

 **JAYKIM ENGINEERS, INC.**

July 29, 1988

Ref: 6973.02B

Mr. Gene Boyer
Toxic Control Section
Department of Health Services
2151 Berkeley Way Annex 7
Berkeley, CA 94764

**SUBJECT: REVISED WORK PLAN FOR SITE INVESTIGATION AT
EKOTEK-LUBE IN OAKLAND**

We are submitting this revised Work Plan for the subsurface investigation for potential site and groundwater contamination at the above mentioned facility. We have reviewed and incorporated the comments from your letter dated June 22, 1988.

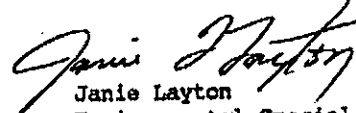
The first section, the Subsurface Work Plan, contains site characterization and proposed site assessment. The second section is the Health and Safety Plan, site-specific for the Ekotek Lube, Inc. facility.

We utilized the guidelines and references that you submitted to us in order for the Safety Plan to be in compliance with State and Federal regulations. As requested, I have enclosed a copy of my resume. Jack Bryant's resume is also enclosed as he will be the Project Manager and Site Safety Officer on this investigation.

We look forward to your review and comments on the revised Work Plan and Project Health and Safety Plan for the proposed subsurface investigation at the Ekotek Lube site. If you have any questions or need additional information, please call us at (213) 596-2755.

Very truly yours,

JAYKIM ENGINEERS, INC.


Janie Layton
Environmental Specialist

Jack K. Bryant
Project Manger

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WORK PLAN FOR SUBSURFACE INVESTIGATION AT EKOTEK LUBE, INC.

The following Work Plan addresses the proposed soil and groundwater investigation to be conducted at Ekotek Lube, Inc., a waste oil reclamation facility. The areas of concern as potential sources of contamination are identified from the prior usage of equipment on the site as follows:

- (a) Solvent tanks
- (b) Acid tanks
- (c) Underground API separator and slop tank
- (d) Underground clarifier
- (e) Transformer oil tanks
- (f) Oil storage tanks
- (g) Caustic soda tanks
- (h) Used & finished motor oils

Attached are two facility layout plans (Figures 1 & 2). One indicates the most recent uses of the tanks and equipment from 1979 through 1981 (Figure 1). The other indicates the previous uses of tanks and equipment prior to a modernization program in 1979 (Figure 2). This information was derived from previous Bay Area Air Quality Management Permits and input from former operational personnel.

SITE DESCRIPTION

The site is located at 4200 Alameda Avenue in Oakland at the cross section of East 8th Street. The plant has not been operated since late 1981. Prior to this time, the plant was operated for 3 years by Ekotek-Lube, Inc. They manufactured unfinished paraffinic based oil used in the blending of finishing automotive and diesel engine lubricants by a thin film distillation process. Prior to distillation, the used oil was pretreated with sodium hydroxide to neutralize any organic acids. The products derived from the total process were unfinished lube base oil, light distillate fuel, and asphalt flux.

The period prior to the 1979 modernization utilized sulfuric acid for treatment of the oil. However, upon its discontinuance, all sludge from that process was removed at that period of time from the site. Used glycol was also received and distilled during this time.

The chronology of previous firms owning and operating the site for waste oil reclamation is as follows:

- 1978 - 1981 Ekotek-Lube, Inc.
- 1976 - 1978 Bonus International
- 1966 - 1976 Economy Refining & Service Company
- 1925 - 1966 Economy Byproducts & Economy Service Company

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GROUNDWATER DEPTH

The groundwater depth in the vicinity of the subject site is 9 feet below the surface. This level may be influenced by tidal fluctuations in San Leandro Bay. The gradient is expected to be in a westerly direction.

SITE CHARACTERIZATION PROCEDURES

PROPOSED RESIDUAL INVESTIGATION

We do not propose testing of the residual products in the tanks and vessels at the present time. The tanks will continue to be used once the oil waste separator operation is resumed at the facility. Since no abandonment or closure of tanks is anticipated, an investigation of tank residuals is not included in the scope of work.

PROPOSED SUBSURFACE INVESTIGATION

A drilling and sampling program to determine the presence of subsurface contamination will be conducted. A total of eight boreholes will be drilled, three of which will be completed as observation wells with slotted PVC and manholes. The tentative locations for the borings are shown on Figure 3.

The observation wells Nos. 1, 2, and 3 are spaced in an equidistant manner along the periphery of the facility to collect data up and down gradient of the shallow water table.

Hole Nos. 2 and 4 will be positioned in the vicinity of the underground API separator and two underground sloop tanks of 4,000 and 6,000 gallon capacity. Borehole #4, specifically, will be placed adjacent to tank No. 35B.

Hole No. 5 will be positioned next to the 4,000 gallon underground clarifier near the central entrance. Due to the hardscape features and unknown location of underground pipes, a second hole for sampling purposes in this area is not planned at this time. If contamination is encountered in Hole No. 5 additional boring locations will be considered to determine the lateral extent of contamination. The use of a metal detector or pipe locator will aid in detecting underground utility structures.

Hole No. 6 will be drilled in the former location of the transformer oil tanks. Two additional boreholes, Nos. 7 and 8, will be drilled near the loading dock and the former solvent press, respectively.

2 underground sloop tanks

1 underground clarifier

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SOIL SAMPLING

The soil borings will be drilled with a hollow stem auger and soil samples will be taken with a Modified California Sampler. We propose to collect the undisturbed soil samples at surface, 1½-, 3-, 6- and 10-foot depths. Soil samples at all depth will be discrete. Duplicate discrete "split" soil samples from each depth will be collected and submitted directly to DHS.

Soil samples will be collected in stainless steel tubes which will be sealed with aluminum foil and plastic end caps. The end caps will be taped onto the tubes. The samples will be immediately stored in an ice chest containing a refrigerant to prevent the possibility of volatilization.

A boring log will be maintained for each soil boring and a report of the drilling program will be prepared by a State registered engineering-geologist or civil engineer. Borings will be logged from cuttings at each depth indicated. An additional logging at the 8 foot depth will be taken between the 6- and 10-foot intervals. Chain of custody documents will be completed for all of the samples.

WATER SAMPLES

The proposed monitoring wells will be drilled to a depth 5 feet below the observed groundwater depth. As the water table is believed to be approximately 10 feet from surface, the wells will be extended to an estimated depth of 15 feet. This will determine whether any contamination has reached the uppermost aquifer. The well casing will consist of 4-inch PVC which will be solid from surface to 10 feet in depth. A perforated casing will extend from this point to the bottom of the well at 15 feet. A 7-foot sand pack will be placed around the slotted section, extending a couple of feet into the solid section above. A 3-foot bentonite seal will be placed above the sandfill to separate it from the remaining 5-foot bentonite-grout fill that will extend to the surface. A locking well box will be installed at the surface.

The grade of sand to be used as a filter pack is Monterey Sand #3, corresponding to standard slot requirements on the perforated PVC casing.

Each well will be developed before sampling. The method for development of the wells will be through pumping. Prior to collection of water samples, the parameters pH, conductivity and temperature will be measured in the field with an Orion Research Model 230 Portable Meter to ensure water stabilization has occurred. Well pumping will continue until these three parameters have stabilized.

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The well headspaces will also be sampled for laboratory analyses. The samples will be transported in airtight vials in a refrigerated container. Duplicate discrete "split" samples will be collected and delivered directly to DHS.

Following completion, development and sampling of the wells and borings, each will be surveyed for location and elevation. The level of accuracy shall be within 0.01 feet. If contamination is detected a vertical survey of all well tops will be conducted to determine the groundwater gradient of the site.

ANALYSIS

An "Organic Vapor Analyzer (OVA)" will be used in the field during drilling to detect volatile organics.

All samples will be analyzed by Kennedy-Jenks-Chilton, Inc., a DHS certified laboratory (No.113) at 657 Howard Street in San Francisco. EPA sample holding times and conditions will be adhered to. The samples will be analyzed within the practical quantifiable limits of the tests undertaken. The following analyses are to be performed:

Location Hole Number	Depth of Sample (feet)	Number of Samples	Lab Analysis EPA Method*
#1	Surface, 1-1/2, 3, 6, 10	5	418.1
			6010
			8020
			8240
			9040
	Water	2	418.1
			602
			8240
			9040
			#2
6010			
8020			
8240			
9040			
Water	2	418.1	
		602	
		8240	
		9040	

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Location Hole Number	Depth of Sample (feet)	Number of Samples	Lab Analysis EPA Method*
#3	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Water	2	418.1 602 8240 9040
#4	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
#5	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
#6	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
#7	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
#8	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420
	Surface, 1-1/2, 3, 6, 10	5	418.1 6010 8020 8240 9040 7420

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Summary of testing methods:

- * EPA Method 418.1 - Total Petroleum Hydrocarbons
- EPA Method 602 - BTX (water)
- EPA Method 8020 - BTX (soil)
- EPA Method 8240 - Volatile Organics
- EPA Method 9040 - pH
- EPA Method 7420 - Organolead
- EPA Method 6010 - CAM Metals

Discrete soil samples will be analyzed for all tests indicated for that boring.

Samples from the clarifier, API separator, and sludge tank will also be taken. These samples will be tested in accordance to EPA Methods 418.1 and 8240.

PROPOSED SCHEDULE

Jaykim Engineers, Inc. proposes to perform the aforementioned subsurface investigation within 6 weeks of our receipt of approval of the revised Work Plan and Safety Procedures. The following preliminary schedule is proposed for submitting a report to your office.

Week

- 1 Mobilization
- 2 Perform drilling & sampling
- 3-5 Obtain laboratory results
- 5-6 Prepare and submit report

SITE FUTURE USE

It is intended that the site will resume operation as a waste oil separation facility as soon as the site assessment for hazardous waste is completed and any required clean-up or mitigation is initiated.

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PROJECT HEALTH AND SAFETY PLAN

The following Health and Safety Plan is site specific for the preliminary site assessment at Ekotek Lube, Inc. in Oakland, California. The suspected exposure toxicants for the site are presented below. There is the potential to encounter other toxicants not listed.

unknown solvents	- tanks
unknown acids	- tanks
various petroleum based products	- underground API Separator, slop tank, transformer oil tanks, oil storage tanks, used and finished motor oils
PCB's	- transformer oil tanks
caustic solution constituents	- caustic soda tanks

I. FACILITY BACKGROUND

Land use history and operations conducted at the site are discussed in the Site Description and Site Characterization sections of the Work Plan.

II. RESPONSIBLE PERSONNEL

Jaykim Engineers, Inc. will be the prime contractor for this investigation. Key personnel responsible for implementation of the Health and Safety Plan are the following individuals:

Primary: Jack K. Bryant (213) 596-2755
Project Manager

Alternate: To be assigned
Project Technician

Site Safety Officer: Jack K. Bryant (213) 596-2755

Project Manager: - Due to the small size of the crew, the project manager will serve the dual role of Site Safety Officer. The project manager is responsible for supervising the investigation and conducting the project in compliance with the Safety Plan. As Site Safety Officer (SSO), that individual is responsible for implementing the Safety Plan and verifying compliance with applicable safety and health requirements.

Project Technician: - Assists project manager in sampling and bore logging operations.

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Driller: - Operates the drill rig for subsurface testing exploration. The driller will be responsible for drilling borings and monitoring wells and backfilling the holes.

Driller's Helper: - Assists the driller in adding and removing auger sections to the drill stem. He is also responsible for steam cleaning the augers for decontamination between each boring and at the end of the work day.

Agency Jurisdiction:

The Department of Health Services, North Coast California Section, will be the primary agency with jurisdiction over the site assessment. The agency's contact for this project is:

Site Project Safety Officer - R. Eugene Boyer (415) 540-3433

III. JOB HAZARD ANALYSIS

Potential chemicals present at the Ekotek Lube site are described above. These chemicals are currently contained in tanks. No field monitoring of suspected contaminants has been conducted at the site to date. It is, therefore, unknown at what concentrations these contaminants, if any, will be encountered. To prevent exposure to potential contaminants, the use of personal protective clothing and equipment will be required by all parties within the restricted work areas. The protective clothing and equipment are discussed in detail under Section VI.

Although some of the chemicals on-site that may be encountered are of an explosive nature, the potential for explosive hazards associated with site activities of drilling and sampling are not considered particularly high. A "No Smoking" policy at all work site locations will be implemented throughout the duration of the investigation.

The physical dangers associated with the drilling and sampling program are typical of those inherent with projects of a similar nature - injury from equipment operations being the prime concern. In order to minimize the occurrence of such hazards, a "buddy system" will be established in all work areas in the event of an emergency. Additionally, the Site Safety Officer will be available on-site throughout the investigation should an emergency arise requiring immediate attention. The Site Safety Officer will conduct a pre-shift inspection of the facility, machinery, equipment, safety devices and equipment.

The Contingency Plan, Section VII, describes procedures for reporting fires and other emergencies, emergency procedures, escape routes, alarm system and evacuation plan. All project personnel will be familiar with the Plan.

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IV. RISK ASSESSMENT SUMMARY

Since there is limited knowledge regarding the concentrations of potential contaminants that may be encountered at the project site, initial precautionary measures to protect from Level C hazards will be implemented. The level of protection provided may be decreased when additional information or site conditions show that decreased protection will not result in hazardous exposure to workers.

As part of safety hazard awareness for employees, all personnel involved in field activities for this project will be informed by Jaykim Engineers of the specific hazards - including toxic exposures, noise and heat stress - associated with the job and work site prior to start up of activities.

Exposure Monitoring

Air - Air monitoring shall be used to identify and quantify airborne levels of hazardous substance. An Organic Vapor Analyser (OVA) shall be available and operational at all times. The Site Safety Officer will take readings, at a minimum, prior to collecting a sample, upon drilling and sampling at another location on site, and when contaminants other than those previously identified are being handled. We will be purchasing an OVA Meter shortly and will submit operating procedures and specifications of the equipment at that time. Calibration and check out of the instrument will be conducted prior to its use at Ecotek Lube. The respirator cartridge to be used by field personnel at the work site screens out volatile organics up to 1,000 ppm and various acids that may be encountered. Volatile organics emitted from the soil during the site assessment as measured with the OVA meter will indicate whether further protective measures need to be instituted on-site. Should ambient air readings at property lines exceed the value of 10 ppm during site activities, the Site Safety Officer may halt operations until volatile organic levels are reduced to an acceptable level. The level of 10 ppm has been selected based on the expected volatile organics (fuels and solvents) and their relative toxicities; this level represents a safe term short exposure.

Noise - Drilling operations will create significant noise, up to 85 dBA. When working in the vicinity of the rig, if noise levels exceed 85 dBA, the Site Safety Officer may require hearing protection be worn. The project site is not located near any sensitive receptors. Noise levels are not anticipated to impact the surrounding environment significantly due to the ambient noise levels generated by vehicle traffic on the Nimitz Freeway southeast of the project site, and railroad traffic to the southwest.

Temperature Extremes - Response to extreme weather conditions, such as wind, lightning, flooding, etc., will dictate that all site activity be halted.

The project schedule will result in field activity being accomplished at the season and time of day that are typified by higher temperature.

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Although the Oakland area has comfortable and mild daytime temperatures near 70°F during much of the summer season, personal protective equipment can significantly increase heat stress. Personnel shall learn to recognize the symptoms of heat stress and take necessary actions when they occur.

To reduce or prevent heat stress, frequent rest cycles to cool down and replace body fluids and salt lost through perspiration may be necessary. Water and electrolyte replacement fluids will be provided for personnel to minimize those hazards. As part of the "buddy system", workers will be instructed to watch for symptoms of heat stress, clammy skin, light headedness, slurred speech, rapid pulse, weakness, confusion, fainting and nausea.

If these actions are noted, the following actions will be taken in the order given:

- take the victim to a cooler uncontaminated area;
- remove protective clothing;
- give water to drink, if conscious; allow to rest.

If symptoms indicating a heat stroke has resulted - staggering gait, hot skin, delirious, mental confusion, convulsions or unconsciousness - take the following actions in the order given:

- take the victim to a cooler uncontaminated area;
- remove protective clothing;
- cool the victim with water, cold compresses and/or rapid fanning;
- transport the victim to a medical facility for further cooling and monitoring of body functions.

Ekotek Lube is located in a relatively unpopulated part of town with no apparent occupied commercial, industrial or residential properties adjacent to the project site. Providing all the monitoring plans are implemented and all hazardous materials encountered are properly contained or disposed, the potential risk of this project to the community and surrounding environment is considered low.

V. STANDARD OPERATING PROCEDURES

Personnel are prohibited from any of the following activities:

- Smoking, eating, drinking, or chewing tobacco or gum while in the restricted work area.
- Ignition of flammable materials in the restricted work areas.
- Contact with potentially contaminated substances. Walking through puddles, pools, mud, etc. will be avoided. Avoid, whenever possible, kneeling on the ground, and do not lean, sit, or place equipment on drums, containers, or on the ground.

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- Resting or storing of instruments on potentially contaminated surfaces.
- Perform any operations in the restricted work area if fewer than two personnel are present and able to communicate clearly.

In addition, the following guidelines shall be observed:

- Team members will be alert at all times to potentially dangerous situations.
- Prevent splashing or dispersion of contaminated materials.
- The number of personnel and equipment in the work area will be minimized consistent with safe practices.
- Site Safety Officer will ensure that personnel are aware of and are reminded to observe conditions at the site, including wind direction, communication by voice or signal from other workers, location of site access points, clear path to vehicles and safety equipment, location of decon line and water.
- The following hand signals will be used for communication if vocal communication is restricted by noise or distance:
 - o Palm of hand slapping chest: Respirator problem or difficulty in breathing.
 - o Grasp shoulder of other worker: Leave site immediately; discuss problem off site.
 - o Raise arms and wave hands overhead: Person signaling needs immediate assistance.
 - o Beckoning with hand: Person needs assistance, not emergency.
 - o Thumbs up: Agreement, indicates person signaling is all right or understands.
 - o Thumbs down: No or negative.
 - o Shrug shoulders: Do not understand.
- Since the major potential hazard other than that from contaminants is due to the heavy equipment used on the sites, personnel will observe standard practices relating to working in the vicinity of heavy equipment, e.g., the following:
 - o Do not step backward from standing position; turn and look before walking.
 - o Except for the operator, do not put hands or other body parts near moving equipment. Long hair must be tied back so as to avoid hazard.

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- o Do not disturb operators or other personnel in work area except for necessary communications.
- o Don protective apparel promptly when indicated by safety officer.
- o Do not step on or near power lines or other supply lines.
- o Do not attempt to lift or roll heavy drums or containers without assistance and clearance.
- o When hearing protection is being worn, be observant to hand signals.
- o Remember the 'buddy system' and alert others to hazards.
- o Assist Site Safety Officer in keeping unauthorized personnel out of any of the work stations.
- o Do not discuss project with any unauthorized personnel on or off the job. Refer any questions to the Project Manager.
- o Do not throw or toss items to personnel requesting them. Carry item to other worker and hand it to him or her.
- o Do not remove any equipment or tools unless cleared with person using them.
- o Be aware of any lines, tools or other items placed so as to present a tripping hazard. Keep items out of path of workers.

First Aid Emergencies

Minor first aid should be treated on the site by the individual selected and trained in advanced first aid. Emergency victims will be removed from the immediate disaster area, stabilized, and transported by ambulance. First aid will be administered by Jack Bryant or alternate. Jaykim Engineers has selected the Paramedics as the first stage emergency response for injury and/or chemical exposures, including heat stress.

Site Security and Public Relations

The Site Safety Officer will be primarily responsible for preventing access by unauthorized persons. The SSO will be assisted in this function by the entire field project team and the crucial nature of site security will be emphasized at the pre-job training.

VI PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

Personal protection while within a 25 foot diameter restricted area of each work site at the facility shall be as described below:

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- a. Half-face air purifying respirator equipped with dual HEPA organic vapor cartridges.
- b. Disposable chemical resistant Tyvek coveralls. These will be disposed of at the end of each working day rather than laundered as indicated in the previously submitted Work Plan. Tyvek was chosen as it is a lightweight but highly effective contamination control fabric suitable in wet or dry conditions. The fabric repels airborne particulates of most types and is resistant to a broad range of chemicals and biological agents.
- c. Gloves, outer chemical resistant to primary chemicals expected to be encountered (solvent, acid and fuel resistant nitrile).
- d. Gloves, inner chemical resistant (vinyl).
- e. Hard hat, goggles.
- f. Steel-toe neoprene boots and vinyl boot covers.

VII. RESPIRATORY PROTECTION PROGRAM

Each individual assigned to the work area will be required to wear a half-mask dual element air purifying respirator. Manufactured by American Optical Respirator Products, the AO 5 Star Series Respirator will be equipped with NIOSH approval TC-23C-587/588 interchangeable cartridges and filters to protect against organic vapors, acid gases, dusts, fumes, mists and pesticides.

A training session on the selection, operation and maintenance of respirators will be conducted prior to field activity. Each participant will be instructed in the following:

- a. Selection of respirator, suitability of respirator for the purpose intended. Respirators will be selected on the basis of hazards to which the worker is exposed.

A discussion on the respirators' capabilities and limitations as well as what may happen if a respirator is not used will be discussed.

- b. Users will be test fitted to ensure proper fit, testing for face-piece to face seal.
 - o Fitting instructions vary from respirator to respirator. The only correct method is to follow the manufacturer's instructions that are provided with the respirator.
 - o Each time the wearer puts a respirator on, a positive and negative pressure test should be conducted to insure a proper fit.

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1. Positive pressure test. Close the exhalation valve and exhale gently into the facepiece. A slight positive pressure should build up inside the facepiece without any outward leakage of air at the seal.
 2. Negative pressure test. Close the inhalation valve(s) and inhale gently. The facepiece should collapse against the face. Hold the breath for 10 seconds. If the facepiece remains collapsed against the face and no inward leakage of air occurs, the fit of the respirator is satisfactory.
- o Conditions which may prevent a good face seal will be inspected. Such conditions may be a growth of beard, sideburns, or the absence of dentures which may cause abnormal facial indentations.
 - o Each time a new respirator is issued, the wearer should wear the respirator in a test environment to demonstrate the effectiveness of the respirator. Either a qualitative test using isoxyl acetate vapors or an irritant smoke, or a quantitative test using sodium chloride or dioctyl phythanlate (DOP) is acceptable. Either method is acceptable; however, the quantitative test actually establishes a protection factor for that individual respirator. This method is useful in that it is an objective measurement rather than a subjective decision of the wearer.

MAINTENANCE AND CLEANING

All respirators will be inspected routinely before and after each use. A respirator that is not used routinely will be inspected at a minimum once per month to assure that it is in satisfactory working condition. Respirator inspection shall include the following five points:

- a. Headbands: Check to see that the headbands still have their elasticity. Inspect for breaks or tears in the material and make sure all clips, fasteners, and adjusters are in place and working properly.
- b. Facepiece: Check facepiece for dirt, cracks, tears, or holes. Inspect the shape of the facepiece for possible distortion that may occur from improper storage. Make sure that rubber is flexible, not stiff. Check the aluminum yoke for cracks.
- c. Inhalation and exhalation valves: check for cracks, tears, distortion, dirt, or build-up of material between valve and valve seat.
- d. Cartridge holders: Check to make sure gaskets are in place; check for cracks and damage to threads.

- e. Cartridge and/or filters: Make sure cartridges and filters are clean. Never try to clean a filter or cartridge by washing it or using compressed air. Inspect the cartridge, particularly the metal sealing band around the bottom, for dents, scratches, or other damage.

Thread cartridges into receptacles carefully. Hand tighten to prevent damage to threads and to insure a good seal against the gaskets. Insert appropriate filters into the appropriate filter cover. Never load a filter into the receptacle. Snap filter covers onto both receptacles or cartridges taking care not to damage filters.

The following conditions are indications that the cartridge or filters have served their useful life and should be replaced.

Cartridges: odor or taste of gases or vapors; eye, nose, or throat irritation.

Filters: excessive breathing resistance upon inhalation.

Under no circumstances should a respirator that fails inspection be used. The respirator should be repaired or replaced.

A record of inspection dates and findings for each respirator will be maintained.

CLEANING

The facepiece (with cartridge removed) should be cleaned and sanitized after every use. A light dish soap solution followed by a blotting action and air drying will suffice. Never exceed 120° F temperature in order to avoid facepiece distortion. After cleaning and maintenance, and when not in use, each respirator should be stored in an air tight bag, such as a plastic refrigerator bag with twist-a-seal.

The respirator must be kept in good condition to function properly. When any part shows evidence of excessive wear or failure, it should be replaced immediately with the proper part. Parts from a different brand or type of respirator will not be used in lieu of manufacturers' parts.

PROTECTIVE CLOTHING TRAINING

The use of protective clothing also requires training. The following subjects will be included in the training program:

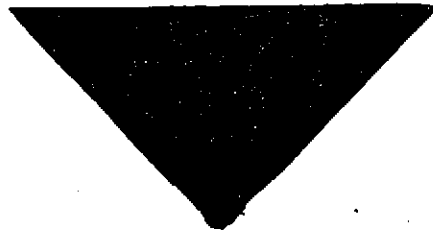
- o Why the particular type of clothing was chosen and what protection it will offer.
- o The proper method of wearing the clothing so that maximum protection will be afforded.
- o The proper method of undressing so that the possibility of personal contamination can be precluded.

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- o Why the particular type of clothing was chosen and what protection it will offer.
- o The proper method of wearing the clothing so that maximum protection will be afforded.
- o The proper method of undressing so that the possibility of personal contamination can be precluded.

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- o The proper method of decontamination and maintenance of the clothing.
- o Each manufacturer normally includes these instructions with the clothing and it will vary from brand to brand.

VIII. MEDICAL SURVEILLANCE

All employees who wear a respirator for 30 days or more per year will be involved in a medical surveillance program and will receive as a minimum, an annual physical check-up.

Medical examinations will be required on a more frequent basis if the examining physician determines that an increased frequency of examination is medically necessary.

An accurate record of the medical surveillance program shall be retained.

IX TRAINING

Prior to start of field work, project personnel will undergo an 8 hour training session to review health hazard recognition, potential chemicals to be encountered, respirator use and fitting, general practices, and first aid. Personnel assigned to this project have considerable experience in hazardous material investigations and are familiar with the procedures described in this Plan.

X SPILL CONTROL EQUIPMENT

Tailings from the drilling activity will be stored in 55 gallon drums and sealed until such time it is determined from lab analysis if contamination is present. All drums will be DOT approved, properly labeled, manifested, and transported by a State approved carrier to an approved hazardous waste disposal site. Non-contaminated material will be hauled off to a local landfill.

Water pumped out of the wells during development will be stored in approved 55 gallon drums. If it is found to be contaminated, the drums will be handled as mentioned above and sent to an approved treatment facility. If the water is found to be non-hazardous, it will be poured into a site catch basin.

Prior to removal off-site all drums containing soil tailings, purged development water, disposable clothing and used cleaning materials will be sealed in the storage drums and stored in a bermed area to prevent any chance of the materials leaking out and contaminating the environment.

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The following types of spill control equipment will be available on-site;

- 1) Sorbent material
- 2) Shovels
- 3) Neutralizing agents

Any spill of liquid will be treated with an appropriate spill clean-up kit (acids, alkali and organics) and stored as mentioned above.

All spill control equipment shall be kept within the immediate area of the current drilling site.

XI DECONTAMINATION PLAN

DECONTAMINATION OF EQUIPMENT

The following types of decontamination equipment will be used to clean drilling augers between drilling holes and before it leaves the site.

- 1) Solvent soaps
- 2) Detergents (for any oil removal)
- 3) Steam cleaning equipment
- 4) Pressure washing equipment

In order to facilitate decontamination of equipment, solvent soap and/or detergents will be used initially to breakdown any materials adhering to the surfaces to be decontaminated. All surfaces will be scrubbed before steam cleaning or pressure washing is used. The drilling augers and sampling equipment will be cleaned before drilling each hole. The area of decontamination is indicated in Figure 3.

The drilling augers will be cleaned and decontaminated in 55 gallon storage drums. The drums will be sealed and stored as mentioned in Section X, Spill Control.

DECONTAMINATION OF PROTECTIVE PERSONAL EQUIPMENT

1.0 General

The decontamination procedure outlined is for field personnel wearing Level C protection equipment including:

- One-piece, chemical-resistant Tyvek suit
- Air purifying half-face respirator
- Hard hat and goggles
- Chemical-resistant boots
- Boot covers

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- Inner and outer gloves

2.0 Procedure for Decontamination

The decontamination line will be situated on the northwest end of the site. A catch basin that is located there will contain any wastewater inadvertently spilled from cleaning operations.

Station 1: Equipment Drop

Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, clipboards, etc.) in drums with plastic liners. Each may be contaminated. Segregation by type at this station will reduce the potential for cross-contamination.

Equipment: drums
plastic liners

Station 2: Boot Cover and Glove Wash

Scrub outer boot covers and gloves with decon solution or detergent/water.

Equipment: drum (20 gallons minimum)
decon solution
or
detergent water
long-handled scrub brushes

Station 3: Boot Cover and Glove Rinse

Rinse off decon solution from Station 2 using a large volume of water. Repeat as many times as necessary.

Equipment: drum (30 gallons minimum)
water
long-handled scrub brushes

Station 4: Respirator Change Station

This station will serve as the respirator drop-off or where the worker will change respirators, if needed, and return to duty.

Station 5: Boot Cover Removal

Remove boot covers and deposit in drum with plastic liner. These may be reused.

Equipment: drum (30 gallons minimum)
plastic liners
bench, chair or stool

Station 6: Outer Glove Removal

Remove outer gloves and deposit in drum with plastic liner, save for reuse.

Equipment: drum (20-30 gallons)
plastic liners

Station 7: Tyvek suit Removal

Remove Tyvek suit. Deposit in 55 gallon drum for disposal.

Equipment: drum (55 gallon drum)
bench, chair or stool

Station 8: Hard hat and Goggle Removal

Remove hard hat and goggles. Do not touch face. Equipment will be reused.

Station 9: Inner Glove Removal

Remove inner gloves and deposit in 55 gallon drum for disposal.

Equipment: drum (55 gallon drum)

Fluids suspected of contamination will be transferred to the drum storage site, and a sample will be analyzed using an appropriate analytical method. If results warrant, fluid will be disposed of in accordance with appropriate regulations.

XIII. CONTINGENCY PLAN

The following site specific plan describe the actions to be implemented by field personnel in response to fire, explosion, or any sudden or non-sudden release of hazardous wastes or hazardous waste constituents to air or soil.

Notification and Summoning Assistance

In the event of any of these emergency situations, site workers should immediately notify the Site Safety Officer and Project Manager who will serve as Emergency Coordinator and Alternate Emergency Coordinate, respectively.

Because no telephone service is available near the site, a cellular telephone will be available during field operations to notify the emergency response team and summon help. The phone will be stationed outside the restricted work area.

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Fire

Dial 911 to call the firefighters in case of emergency. Fire extinguishers will be available with the field crew for use in case of small fires. The first consideration will be personnel safety, and the crew will be instructed not to attempt to handle emergencies where possible injury would result.

Medical Emergency

Dial 911 to summon paramedics for situations requiring medical attention (severe bleeding, shock, heat stroke, major injuries, etc.). Administer first aid and institute emergency actions until paramedics arrive.

The nearest medical facility that is prepared to handle hazardous material related emergencies is Highland Hospital at 1411 East 31st Street in Oakland. The telephone number for this facility is (415) 534-8055. To reach the hospital from the job site, take East 14th Avenue off the Nimitz Freeway (I-880), going east. Figure 4 is the map to the hospital with the route from the site indicated.

The Hazardous Materials Division of the Oakland Fire Department informed us that paramedics summoned to the project site will determine whether Highland Hospital or another facility is warranted for a particular injury.

Medical First Aid

A first aid kit will be available with the work crew to treat minor injuries.

Contamination Incident

An eyewash station will be available for emergency situations where personnel come into contact with contaminants. The eyewash will be of a capacity to flush both eyes simultaneously for a minimum of 15 minutes. Personnel will be instructed in specific decontamination techniques during pre-job training.

Agency Notification

Whenever there is an imminent or actual emergency situation, the Emergency Coordinator or, those designated by the Emergency Coordinator will immediately notify appropriate State and local agencies with designated response roles, if their help is needed.

Primary Agency Contact:

R. Eugene Boyer
Toxic Control Section
Department of Health Services
2151 Berkeley Way, Annex 7
Berkeley, CA 94704
(415) 540-3433

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Identification of Released Material

The Emergency Coordinator will provide immediate information to agency contacts and the Fire Department including a description of the character, source, amount and extent of released materials.

Assessment of Health Effects

Concurrently, the Emergency Coordinator will assess the possible hazards to human health or the environment caused by fire, explosion, or released materials. The assessment will consider the direct and indirect effects of the emergency and agents used to control it.

Prevention of Spread or Recurrence of Emergency

It is the responsibility of the Emergency Coordinator to take all reasonable measures to ensure that the incident does not spread to other areas. He must also maintain surveillance on other areas of the facility to ensure that they are not affected by pressure build-up in pipes, leaks, gas generation in other areas, etc. Appropriate monitoring will be initiated to ensure this.

The Emergency Coordinator shall ensure that, in the affected area(s):

1. No waste that may be incompatible with the released material is treated, stored, or disposed of until clean-up procedures are completed;
2. All emergency equipment is cleaned and fit for its intended use before operations are resumed.

Emergency Equipment of Use

<u>Type</u>	<u>Capabilities</u>
Fire Extinguishers	Class B, C
Water Hose	200 GPM
First Aid Kit	Minor injuries
Telephones	Cellular
Eyewash Fountain	Water to rinse both eyes simultaneously for 15 minutes
Fire Hydrant	Fire Dept. connection

Evacuation Plan

Because of the small size of the site and the crew, oral communications shall be used to minimize the potential for confusion during an emergency.

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The signal used to begin evacuation will be a hand signal:

Grasp Shoulder of other worker.

Evacuation Routes:

- 1) main entrance at west end of property at Alameda Avenue,
- 2) south end of property on Alameda Avenue and
- 3) southeast corner of Alameda Avenue and East 8th Street.

Personnel will assemble on corner of Alameda Avenue and East 8th Street curbside after the evacuation to be accounted for and receive further instructions. No one shall re-enter an evacuated site until the Site Safety Officer has given clearance to return.

Documentation

The Site Safety Officer shall prepare a complete log on any emergency incident including the following information:

- 1) date, time, nature of the incident;
- 2) name and quantity of material involved;
- 3) assessment of actual or potential health or environmental hazards, if applicable;
- 4) extent of injuries, if any;
- 5) action taken, and
- 6) final outcome.

This information shall also be entered in the Incident Report, a document to be submitted to the Department of Health Services within 5 days of the incident.

Security

The site is secured by chain-link fencing. During non-operating hours the gates will be chained and pad locked. No incoming traffic is expected. Keys to the gates are to be provided to the operators.

Warning Signs

Signs will be posted on all gates in both English and Spanish containing the following notices:

CAUTION
Hazardous Waste Storage Area
Unauthorized Persons Keep Out

In case of Emergency Call (415) 788-2830

CUIDADO
Zona de Residuos Peligrosos
Provida la Entrada a Personas
No Autorizadas

Ea caso de Emergenica Llame (415) 788-2830

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Signs will be approximately 20 inches high by 30 inches wide and are visible and legible from a distance of 25 feet. Lettering size is as follows:

Caution/Cuidado - 3 inches high; red on white background
Remaining letters - 2 inches high; black on white background

Water Supply

An adequate supply of water for cleaning equipment, dust control, and sanitation is to be provided on-site. Additionally, the locations of fire hydrants in the vicinity of the site will be displayed on-site.

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FACILITY DESCRIPTION AT 4200 ALAMEDA, OAKLAND
AFTER 1979 MODERNIZATION

EQUIPMENT	USAGE	RESIDUALS
TANK 1	SEMI FINISHED OIL	
TANK 2	SEMI FINISHED OIL	
TANK 3	UNUSED	
TANK 4	UNUSED	
TANK 5	REMOVED	
TANK 6	UNUSED	
TANK 9	SEMI FINISHED OIL	
TANK 10	SEMI FINISHED OIL	
TANK 12	WASTE OIL RECEIVER	
TANK 13	WASTE OIL TREATER	
TANK 13A	CAUSTIC SODA 50%	
TANK 15	WASTE OIL RECEIVER	
TANK 16	WASTE OIL TREATER	
TANK 17	UNUSED	
TANK 17A	REMOVED	
TANK 18	WASTE OIL RECEIVER	
TANK 19	WASTE OIL RECEIVER	
TANK 20	1ST STAGE RUNDOWN	
TANK 20A	ASPHALT FLUX	
TANK 27	WASTE OIL RECEIVER	
TANK 28	WASTE OIL RECEIVER	
TANK 29	WASTE OIL RECEIVER	
TANK 30	WASTE OIL RECEIVER	
TANK 30B	UNUSED	
TANK 30C	UNUSED	

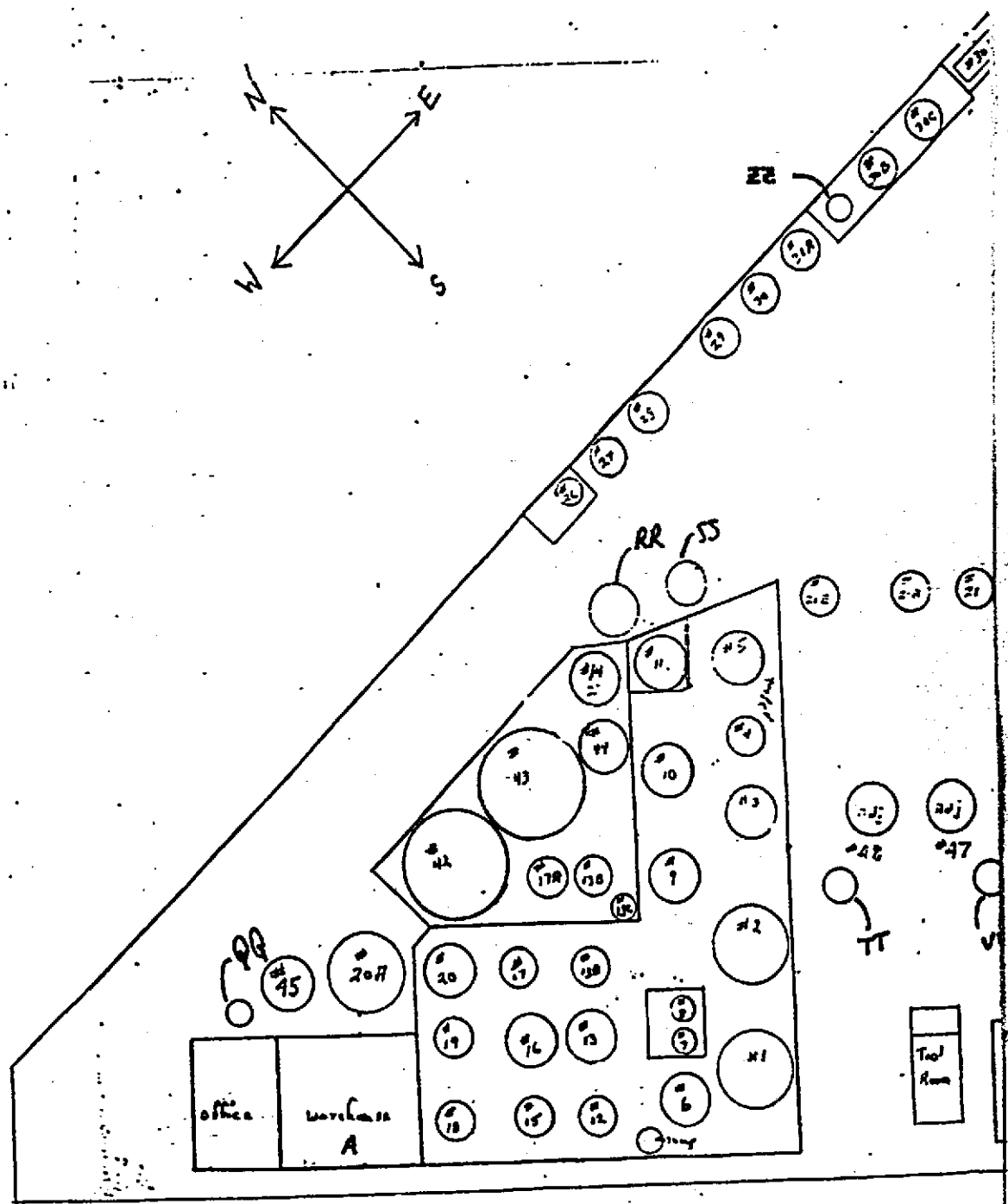
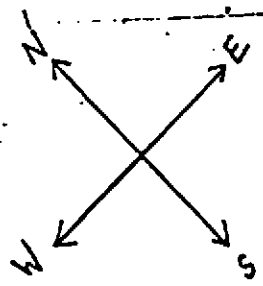
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FACILITY DESCRIPTION AT 4200 ALAMEDA, OAKLAND
AFTER 1979 MODERNIZATION

EQUIPMENT	USAGE	RESIDUALS
TANK 30D	WASTE OIL RECEIVER	
TANK 32	LIGHT DISTILLATE RECEIVER	
TANK 33	LIGHT DISTILLATE RECEIVER	
TANK 34	UNUSED	
TANK 35	UNUSED	
TANK 35A	LIGHT DISTILLATE RECEIVER	
TANK 35B	LIGHT DISTILLATE RECEIVER	
TANK 35C	REMOVED	
TANK 35D	WATER TREATMENT	
TANK 35E	UNUSED	
TANK 35F	WATER TREATMENT	
TANK 35G	LIGHT DISTILLATE RECEIVER	
TANK 42	1ST STAGE RUNDOWN	
TANK 43	1ST STAGE RUNDOWN	
TANK 45	ASPHALT FLUX	
TANK 49	REMOVED	
TANK AA	UNUSED	
TANK BB	REMOVED	
TANK CC	REMOVED	
TANK DD	REMOVED	
WAREHOUSE A	RICE HULL ASH	
WAREHOUSE B	CONTROL ROOM & LAB	
SOLVENT PRESS	REMOVED	
BOILER #1 & #2	REMOVED	

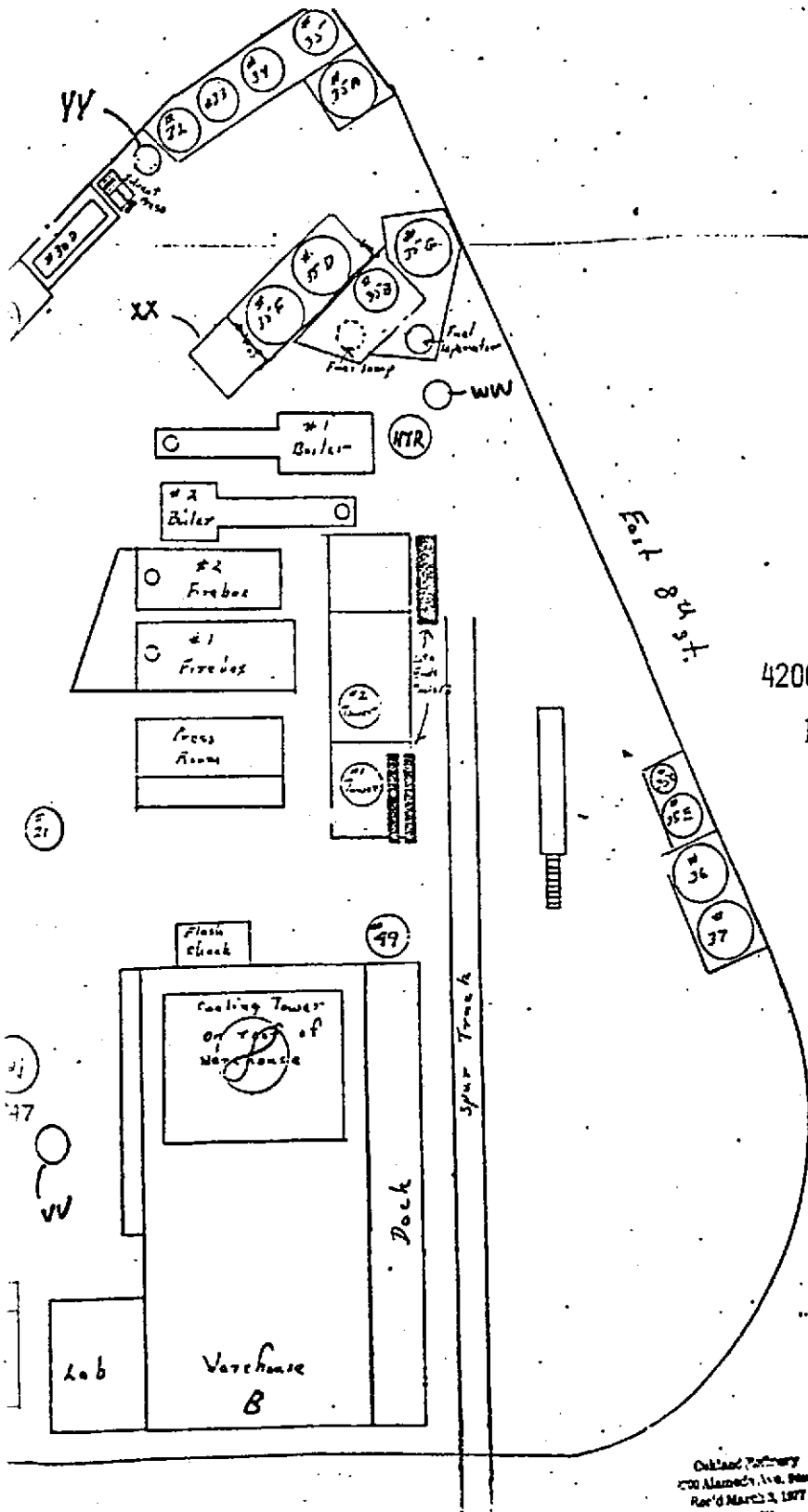
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ROOM FRACTION



EKOTEK-LUBE, INC.
 4200 ALAMEDA AVENUE, OAKLAND, CA
 BEFORE 1979 MODERNIZATION
FIGURE 2

Oakland Port Authority
 4200 Alameda Ave. Oakland
 Rec'd March 2, 1977

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END FRAGMENT

FACILITY DESCRIPTION AT 4200 ALAMEDA, OAKLAND
BEFORE 1979 MODERNIZATION

EQUIPMENT	USAGE	RESIDUALS
TANK 1	FLASHED OIL	
TANK 2	FLASHED OIL	
TANK 3	ROAD OIL MIXER	
TANK 4	WASTE OIL DEHYDRATOR	
TANK 5	WASTE OIL DEHYDRATOR	
TANK 6	FLASHED OIL	
TANK 7	FINISHED OIL	
TANK 8	FINISHED OIL	
TANK 9	WASTE OIL DEHYDRATOR	
TANK 10	WASTE OIL DEHYDRATOR	
TANK 11	ACID TREATER	
TANK 12	WASTE OIL RECEIVER	
TANK 13	FINISHED OIL	
TANK 13A	CAUSTIC SODA 50%	
TANK 13B	FINISHED OIL	
TANK 13C	FINISHED OIL	
TANK 14	ACID TREATER	
TANK 15	WASTE OIL RECEIVER	
TANK 16	FLASHED OIL	
TANK 17	FINISHED OIL	
TANK 17A	FINISHED OIL	
TANK 18	WASTE OIL RECEIVER	
TANK 19	AUTOMATIC TRANSMISSION FLUID	
TANK 20	FLASHED OIL	
TANK 20A	ROAD OIL	

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FACILITY DESCRIPTION AT 4200 ALAMEDA, OAKLAND
BEFORE 1979 MODERNIZATION

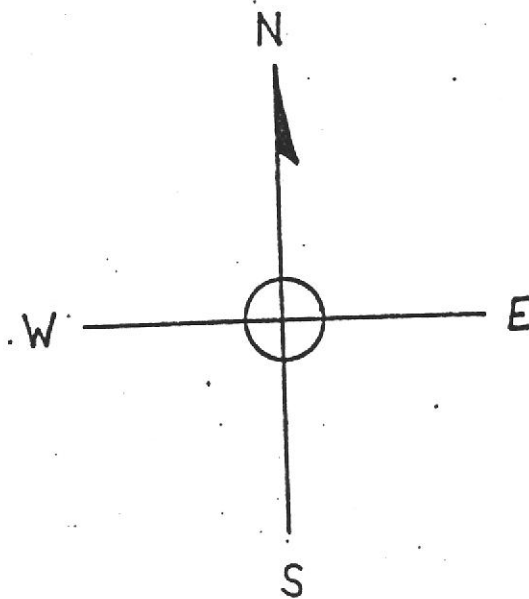
EQUIPMENT	USAGE	RESIDUALS
TANK 21A	TRANSFORMER OIL	
TANK 21B	TRANSFORMER OIL	
TANK 26	SULFURIC ACID	
TANK 27	WASTE OIL RECEIVER	
TANK 28	WASTE OIL RECEIVER	
TANK 29	ANTI-FREEZE	
TANK 30	WASTE OIL RECEIVER	
TANK 30A	WASTE OIL RECEIVER	
TANK 30B	WASTE SOLVENT RECEIVER	
TANK 30C	FINISHED SOLVENT	
TANK 30D	SOLVENT STILL RUNDOWN	
TANK 32	LIGHT DISTILLATE RECEIVER	
TANK 33	DIESEL FUEL	
TANK 34	SOLVENT RECEIVER	
TANK 35	SOLVENT RECEIVER	
TANK 35A	SOLVENT RECEIVER	
TANK 35B	LIGHT DISTILLATE RECEIVER	
TANK 35C	GASOLINE	
TANK 35D	LIGHT DISTILLATE RECEIVER	
TANK 35E	LIGHT DISTILLATE RECEIVER	
TANK 35F	LIGHT DISTILLATE RECEIVER	
TANK 35G	LIGHT DISTILLATE RECEIVER	
TANK 36	TRANSFORMER OIL ACID TREATER	
TANK 37	TRANSFORMER OIL ACID TREATER	
TANK 42	ROAD OIL	

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FACILITY DESCRIPTION AT 4200 ALAMEDA, OAKLAND
BEFORE 1979 MODERNIZATION

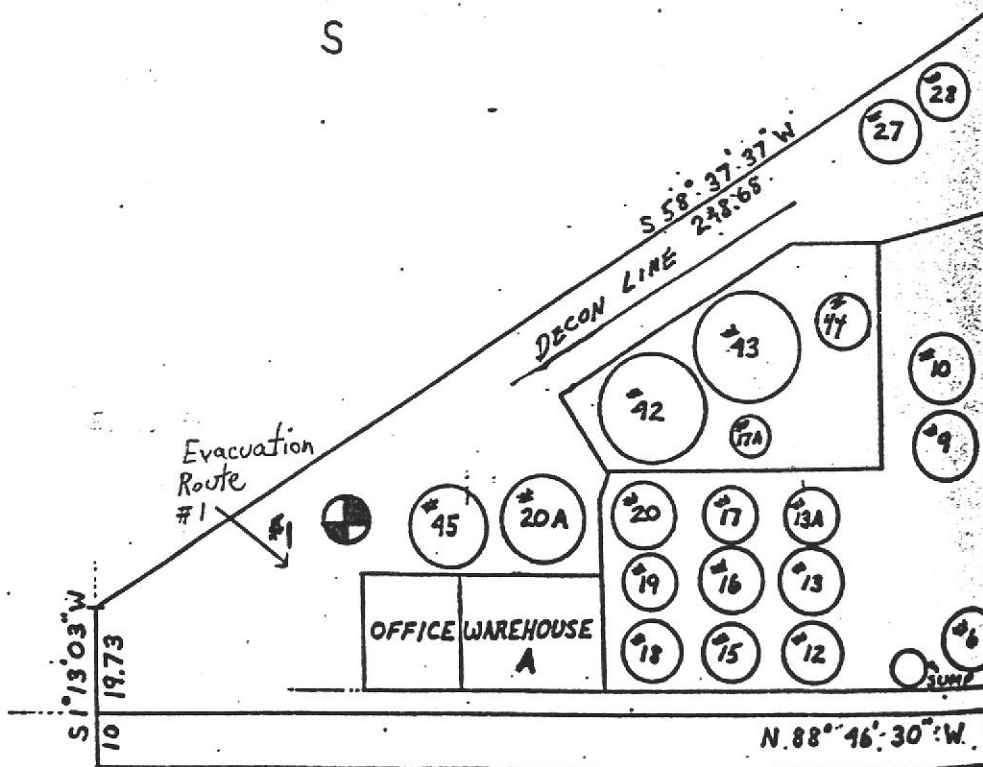
EQUIPMENT	USAGE	RESIDUALS
TANK 43	ROAD OIL	
TANK 44	FLASHED OIL	
TANK 45	ROAD OIL	
TANK 47	CLAY TREATER	
TANK 48	CLAY TREATER	
TANK 49	CLAY SLURRY	
TANK QQ	WASTE DIESEL FUEL	
TANK RR	ACID SLUDGE NEUTRALIZER	
TANK SS	ACID SLUDGE NEUTRALIZER	
TANK TT	PRETREATING OIL	
TANK VV	FINISHED OIL	
TANK WW	SOLVENT STILL	
TANK XX	UNDERGROUND WATER	
TANK YY	SOLVENT & WATER	
TANK ZZ	DIRTY SOLVENT	
WAREHOUSE A	RICE HULL ASH	
WAREHOUSE B	STANDARD UTAH CLAY	

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PROPOSED MONITORING WELL

PROPOSED TEST HOLE



ALAMEDA

EKOTEK-LUBE PA
 4200 ALAMEDA A
 OAKLAND, CALIF

TS 001478

DECON FRAGMENT

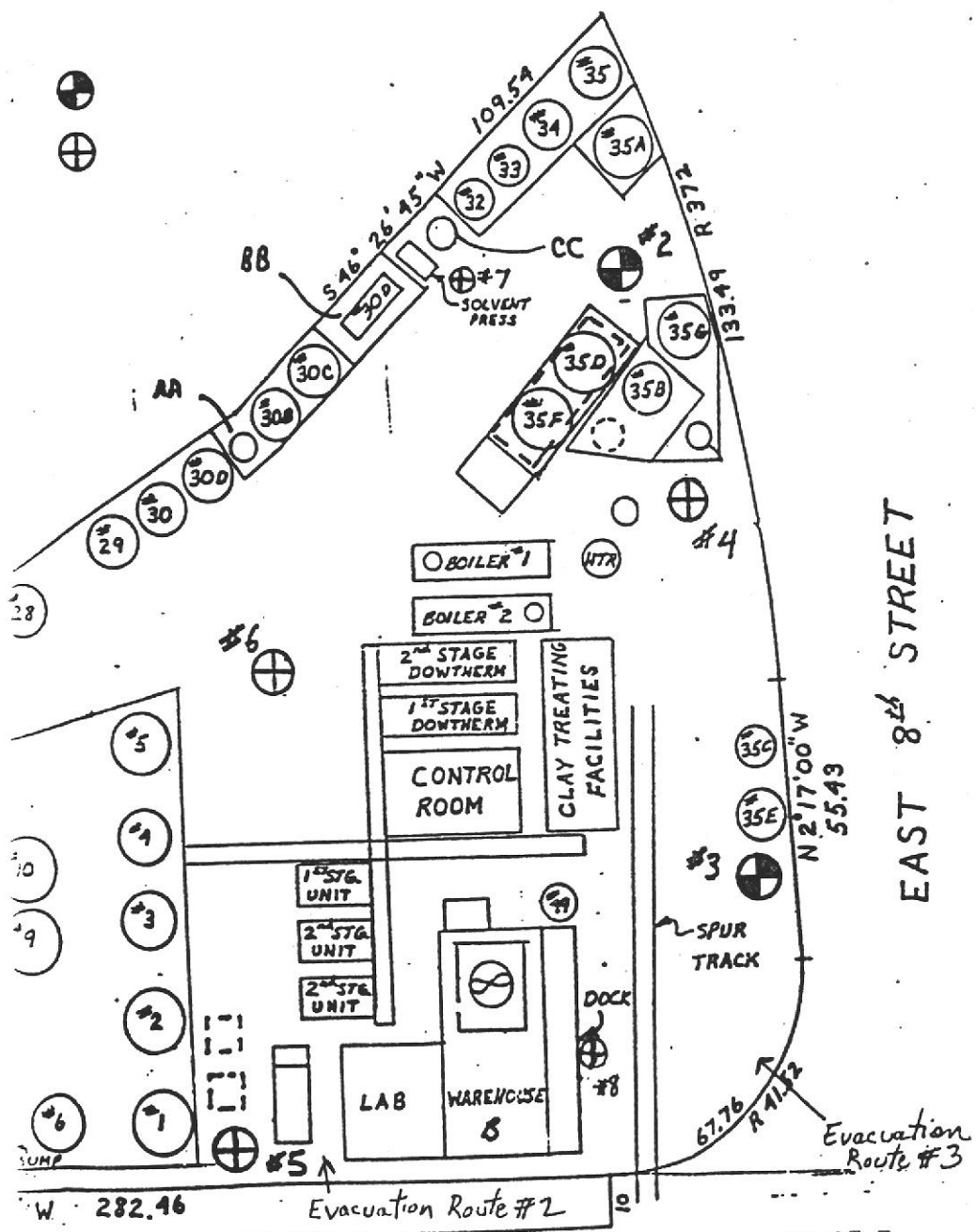


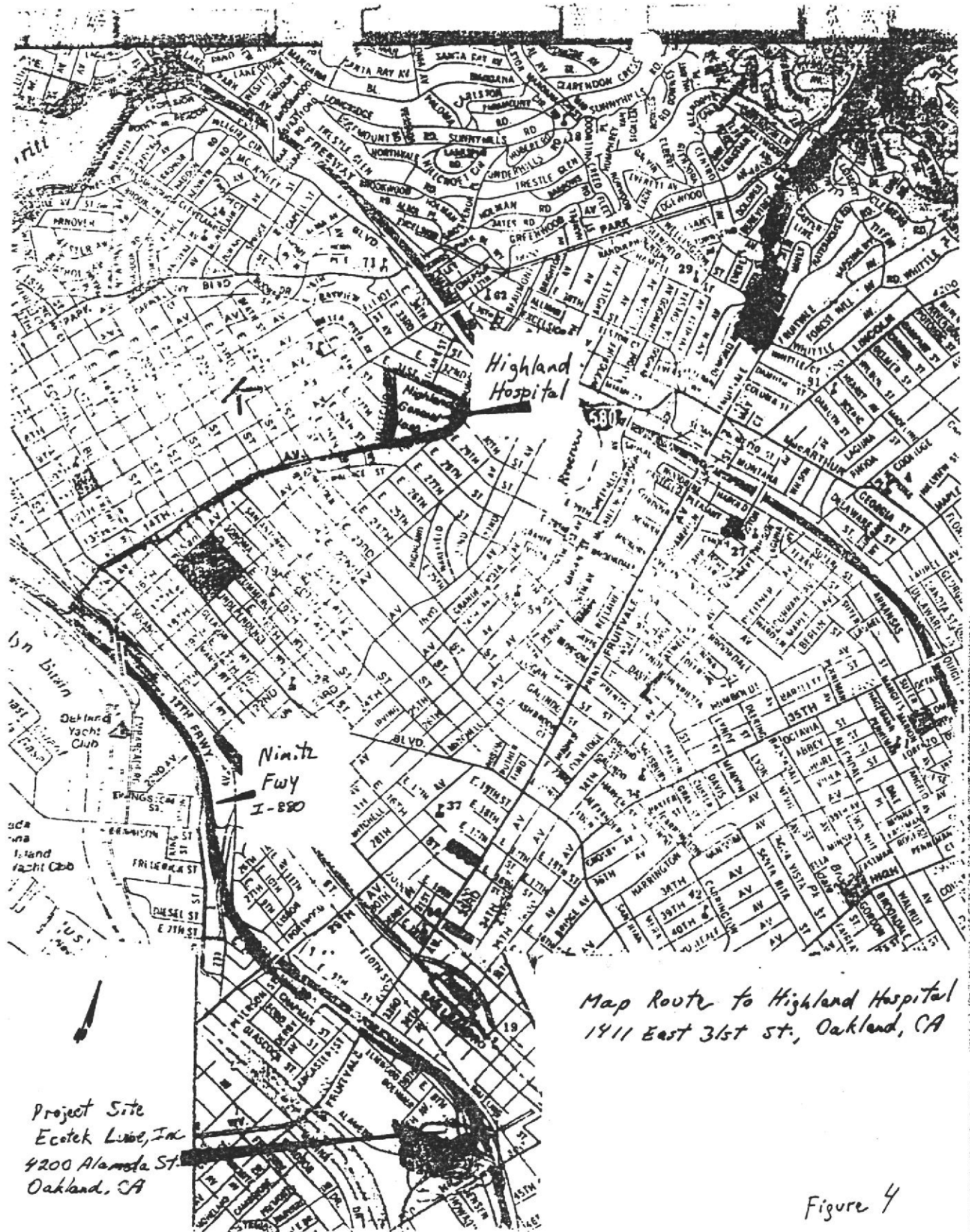
FIGURE 3

SCALE 1"=30'

BE FACILITY
 MEDA AVENUE
 CALIFORNIA

1977-0001S

END FRAGMENT



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Figure 4

POOR QUALITY ORIGINAL