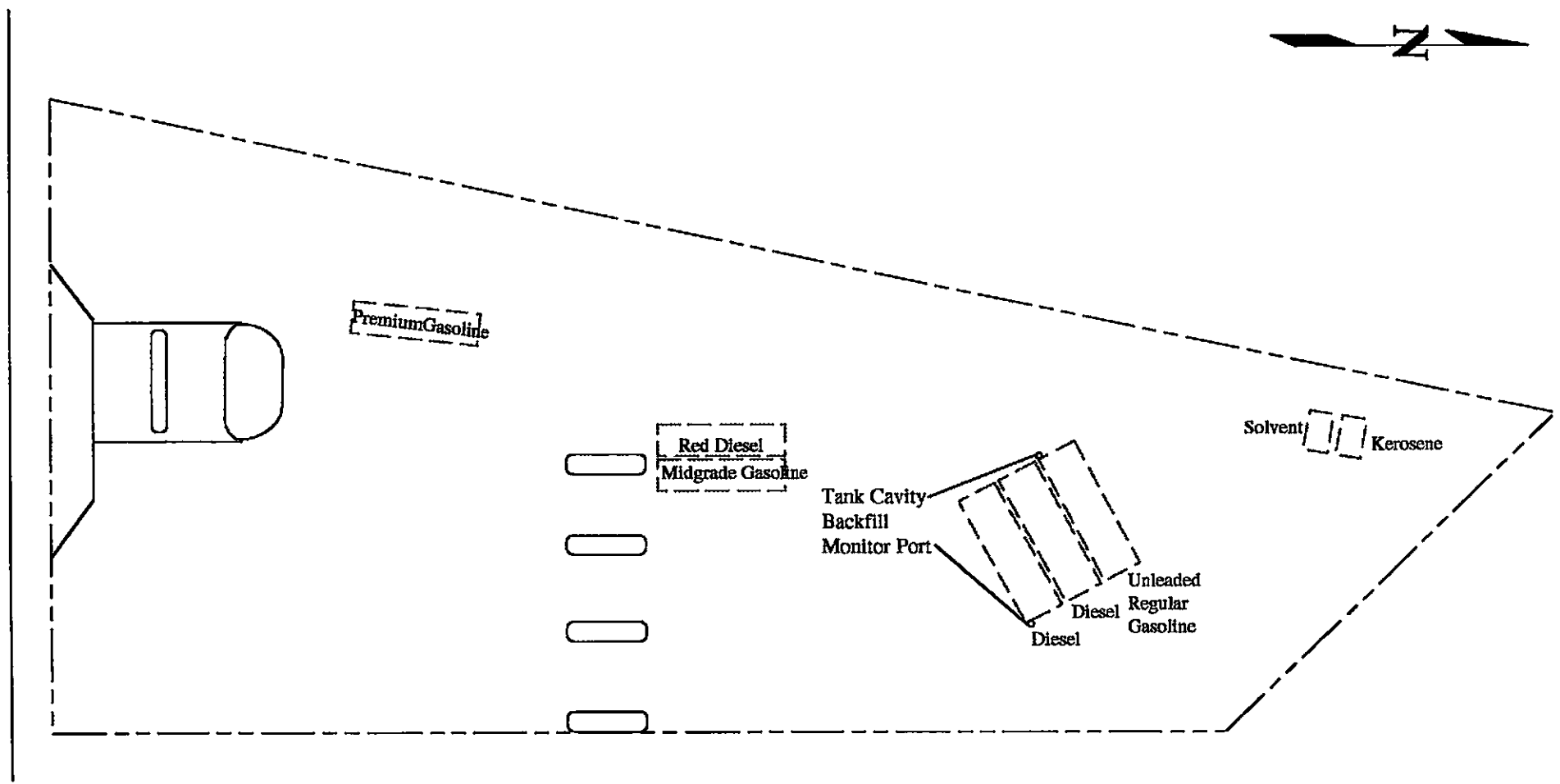
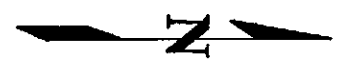


Project No. L98184	Golden Gate Petroleum
Bonkowski & Associates, Inc.	

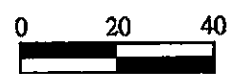
SITE LOCATION MAP
1565 INDUSTRIAL PARKWAY WEST
HAYWARD, CALIFORNIA

Figure
1

INDUSTRIAL PARKWAY WEST

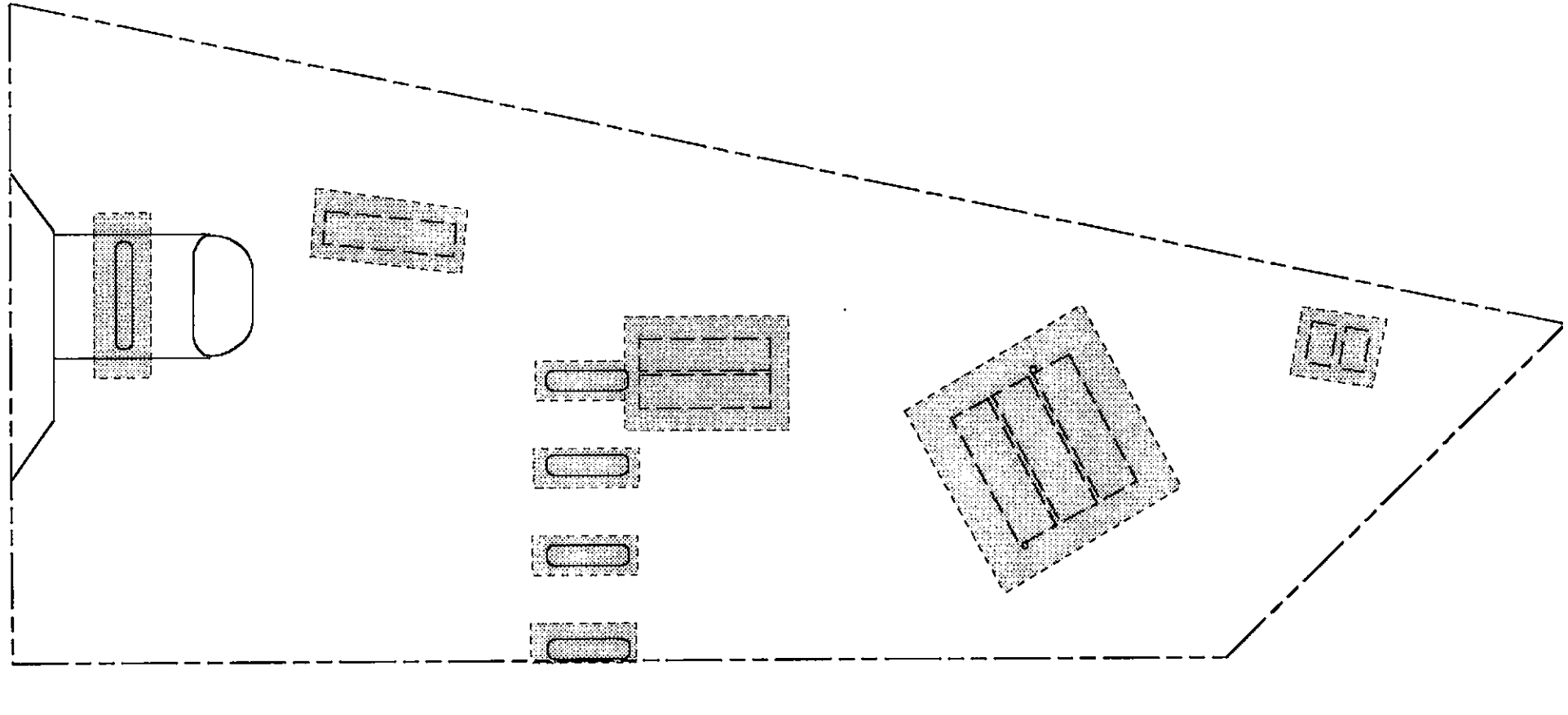
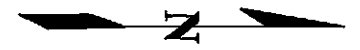


Approximate Scale:
1 inch = 40 feet





Project No. L98184	Golden Gate Petroleum	SITE PLAN MAP 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 2
Bonkowski & Associates, Inc.			

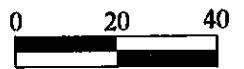
INDUSTRIAL PARKWAY WEST



Legend

-  Planned Extent of Excavation
-  Underground Storage Tank

Approximate Scale:
1 inch = 40 feet



Project No. L98184	Golden Gate Petroleum	SITE PLAN MAP 1565 INDUSTRIAL PARKWAY WEST HAYWARD, CALIFORNIA	Figure 3
Bonkowski & Associates, Inc.			



Report Number : 11998

Date : 08/12/98

Mike Bonkowski
Bonkowski and Associates
3650 Mount Diablo Blvd., Suite 200
Lafayette, CA 94549

RECEIVED
AUG 18 1998

Subject : 1 Water Sample and 1 Product Sample
Project Name : Hayward
Project Number : L98184

Dear Mr. Bonkowski,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff



Report Number : 11998

Date : 08/14/98

Subject : 1 Water Sample and 1 Product Sample

Project Name : Hayward

Project Number : L98184

Case Narrative

No Kerosene was detected in the samples.

Approved By: Joel Kiff

Project Name : **Hayward**Project Number : **L98184**Sample : **W-L98184-SP-1**Matrix : **Water**Sample Date : **07/29/98**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	1500	25	ug/L	EPA 8260B	08/01/98
Toluene	250	25	ug/L	EPA 8260B	08/01/98
Ethylbenzene	230	25	ug/L	EPA 8260B	08/01/98
Total Xylenes	220	25	ug/L	EPA 8260B	08/01/98
Methyl-t-butyl ether	260000	25000	ug/L	EPA 8260B	08/05/98
TPH as Gasoline	140000	2500	ug/L	EPA 8260B	08/01/98
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	08/01/98
4-Bromofluorobenzene (Surr)	98.5		% Recovery	EPA 8260B	08/01/98

Sample : **L98184-Product**

Matrix :

Sample Date : **07/29/98**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	330	50	mg/Kg	EPA 8260B	08/06/98
Toluene	120	50	mg/Kg	EPA 8260B	08/06/98
Ethylbenzene	780	50	mg/Kg	EPA 8260B	08/06/98
Total Xylenes	790	50	mg/Kg	EPA 8260B	08/06/98
Methyl-t-butyl ether	3400	50	mg/Kg	EPA 8260B	08/06/98
TPH as Gasoline	160000	10000	mg/Kg	EPA 8260B	08/06/98
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	08/06/98
4-Bromofluorobenzene (Surr)	98.2		% Recovery	EPA 8260B	08/06/98

Approved By:  Joel Kiff



Report Number : 11998

Date : 08/13/98

Project Name : **Hayward**

Project Number : **L98184**

Sample : **W-L98184-SP-1**

Matrix : Water

Sample Date :07/29/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	58000	50	ug/L	M EPA 8015	08/11/98

Sample : **L98184-Product**

Matrix :

Sample Date :07/29/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	830000	1000	mg/Kg	M EPA 8015	08/13/98

Approved By:  _____
Joel Kiff

