

Industrial Compliance

**HEALTH AND SAFETY PLAN
SOUTHERN PACIFIC TRANSPORTATION COMPANY
BOBO'S JUNKYARD
OAKLAND, CALIFORNIA**

IC Project No. 05465

Prepared for:

Southern Pacific Transportation Co.

One Market Plaza
San Francisco, California 94105

Prepared by:

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March 30, 1992

A Subsidiary of SP Environmental Systems, Inc.



**HEALTH AND SAFETY PLAN
SOUTHERN PACIFIC TRANSPORTATION COMPANY
BOBO'S JUNKYARD
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A Health and Safety Plan for:

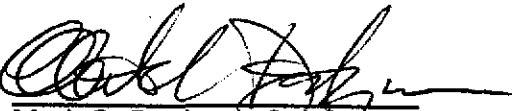
Southern Pacific Transportation Company
One Market Plaza
San Francisco, CA 94105

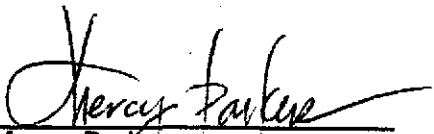
**HEALTH AND SAFETY PLAN
SOUTHERN PACIFIC TRANSPORTATION COMPANY
BOBO'S JUNKYARD
1401 THIRD STREET
OAKLAND, CALIFORNIA**

IC Project No. 05465

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March 23, 1992

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- B Personal Protective Equipment
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1.0 INTRODUCTION

1.1 Site Description

The site is located at 1401 Third Street in Oakland, California (see Figures 1 and 2). There are presently no buildings or other structures located on the site, however a slab foundation from a former structure covers approximately 80% of the 1.84 Acre site. The surrounding land in the vicinity is used for residential and industrial purposes. A Southern Pacific Transportation Company (SPTCo) railyard is located west of the site. A vacant SPTCo property (the 5th and Kirkham Streets Property) is located south of the site. A mixed residential and industrial neighborhood is located north and east of the site.

1.2 Site History

Prior to 1976, the property was owned by Occidental Chemical Company (OCC), and Best Fertilizer, a subsidiary of OCC, occupied the property. SPTCo purchased the property in 1976, and leased it to Mr. John Bobo, who used the property for an automobile dismantling operation (Bobo's Junkyard). A large amount of junkyard debris was abandoned onsite by Mr. Bobo when the property was returned to SPTCo. In October 1990, Industrial Compliance (IC), under the name SP Environmental Systems (SPEVs), started the cleanup of the junkyard debris and conducted a preliminary soil investigation on the property, on behalf of SPTCo. A total of 9 exploratory borings were advanced for the purpose of collecting soil samples for chemical analyses (see Figure 2). The results of this investigation are presented in IC' letter to the California Environmental Protection Agency Department of Toxic Substance Control (DTSC) dated January 10, 1992. Tables of previous results are presented in Appendix A.

Chlorinated pesticides (which include chlordane, toxaphene, lindane, DDT, DDD, DDE, endrin, and dieldrin), and polychlorinated biphenyls (PCBs) were detected in samples collected from the site. Four of the 9 surface samples collected were analyzed as containing pesticide or PCB concentrations greater than the applicable Total Threshold Limit Concentrations (TTLC), indicating that the soil from these areas would be considered a hazardous waste by the State of California (California-regulated waste).

Approximately 450 cubic yards (cy) of debris mixed with soil (debris piles) remain on the site. This debris could not be disposed of at a Class III landfill without first separating the debris from the affected soil. Analytical results for soil samples collected from the debris piles indicate these piles contain oil and grease in concentrations ranging from less than 50 parts per million (ppm) to 20,000 ppm. The mean lead concentration in the debris piles was 2,100 ppm, which is greater than the TTLC of 1,000 ppm. The mean PCB concentration in the waste piles was 228 ppm, which is greater than the TTLC of 50 ppm, and is at a concentration such that it is regulated under the Toxic Substance Control Act (TSCA [40 CFR 761.60]). One of the debris piles contained DDT at a concentration of 3.5 ppm, which is over the TTLC of 1 ppm.

2.0 HEALTH AND SAFETY PLAN OBJECTIVES

This Health and Safety Plan has been developed to provide recommended health and safety procedures for those employees who may be present during the Site Investigation/Remediation. The procedures set forth in this plan are designed to reduce the risk of exposure to chemical substances that may be present in the soil, water, and air and to other hazards associated with any of the activities at the SPTCo site.

The procedures are developed in accordance with the provisions of 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response and DHS "Site Safety Guidance Document for Site Assessment and Site Mitigation Projects" (8/88). These procedures are also in accordance with IC experience in similar field investigations. IC shall be responsible solely for compliance with the provisions of the present Health and Safety plan for IC employees and subcontractors of IC, unless otherwise specified and agreed upon in writing by IC. The recommended health and safety guidelines set forth within this document may be modified as further information is made available through sample analysis and on-site characterization.

3.0. HEALTH AND SAFETY HAZARDS

Table 1 lists chemical compounds that may be encountered during investigation/remediation activities. The compounds listed have been detected in soil and groundwater samples collected during previous field investigations at the site, and they have been chosen to provide a framework for the development of this Health and Safety Plan.

Section 4.0 contains information regarding indicator chemicals that have been determined for the site. Section 5.0 contains the recommended level of protection required by workers for the activity and specific actions levels. When the soil data from further characterization of the site has been evaluated, an addenda to this plan may be submitted.

Table 2 lists potential health and safety hazards that may be encountered as tasks are performed. This list has been compiled based on scheduled activities and potential site conditions.

4.0 INDICATOR CHEMICALS AND ACTION LEVELS

4.1 Background

Separate indicator compounds were selected to develop action levels during excavation activities. Exposures may result from both vapors and dust; however, indicator chemicals were selected for dust exposure only because none of the volatile organic compounds were found to be adequate indicator chemicals for vapor exposure, as described in this section. Total dust and lead have been selected as the indicators of exposure.

4.2 Volatile Organic Compounds

A ranking system for relative hazard was created for surface and subsurface soil chemical concentrations of detected volatile organics. Indices were computed by multiplying the maximum concentration of a particular volatile organic chemical detected in any sample by the vapor pressure of the chemical at 20°C, and dividing by the eight-hour time-weighted average Permissible Exposure Limit (PEL).

These indices account for the quantity of the chemical present (concentration), the potential for vapor phase release (vapor pressure), and the relative toxicity (PEL). Table 4-1 contains the indices for the chemicals detected. None of the volatile organic chemicals were selected as indicator chemicals for vapor phase exposure since all of the index values are low. In addition, the maximum concentration of each volatile organic chemical detected and frequencies of detection are low. As a result, none of the volatile organics are adequate indicator chemical for vapor phase exposure.

4.3 Indicator Chemicals

Total dust was selected as an indicator of exposure because if exposures to total dust do not exceed 10 mg/m³, PELs of chlorinated pesticides and PCBs in the dust will, in general not be exceeded. A conservative total dust exposure is assumed to be less than 10 mg/m³.

Table 4-2 contains the maximum detected soil concentrations for chlorinated pesticides, PCBs, and metals from previous sampling. The PEL for each compound is also listed.

To determine an indicator chemical for particulate exposure, a total dust concentration of 10 mg/m³ is first assumed. The maximum concentration of a chemical in soil is then multiplied by 10 mg/m³. The resulting air concentration is the maximum possible concentration of that chemical in air anywhere on the site. In Table 4-2, this maximum air concentration is used to calculate the percentage of the PEL that the concentration represents. The individual PELs for each chlorinated pesticide and PCB are not exceeded. The sum of the percentages for the constituents does not exceed 1.33%. It is clear that even with conservative estimates, particulate exposure to these non-volatile chemicals detected at the site will not exceed their PELs. This conclusion also holds for the metals. Lead was chosen as the indicator chemical for the site, based on its frequency of detection, and percent contribution to a total PEL.

Table 4-3 summarizes the metals detected at the site and includes the same calculation for percentage of PEL in a 10 mg/m³ exposure as in Table 4-2.

4.4 Particulate Exposure

Past experience with soil investigations has shown that these operations are unlikely to produce dust exposures approaching 10 mg/m³. Air sampling will be performed to reconfirm this observation. Total dust exposure will be monitored using air sampling pumps and filters. Standard industrial hygiene procedures will be utilized. The filters will be analyzed both gravimetrically for dust and by atomic absorption spectrophotometry for lead.

5.0 SITE ACTIVITIES AND ASSOCIATED PERSONAL PROTECTIVE EQUIPMENT

The levels of protection assigned to each activity below represent best estimates of exposure potential and protective equipment needed for that exposure. The Site Safety Officer will revise levels of protection if necessary, based on air monitoring results and on-site assessment of actual exposures. The levels of protection discussed below are the minimum required, and these requirements may vary depending on the location in which the activities occur. The appendix for a specific operable unit will reference any changes to the following levels of protection or any special requirements by specific area.

<u>Physical Site Activity</u>	<u>Location</u>	<u>Personal Protection Required*</u>
Debris Pile Screening	Exclusion Zone	<u>Level C</u> Tyvek coveralls, half-face APR, outer boots and gloves, hard hat, steel-toe boots
Debris Pile Screening	Contaminant Reduction and Support Zones	<u>Level D</u> Hard hat, steel-toe boots, gloves, outer boots, tyvek coveralls (as appropriate)
Soil Sampling	Various Sites	<u>Level D</u> Hard hat, steel-toe boots, gloves, outer boots, tyvek coveralls (as appropriate)
Soil Borings	Various Sites	<u>Level D</u> Hard hat, steel-toe boots, gloves, outer boots, tyvek coveralls (as appropriate)

* See Appendix B for description and discussion of personal protective equipment (PPE)

6.0 KEY REGULATIONS

Key regulations that apply to the proposed RI/FS activities at the SPTCo Roseville Railyard are listed below. All field activities and operations associated with the RI/FS will be in accordance with these regulations.

<u>Government Regulations</u>	<u>Subject</u>
29 CFR 1910.120	Hazardous Waste Site Operations
29 CFR 1904.20	<u>SUBPART C</u> Recordkeeping/Recording, General Safety and Health Provisions
29 CFR 1904	Recordkeeping/Recording, Recording and Reporting Occupational Injuries and Illnesses
29 CFR 1910.1000	OSHA Permissible Exposure Limit
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.151	Medical Services/First Aid Training
29 CFR 1926	Construction Activities

7.0 HEALTH AND SAFETY PERSONNEL

The following health and safety-related responsibilities have been or will be assigned to designated IC personnel for the Investigation/Remediation activities.

7.1 Project Manager

The Project Manager is Mark Dockum, C.E.G., who is responsible for assuring that IC's health and safety responsibilities are carried out in conjunction with this site investigation.

7.2 Project Geologist

Mark Dockum, C.E.G., has been appointed Project Geologist by IC to direct and oversee all services performed by IC or designated subcontractors.

7.3 Site Investigation Leader

Walter Floyd has been appointed Site Investigation Leader by IC and will operate under the supervision of IC's Project Manager to conduct field and related activities. Brigitte Lievens is responsible for coordinating with the Site Safety Officer in carrying out IC health and safety responsibilities on the site.

7.4 Site Safety Officer(s)

The Site Safety Officer appointed by IC will be responsible solely for IC employees and IC subcontractors. Governmental agency representatives and any other personnel on-site are not the responsibility of the IC Site Safety Officer. The Site Safety Officer shall assume the following duties:

- Responsibility for the field implementation, evaluation, and any necessary field modifications of this Health and Safety Plan;

- Responsibility for maintaining adequate supplies of all personal protective equipment, as well as calibrating and maintaining all monitoring instruments;
- Authority to suspend site operations at the site due to any ineffectiveness of or non-conformance with this Health and Safety Plan;
- Responsibility for conducting tailgate safety meeting; and
- Responsible for verifying that communication systems are in place.

Walter Floyd will be the Site Safety Officer. Brigitte Lievens will be the alternate Site Safety Officer.

8.0 MEDICAL MONITORING REQUIREMENTS

The components listed below must be included in the medical monitoring program required for on-site personnel. See Appendix C for a more detailed discussion of Medical Surveillance Program requirements.

- **Medical History and Physical Exam, including:**
 - Medical questionnaire;
 - Completion of medical history with occupational risk factor analysis;
 - Examination by physician; and
 - Evaluation of test results.
- **Pulmonary Function Testing (FEV1, FVC).**
- **EKG (12-lead).**
- **Lab tests, including:**
 - Urinalysis;
 - Blood Chemzyme Analysis (Chem 18);
 - Coronary Risk Screen; and
 - Complete Blood Count with differential.
- **Audiometric testing .**
- **Visual Acuity .**
- **Chest X-ray.**
- **Special medical tests may be performed as indicated by potential exposures.**

9.0 PERSONNEL TRAINING

At a minimum, all applicable employees must meet the training requirements specified in 29 CFR 1910.120 by having been trained in the following areas:

- **Health and Safety Officer and Site Management Responsibilities** - Personnel must understand Health and Safety Officer and Site Management responsibilities and authority.
- **Site-Specific Health and Safety Hazards** - Personnel must be informed of specific hazards related to the site and site operations.
- **Personal Protective Equipment (PPE)** - Personnel must be trained in proper use of personal protective equipment.
- **Safe Work Practices/Engineering Controls** - Personnel must be informed of appropriate work practices and engineering controls that will reduce the risk of exposure to site hazards.
- **Safety Equipment Use** - Personnel must understand the use of monitoring instruments and other safety equipment.
- **Medical Surveillance Program** - Personnel must be informed of requirements for medical surveillance of hazardous waste site employees.
- **Site Control Methods** - Personnel must understand methods used to reduce exposure for on-site and off-site personnel.
- **Decontamination Procedures** - Personnel must be trained in proper decontamination operations and procedures.

- **Emergency Response - Personnel must be trained in proper emergency response operations and procedures.**
- **Confined Space Entry/Special Hazards - Personnel involved in specific hazardous activities, such as confined space entry and drum handling, must receive training in appropriate techniques to employ during such operations.**
- **First Aid/CPR - The Site Safety Officer will be trained in first aid and CPR.**

A more detailed discussion of training requirements is included in Appendix D.

10.0 EXPOSURE MONITORING

Exposure monitoring will be conducted in accordance with OSHA regulation 29 CFR 1910.120(h). Field activities associated with the site may create potentially hazardous conditions, such as the release of hazardous substances into breathing spaces. These substances may be in the form of vapors or dusts that can enter the body through ingestion, inhalation, absorption, and direct contact. Total dust and lead have been selected as indicators of exposure. Exposures will be monitored using air sampling pumps and filters. The filters will be analyzed both gravimetrically for dust and atomic absorption spectrophotometry for lead. Standard industrial hygiene procedures will be utilized.

11.0 DECONTAMINATION

It is expected that the highest level of protection used at the site will be Level C. Based on the level of expected exposure to contaminants, the following decontamination protocol will be used:

- **Station 1: Equipment Drop** - Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
- **Station 2: Outer Garment, Boots, and Gloves Wash and Rinse** - Scrub outer boots, outer gloves, and chemical-resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
- **Station 3: Outer Boot and Glove Removal** - Remove outer boots and gloves. Deposit in container with plastic liner.
- **Station 4: Canister or Mask Change** - If worker leaves exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and worker returns to duty.
- **Station 5: Boots, Gloves and Outer Garment Removal** - Boots, chemical-resistant splash suit, and inner gloves are removed and deposited in separate containers lined with plastic.
- **Station 6: Face Piece Removal** - Face piece is removed. Avoid touching face with fingers. Face piece is deposited on plastic sheet.
- **Station 7: Field Wash** - Hands and face are thoroughly washed. Shower if body contamination is suspected.

Refer to Appendix E for additional details regarding decontamination procedures.

12.0 SITE ACCESS AND CONTROL

This section describes site access and site control procedures that will be followed during on-site activities at Bobo's Junkyard.

12.1 Site Access

Access inside the work zone at the site will be limited to trained authorized personnel. Such personnel include IC employees and designated IC subcontractor personnel. Designated representatives of SPTCo and state and federal agencies will only be admitted with prior authorization from IC. Access into the established exclusion zone or work area, however, will be limited to those authorized personnel wearing appropriate personal protective equipment. In general, the exclusion zone will cover a distance of 25 feet from the work activity. A support zone and a contamination reduction zone will also be set up in the appropriate location based on wind direction and safe operating procedures. The work zones will also be monitored by the Site Safety Officer to ensure personnel do not enter without proper personal protection.

12.2 Site Control

Certain procedures must be followed to ensure suitable site control and access limitation so that those persons who may be unaware of site conditions are not exposed to hazards. All excavations left open and unattended by site personnel will be appropriately barricaded, fenced off, and visibly posted with "Keep Out - Danger" signs, warning flags, or other appropriate signs. All heavy machinery and equipment shall be stored in a secured area upon completion of daily activities. Lastly, all potentially contaminated media, such as cuttings and soils, will be secured in an area to prevent unauthorized tampering.

13.0 EMERGENCY RESPONSE

Emergency response procedures described in this section include notification procedures, responsibilities, accident and injury procedures, and site communications.

13.1 Notification of Site Emergencies

In the event of an emergency, site personnel will signal distress with three blasts from an appropriate horn (vehicle-horn, air horn, etc.). All appropriate authorities will then be immediately notified of the nature and extent of the emergency.

Table 3 contains Emergency Response Telephone Numbers. This table will be maintained at all work sites by the Site Safety Officer and will always be accessible in case of an emergency.

13.2 Responsibilities

The Site Safety Officer will be responsible for responding to all emergencies.

The Site Safety Officer will:

- Notify appropriate individuals, authorities and/or health care facilities of the activities and hazards of the investigation.
- Ensure that the following safety equipment is available at the site: eyewash station, first aid supplies, and fire extinguisher.
- Have working knowledge of all safety equipment available at the site.
- Ensure that a map that details the most direct route to the nearest hospital (Figure 3) is prominently posted with the emergency telephone numbers.

13.3 Accidents and Injuries

In the event of a safety or health emergency at the site, appropriate emergency measures will immediately be taken to assist those who have been injured or exposed and to protect others from hazards. The Site Safety Officer will be immediately notified and will respond according to the seriousness of the injury. Personnel trained in First-Aid will be present during site activities to provide appropriate treatment of injuries or illnesses incurred during operations. The IC Project Manager and the Regional Health & Safety Officer will be immediately informed of any serious injuries.

13.4 Site Communications

Radios or mobile telephones will be available for use during field activities to facilitate communications. Hand signals will be utilized where radios or telephones are impractical. The mobile phones will be present during site activities for emergency response and office communications. Public telephones will be identified prior to the start-up of activities to serve as back-up to the mobile phones or as the primary off-site communication network.

14.0 OVEREXPOSURE REPORTING PROCEDURE

Adherence to this site-specific Health and Safety Plan and any additional facility safety rules and regulations will significantly reduce the likelihood of personnel being exposed to toxic substances above permissible exposure limits. However, in the event an overexposure incident does occur, it is imperative that specific reporting procedures be followed so that appropriate corrective action can be taken by the IC Regional Health and Safety Officer (RHSO) and the IC Project Manager (PM). Upon notification of an exposure incident, the IC RHSO will contact the appropriate technical personnel for recommended medical diagnosis and, if necessary, treatment. The IC PM and the IC RHSO will investigate facility/site conditions to determine: (1) whether and at what levels exposure actually occurred, (2) the cause of such exposure, and (3) the means to prevent the incident from recurring.

An exposure-incident reporting form (Appendix F) has been developed so that consistent and appropriate information is obtained regarding employee overexposures. The form will be completed by the IC RHSO and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

15.0 SPECIAL PRECAUTIONS AND PROCEDURES

The site poses potential exposure risks to both chemical and physical hazards. The chemical risks have been explained in detail in the previous sections. The potential for chemical exposure to hazardous substances is significantly reduced through the use of personal protective clothing, engineering controls, and implementation of safe work practices.

Other potential hazards that are associated with the site activities include working around heavy equipment, noise, and site refuse. Precautionary measures have been established to reduce these risks to a minimum during site activities.

15.1 Heavy Machinery/Equipment

All site employees must remain aware of those site activities that involve the use of heavy equipment and machinery. Respiratory protection and protective eyewear may be worn frequently during site activities. This protective equipment significantly reduces peripheral vision of the wearer. Therefore, it is essential that all employees at the site exercise extreme caution when operating equipment and machinery to avoid physical injury to themselves or others.

15.2 Noise

Activities such as operating heavy equipment may generate noise at potentially hazardous levels. Noise muffs or ear plugs may be required for all site personnel working around heavy equipment. This requirement will be at the discretion of the Site Safety Officer. Disposable, form-fitting plugs are preferred.

15.3 Confined Spaces

Trenching and excavation activities could create confined space hazards. However, it is not anticipated that any workers will be required to enter confined spaces. If it is necessary to enter confined spaces, only specially trained workers will be allowed to enter confined spaces.

15.4 Construction Materials and Site Refuse

All construction materials and site refuse should be contained in appropriate areas or facilities. Site personnel should make certain that fencing, cement, and other materials are not scattered throughout the area of activity and that all trash and scrap materials are disposed of immediately and properly.

15.5 Additional Safety Practices

The following important safety precautions will be enforced during this investigation:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases that probability of hand-to-mouth transfer and ingestion of material is prohibited in any area designated as contaminated.
- Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activity.
- Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.
- No excessive facial hair that interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory protection equipment. The respirator must seal against the face so that the wearer receives air only through the air-purifying cartridges attached to the respirator. Fit-testing shall be performed prior to respirator use to ensure that a proper seal is obtained by the wearer.
- Contact with potentially contaminated surfaces shall be avoided whenever possible. One should not walk through puddles, mud, or other discolored surfaces, kneel on ground, or lean, sit, or place equipment on drums, containers, vehicles, or the ground.

- **Medicine and alcohol can potentiate the effect from exposure to certain compounds. Alcoholic beverages shall not be consumed by personnel involved in the project during working hours. Prescribed drugs should not be utilized by any personnel involved with the project unless they have obtained specific guidance from their personal physician concerning their potential exposure to low levels of hazardous chemicals while on this site.**
- **Personnel and equipment in the work areas should be minimized, consistent with effective site operations.**
- **Work areas for various operational activities should be established.**
- **Procedures for leaving the work area must be planned and implemented prior to going to the site. Work areas and decontamination procedures must be established on the basis of prevailing site conditions.**
- **Respirators will be issued for the exclusive use of one worker and will be cleaned and disinfected after each use by the worker.**
- **Safety gloves and boots shall be taped to the disposable, chemical-protective suits as necessary.**
- **All unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.**
- **Noise muffs or ear plugs may be required for all site personnel working around heavy equipment. This requirement will be at the discretion of the Site Safety Officer. Disposable, form-fitting plugs are preferred.**
- **Cartridges for air-purifying respirators in use will be changed daily at a minimum, or when breakthrough occurs, whichever comes first.**
- **Hard hats and boots will be worn at all times; boots will be steel-toed.**

- All activities in the exclusion zone will be conducted using the "Buddy System". The buddy is another worker fully dressed in the appropriate PPE, who can perform the following activities:

- Provide his/her partner with assistance.
- Observe his/her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his/her partner's PPE.
- Notify others if emergency help is needed.

16.0 PROCEDURES FOR PROTECTING THIRD PARTIES

IC will be responsible for monitoring the health and safety practices of IC employees and any subcontractors to IC. All personnel entering the work site area must follow the site access and site control procedures as stated in Section 12.

IC employs subcontractors that are trained and competent to perform the scheduled tasks. IC subcontractors are required to provide documentation (such as 40-hour certificates, first-aid/CPR, and respirator annual certification) and other applicable regulatory compliance documents.

16.1 Public and Other Personnel

IC will perform periodic and/or routine monitoring during site operations to evaluate the concentration of compounds in the breathing zone. IC will take appropriate corrective measures as necessary to reduce the risk of chemical hazard to off-site personnel, such as spraying water to control dust.

Site control procedures, as discussed in this document, have been established to protect those persons unaware of on-site hazards.

TABLE 1
Potential Site Compounds and Associated Exposure Information
Southern Pacific Transportation Company
Health and Safety Plan
Bobo's Junkyard
Oakland, California
IC Project No. 05465

Compound	CAS	TVL/PEL	Characteristics	Route of Exposure	Symptoms of Overexposure	Target Organs
Cadmium dust	7440-43-9	0.2 mg/m ³ 0.6 mg/m ³ (ceiling)	Appearance and odor vary depending upon specific compound	Inhalation Ingestion	Pulmonary edema, dyspnea, cough, tight chest, substernal pain, headache, chills, muscle aches, nausea, diarrhea, anoxemia, emphysema, proteinuria, anemia, carcinogenic	Respiratory system, kidneys, prostate, blood
Chlordane	57-74-9	0.5 mg/m ³	colorless liquid with pungent chlorine-like odor	Inhalation Absorption Ingestion Contact	Blurred vision; confusion, coughing, abdominal pain, vomit, diarrhea	CNS, eyes, lungs, liver, kidneys, skin
Chromium (II) and (III)		0.5 mg/m ³	Appearance and odor vary depending upon specific compound	Ingestion Contact	Sensitization, dermatitis	Skin
Copper and Copper Compounds	7440-50-8	1.0 mg/m ³	Odorless solids which are finely divided into particulates dispersed in air	Inhalation Ingestion Contact	Metal fume fever, chills, fever, dry throat, cough, weakness, eye and respiratory system irritant, muscle aches, discoloration of skin or hair, metallic or sweet taste in mouth	Respiratory system, skin, liver, increased risk with Wilson's disease, kidneys
DDD	72-54-8	1 mg/m ³	Crystalline white solid	Ingestion	Nausea, vomiting, paresthesias, sore throat, fatigue	CNS, kidneys, liver, skin
DDE	72-55-9	No standards set	Solid	Ingestion	Nausea, vomiting, paresthesias, sore throat, fatigue	CNS, kidneys, liver, skin
DDT	50-29-3	1 mg/m ³	colorless crystals or white powder, weak chemical odor	Inhalation Absorption Ingestion Contact	Paresthesia of tongue, lips and face, dizziness, confusion; headache, Irritation of eyes and skin, cancer	CNS, kidneys, liver, skin
1,1-Dichloroethene (Vinylidene Chloride)	75-35-4	1 ppm	Colorless liquid	Inhalation Ingestion Contact	Eye, skin, and respiratory irritation, CNS depression, liver damage. Has caused cancer in animals during experimental studies	Brain, CNS, eyes, lymphatic system

TABLE 1 (Continued, Page 2)
 Potential Site Compounds and Associated Exposure Information
 Southern Pacific Transportation Company
 Health and Safety Plan
 Bobo's Junkyard
 Oakland, California
 IC Project No. 05465

Compound	CAS	TVL/PEL	Characteristics	Route of Exposure	Symptoms of Overexposure	Target Organs
1,2-Dichloroethene	540-59-0	200 ppm	Clear, colorless liquid with an ether-like slightly acrid odor like chloroform	Inhalation Ingestion Contact	Eye and skin irritation, CNS depression, weakness, vomiting, cramps	CNS, eyes, skin, respiratory system
Dieldrin	60-57-1	0.25 mg/m ³	white crystals to pale tan flakes with an odorless to mild chemical odor	Inhalation Absorption Ingestion Contact	Headache, dizziness, nausea, vomiting, malaise, sweating, myoclonic limbjerks, tonic convulsions, coma, cancer	CNS, liver, kidneys, skin
Endrin	72-20-8	0.1 mg/m ³	white to tan solid with mild chemical odor	Inhalation Absorption Ingestion Contact	Epileptiform convulsions, stupor, headache, dizziness, abdominal discomfort, nausea, vomiting, insomnia, confusion, lethargy, weakness	CNS, liver
Lead, Inorganic Fumes and Dust	7439-92-1	0.05 mg/m ³	Appearance and odor vary depending upon specific compounds	Inhalation Ingestion Contact	Anemia, CNS depression. Symptoms of lead intoxication include general weakness, insomnia, anorexia, peripheral neuropathy	Gastrointestinal tract, kidneys, reproductive system
Lindane	58-89-9	0.5 mg/m ³	colorless, odorless, solid	Inhalation Absorption Ingestion Contact	Irritation of eyes, nose, and throat, headache, nausea, skin irritation, respiratory problems, cyanosis, aplastic anemia	Eyes, CNS, blood, liver, kidneys, skin
Mercury, and inorganic compounds	7439-97-6	0.05 mg/m ³	Silvery, mobile odorless liquid	Inhalation Absorption Contact	Coughing, dyspnea, bronchial pneumonia, tremor, insomnia, irritability, indecision, headache, fatigue, weakness, stomatitis, salivation, gastrointestinal, anorexia, weight loss, proteinuria, eye and skin irritation	Skin, respiratory system, CNS, kidneys, eyes
Nickel, soluble compounds	7440-02-0	0.1 mg/m ³	Appearance and odor vary depending upon specific compounds	Inhalation Ingestion Contact	Lung and skin irritation and allergic skin reactions, has caused lung cancer in animals during experimental studies	Lungs, nasal cavities, skin
Polychlorinated Biphenyls	1336-36-3	0.5 mg/m ³	Light, straw-colored liquids with aromatic odors	Inhalation Absorption Ingestion Contact	Chloracne, irritation of eyes, nose and throat, liver damage, edema, jaundice, vomiting, anorexia, nausea, abdominal pain, fatigue, carcinogenic	Skin, eyes, liver

TABLE 1 (Continued, Page 3)
 Potential Site Compounds and Associated Exposure Information
 Southern Pacific Transportation Company
 Health and Safety Plan
 Bobo's Junkyard
 Oakland, California
 IC Project No. 05465

Compound	CAS	TVL/PEL	Characteristics	Route of Exposure	Symptoms of Overexposure	Target Organs
Toxaphene	8001-35-2	0.5 mg/m ³	Yellow, waxy solid with chlorine-like odor	Inhalation contact	Salivation, convulsions, muscle, tremore, restlessness, hyper-excitability	CNS, liver, kidney, lungs
Trichloroethane	79-01-6	50 ppm 200 ppm (ceiling)	Colorless liquid unless dyed; sweet odor similar to chloroform	Inhalation Ingestion Contact	Alteration in heartbeat rhythm, CNS depression, eye irritation, nausea, vomiting. Has caused cancer in animals during experimental studies.	CNS, heart, kidneys, liver, respiratory system
Xylene	95-47-6	100 ppm 150 ppm STEL	Colorless liquid with aromatic odors	Inhalation Absorption Ingestion Contact	Dizziness, excitement, drowsiness, incoordination, staggering gait, irritation of eyes, nose and throat, corneal vacuolization, anorexia, nausea, vomiting, abdominal pain, dermatitis	C N S . e y e s . gastrointestinal tract, blood, liver, kidney, skin

TABLE 2
Health and Safety Hazards
Southern Pacific Transportation Company
Health and Safety Plan
Bobo's Junkyard
Oakland, California
IC Project No. 05465

Hazard	Description	Location	Procedure Used to Monitor/Reduce Hazard
Heavy Equipment	Drill rigs, machinery	Throughout Site	Personnel maintain eye contact with operators; hard hats, safety shoes, and eye and ear protection worn (as appropriate) during equipment operation.
Noise	Heavy equipment operation	To be determined at time of activity	Initial measurement of sound levels to determine if hazardous noise levels are present. Appropriate hearing protection.
Confined Space	Trenching or excavation	To be determined at time of activity	Site Safety Officer will determine if a confined space is present and must be entered. Explosimeter and O ₂ monitor will be used if appropriate.
Overhead/ Underground Utilities	Electrical, sewer, gas, water	To be determined at time of activity	Locate existing utilities prior to site operations. Design installation of additional utilities so that they do not interfere with site operations.
Refuse and Materials	Construction refuse and construction materials	Throughout site	Maintain clean work areas; dispose of refuse immediately; do not block access routes with materials.
Heat Producing/ Electrical Equipment	Generators/drill rigs	Throughout site	Operate equipment away from vegetation and other materials that may ignite. Maintain fire-fighting equipment in the vicinity of operating equipment.
Heat Stress/ Cold Exposure	Personnel working under extreme temperature are subject to adverse temperature-related effects	Throughout site	Employ buddy system. Each worker is responsible for visually monitoring his/her partner for signs of heat stress/cold exposure. Site safety personnel will also monitor worker's conditions and establish work/rest regimens and recommend appropriate diet.
Chemical Exposure	Personnel can be exposed to various compounds associated with the site	Throughout site	Follow guidelines in Safety Plan. Be familiar with signs and symptoms of exposure and first aid procedures. Report suspected over-exposure to supervisor immediately.

TABLE 3
Emergency Response Telephone Numbers
Southern Pacific Transportation Company
Health and Safety Plan
Bobo's Junkyard
Oakland, California
IC Project No. 05465

IC Health and Safety Officers	
Walter Floyd - Health & Safety Officer	(916) 369-8971
Mercy Parker - Regional Health & Safety Officer	(916) 369-8971
Hospital	
Kaiser Hospital 280 West MacArthur Boulevard Oakland, California	
24-hour Emergency	(510) 596-1000
California Department of Health Services	
Hazardous Waste Hotline	1 (800) 258-6942
Police Department	<i>Emergency: Dial 911</i>
Fire Department	<i>Emergency: Dial 911</i>
SPTCo Utilities	
Dale Reynolds	(510) 891-7428

Table 4.1
Index Calculations - Volatile Organic Compounds
Southern Pacific Transportation Company
Bobo's Junkyard
Oakland, California
IC Project No. 05465

Chemical	Maximum Concentration (mg/kg)	Vapor Pressure (mm Hg, 20°C)	Permissible Exposure Limit (ppm)	Index ^a
Dichloroethene	0.023	265	200	0.030
Trichloroethene	0.017	57.8	100	0.010
Xylenes	0.0081	6.5	100	0.001

^a Index = maximum concentration times the vapor pressure divided by the PEL

Table 4.2
Chlorinated Pesticide and PCB Exposures at 10 mg/m³ of Dust
Southern Pacific Transportation Company
Bobo's Junkyard
Oakland, California
IC Project No. 05465

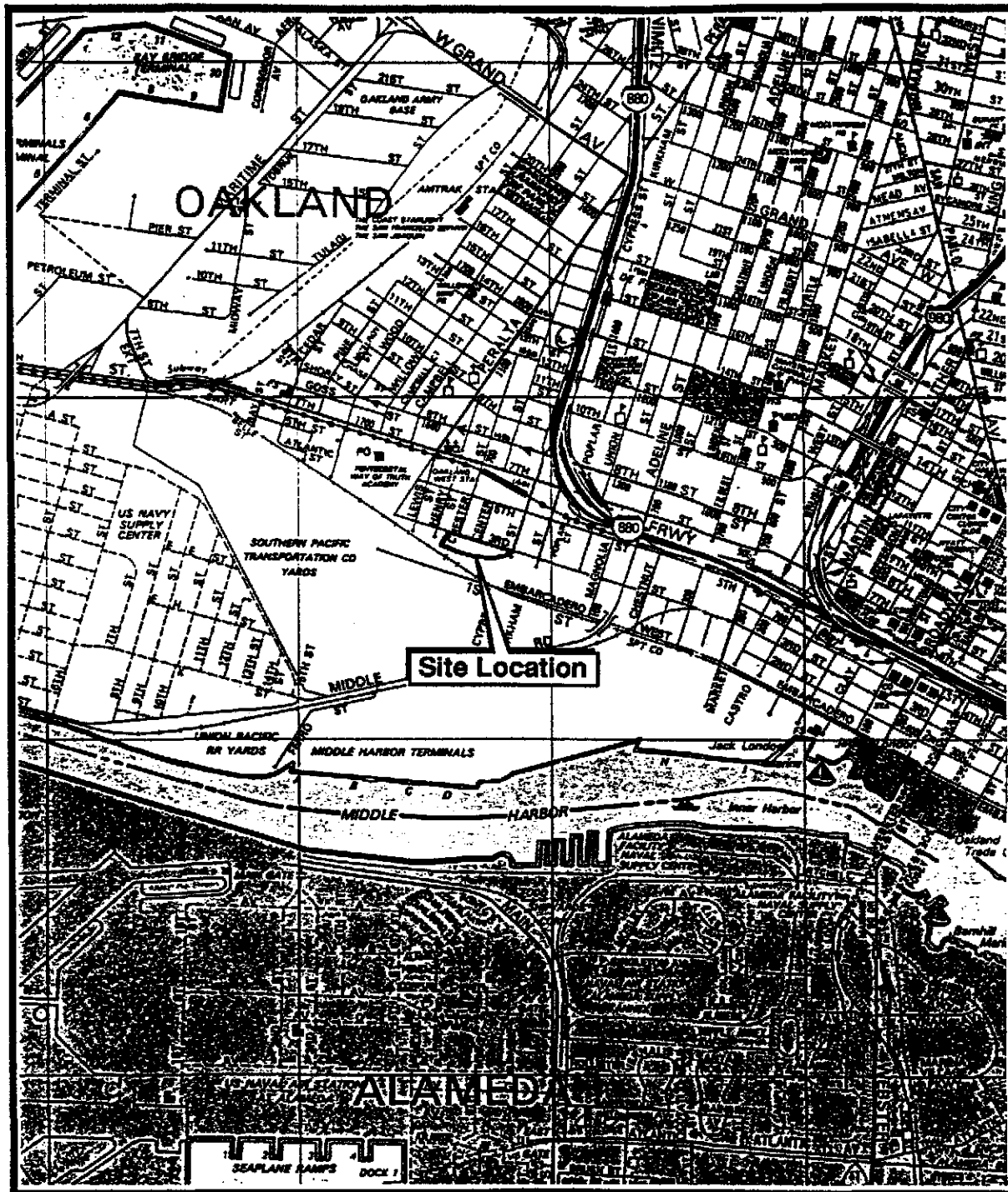
Compound	Maximum Concentration (mg/kg)	Permissible Exposure Limit (mg/m ³)	% PEL @ ^a 10 mg/m ³
Chlordane	66	0.5	0.132
Toxaphene	42	0.5	0.084
Lindane	0.26	0.5	0.001
DDT	5.3	1.0	0.005
Endrin	0.22	0.1	0.002
Dieldrin	1.5	0.25	0.006
PCB	550	0.5	1.100
Total			1.330

^a Assume dust concentration equals soil concentration.

Table 4-3
Metal Exposures at 10 mg/m³ of Dust
Southern Pacific Transportation Company
Bobo's Junkyard
Oakland, California
IC Project No. 05465

Compound	Maximum Concentration (mg/kg)	Permissible Exposure Limit (mg/m ³)	%PEL @ ^a 10 mg/m ³
Cadmium	17.7	0.2	0.089
Chromium	187	0.5	0.374
Copper	8,570	1.0	8.57
Lead	3,480	0.05	69.6
Mercury	17.3	0.05	0.346
Nickel	715	1.0	0.715
Total			79.7

^a The calculation of the % PEL assumes dust concentration equals soil concentration.



Approx. Scale in Miles
 0 1/2

Reference:
 Thomas Brothers map of California
 Page 157



Industrial Compliance

A Subsidiary of SP
 Environmental Systems, Inc.



PROJECT NO: 05465

DATE: 03/03/92

DRAWN BY: PD

CHECKED BY: WF

**SITE LOCATION MAP
 SOUTHERN PACIFIC TRANSPORTATION CO.
 BOBO'S JUNKYARD
 OAKLAND, CALIFORNIA**

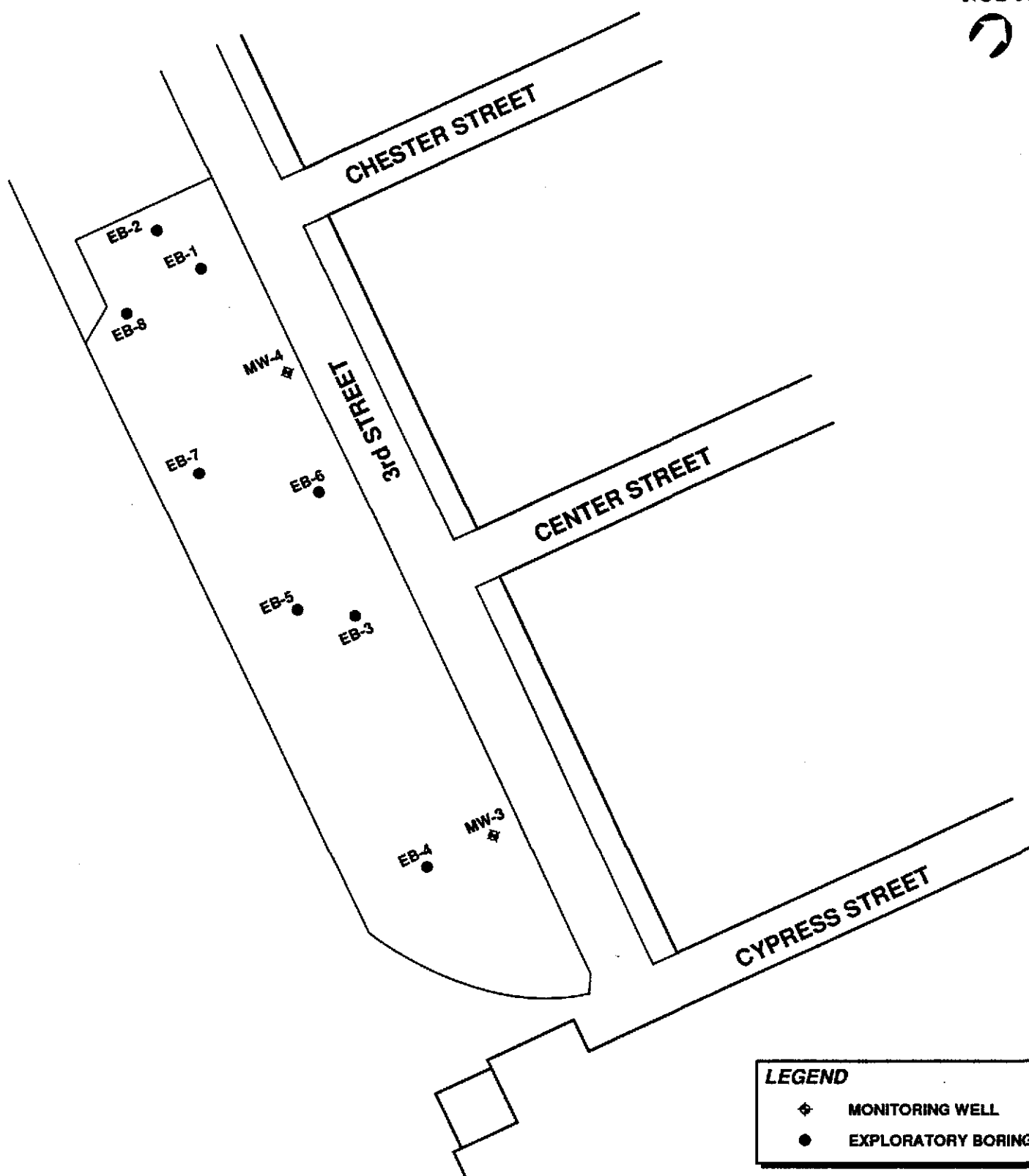
FIGURE:

1

SCALE:

as shown

North



LEGEND

- ◆ MONITORING WELL
- EXPLORATORY BORING

Approx. Scale in Feet
 0 ————— 100'



Industrial Compliance
 A Subsidiary of SP
 Environmental Systems, Inc.



PROJECT NO: 05465	DATE: 03/10/92
DRAWN BY: PD	CHECKED BY: WF

**LOCATION OF MONITORING WELLS
 AND EXPLORATORY BORINGS
 AT "BOBO'S JUNKYARD"
 SOUTHERN PACIFIC TRANSPORTATION CO.
 OAKLAND, CALIFORNIA**

FIGURE:
 2

SCALE:
 as shown



Approx. Scale in Miles
 0 .50

Reference:
 Oakland East Bay Cities
 Rand McNally



Industrial Compliance
 A Subsidiary of SP
 Environmental Systems, Inc.

**ROUTE TO HOSPITAL
 SOUTHERN PACIFIC TRANSPORTATION CO.
 BOBO'S JUNKYARD
 OAKLAND, CALIFORNIA**

FIGURE:
 3
SCALE:
 as shown

PROJECT NO: 05465	DATE: 03/10/92
DRAWN BY: PD	CHECKED BY: WF

APPENDIX A
TABLES OF PAST RESULTS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
BOBO'S JUNKYARD
OAKLAND, CALIFORNIA
IC PROJECT NO. 05465

Table 1
Summary of TPH and VOC Analyses
Southern Pacific Transportation Company
Exploratory Borings - Bobo's Junkyard
Oakland, California
SPEvS Project No. 05465

Boring ^a Number	Depth ^b	Total Petroleum Hydrocarbons (mg/kg)			VOCs (mg/kg) ^f		
		TPH-G ^c	TPH-D ^d	O & G ^e	DCE	TCE	Xylene
EB-1	Surface	NA	<10	<50	NA	NA	NA
	4	<10	<10	160	0.023	0.017	<.005
EB-2	Surface	NA	<10	1400	NA	NA	NA
	4	<10	<10	<50	<0.005	<0.005	0.0081
EB-3	Surface	NA	290	3300	NA	NA	NA
	4	<10	<10	<50	<0.005	<0.005	<0.005
EB-4	Surface	NA	15	1300	NA	NA	NA
	4	<10	<10	64	<0.005	<0.005	<0.005
EB-5	Surface	NA	270	7200	NA	NA	NA
	4	<10	56	<50	<0.025	<0.025	<0.005
EB-6	Surface	NA	220	1000	NA	NA	NA
	4	<10	<10	<50	<0.005	<0.005	<0.005
EB-7	1.5'	NA	<10	170	NA	NA	NA
	4	<10	<10	96	<0.005	<0.005	<0.005
EB-8	Surface	NA	<10	<50	NA	NA	NA
	4	<10	<10	4000	<0.005	<0.005	<0.005
MW-3	Surface	NA	210	<50	NA	NA	NA
	4	<10	<10	<50	<0.005	<0.005	<0.005
	8	<10	<10	7400	<0.005	<0.005	<0.005

- a See Figure 2 for approximate boring locations.
- b Depth in feet below ground surface.
- c Total Petroleum Hydrocarbons as gasoline analyzed by EPA Method 8015 Modified.
- d Total Petroleum Hydrocarbons as diesel analyzed by EPA Method 8015 Modified.
- e Oil and Grease analyzed by EPA Method 413.1.

- f Volatile organic compounds analyzed by EPA Method 8240.
- DCE Dichloroethylene
- TCE Trichloroethylene
- mg/kg miligram per kilogram
- < Indicates the analyte was not detected at or above the method detection limits as noted.

Table 2
Summary of Metal Analyses
Southern Pacific Transportation Company
Exploratory Borings - Bobo's Junkyard
Oakland, California
IC Project No. 05465

Boring ^a Number	Metals ^b (mg/kg)							
	Depth ^c	Cd	Cr	Cu	Pb	Hg	Ni	Zn
EB-1	Surface	<0.5	27.9	40.3	250	0.84	18.7	112
	4	<0.5	28.4	14.8	28.5	<0.1	14.8	33.9
EB-2	Surface	13.2	44.4	1,140	740	0.84	39	939
	4	<0.5	33.5	27.5	7.6	0.59	23.4	36.5
EB-3	Surface	3.0	69.9	3,440	953	0.31	68.8	636
	4	<0.5	29.6	46.1	<5	<0.1	17.2	22.9
EB-4	Surface	1.8	30.7	175	378	0.44	21.9	259
	4	<0.5	27.3	44.4	<5	<0.1	16.6	29.9
EB-5	Surface	<0.5	39.2	54.6	80.5	0.17	37.7	86.2
	4	<0.5	28.4	21	<5	<0.1	17.4	21.1
EB-6	Surface	1.3	42.9	194	228	1.9	36.1	307
	4	<0.5	23.1	10.2	<5	<0.1	14	14
EB-7	1.5	0.8	42	70.1	340	0.48	11.4	157
	4	<0.5	24.2	17.5	<5	<0.1	12.8	18.7
EB-8	Surface	<0.5	20.1	47.4	210	0.6	17	132
	4	<0.5	19	11	61.9	0.1	12.8	26.3
MW-3	Surface	6.3	49.2	262	603	1.2	32.7	623
	4	<0.5	26.3	9.9	<5	<0.1	16.7	15.7

a See Figure 2 for approximate location of borings.

b Analyzed using EPA 6000 and 7000 series Methodology.

c Depth in feet below ground surface.

Cd Cadmium

Cr Chromium

Cu Copper

Pb Lead

Hg Mercury

Ni Nickel

Zn Zinc

< Indicates the analyte was not detected at or above the method detection limits.

Table 3
Summary of PCB and Chlorinated Pesticide Analyses
Southern Pacific Transportation Company
Exploratory Borings on Bobo's Junkyard
Oakland, California
IC Project No. 05465

Sample Number	Depth	Chlordane (mg/kg)	Toxaphene (mg/kg)	Lindane (mg/kg)	DDT (mg/kg)	DDD (mg/kg)	DDE (mg/kg)	Endrin (mg/kg)	Dieldrin (mg/kg)	PCB (mg/kg)
EB-1	Surface	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08
	4'	1.8	<1	<0.012	<0.05	<0.05	<0.025	<0.025	<0.025	<0.5
EB-2	Surface	66	42	<0.012	5	<0.5	<2.5	<2.5	<2.5	<5
	4'	0.98	0.49	<0.008	<0.05	<0.05	<0.025	<0.025	<0.025	<0.08
EB-3	Surface	<2.5	<10	0.26	<0.5	<0.5	<1.2	<1.2	<0.25	188
	4'	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08
EB-4	Surface	<0.12	<0.5	<0.008	<0.12	<0.12	<0.062	<0.062	<0.062	<0.25
	4'	<0.12	<0.16	<0.008	<0.016	<0.025	<0.016	<0.016	<0.016	<0.25
EB-5	Surface	<0.25	<1	<0.012	0.098	1.7	0.28	0.046	1.5	<0.5
	4'	<0.25	<1	<0.012	<0.05	<0.05	<0.025	<0.025	<0.025	<0.5
EB-6	Surface	<0.62	<0.5	<0.008	0.1	<0.12	<0.062	<0.062	<0.062	<0.25
	4'	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08
EB-7	1.5'	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08
	4'	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08
EB-8	Surface	<0.12	<0.5	<0.008	<0.025	<0.025	<0.012	<0.012	<0.012	<0.25
	4'	<0.12	<0.5	<0.008	<0.025	<0.025	<0.012	<0.012	<0.012	<0.25
MW-3	Surface	<2.5	<10	<0.12	5.3	<0.5	1.5	<0.25	0.40	<5
	4'	<0.08	<0.16	<0.008	<0.016	<0.016	<0.016	<0.016	<0.016	<0.08

a See Figure 2 for approximate boring locations

< Indicates the analyte was not detected at or above the method detection limit. Detection limits were adjusted to account for matrix interferences.

Analyzed by EPA Method 8080

Table 4
Summary of Analyses
Southern Pacific Transportation Company
Debris Piles on Bobo's Junkyard
Oakland, California
SPEVS Project No. 05465

Sample Number	Total Petroleum Hydrocarbons (mg/kg)		Metals ^d (mg/kg)										Organochlorine Compounds ^e (mg/kg)				
	TPH-D ^b	O & G ^c	Cd	Cr	Cu	Pb	Hg	Ni	Zn	PCB	DDT	DDD	DDE	Endrin	Dieldrin		
P ₁	3,700	20,000	8.7	91.9	629	911	17.3	115	1,210	4.5	3.5	1.0	0.86	0.22	0.34		
P ₂	7,500	13,000	17.7	187	8,570	3,480	1.5	118	3,400	230	<5	<5	<2.5	<2.5	<5		
P ₃	2,900	13,000	10.5	104	7,320	2,140	0.76	715	4,640	87	<2.5	<2.5	<1.2	<1.2	<1.2		
P ₄	4,400	<50	10.7	90.4	559	1,860	0.51	77	1,210	550	<5	<5	<2.5	<2.5	<2.5		

a Samples were collected from 4 different debris piles located on the site.

b TPH as diesel analyzed by EPA Method 8015 Modified.

c Oil and Grease analyzed by EPA Method 413.1.

d Analyzed by EPA 8000 and 7000 Series Methodology.

e Analyzed by EPA Method 8080.

< Indicates the analyte was not detected at or above the method detection limits. Detection limits were adjusted to account for matrix interferences.

Cd Cadmium
 Cr Chromium
 Cu Copper
 Pb Lead
 Hg Mercury
 Ni Nickel
 Zn Zinc
 DDT Dichlorodiphenyltrichloroethane
 DDD Dichlorodiphenyldichloroethane
 DDE Dichlorodiphenyldichloroethylene
 PCB Polychlorinated Biphenyls

APPENDIX B

PERSONAL PROTECTIVE EQUIPMENT

All personnel must be provided with appropriate personal safety equipment and protective clothing. Each individual will be properly trained in the use of this safety equipment before the start of field activities. Safety equipment and protective clothing shall be used as directed by the Site Safety Officer. All such equipment and clothing will be cleaned and maintained in proper condition by project personnel. The Site Safety Officer will monitor the maintenance of personal protective equipment to ensure proper procedures are followed.

Personal protective equipment will be worn at all times, as designated by this Health and Safety Plan. Levels of protective clothing and equipment have been assigned to specific work tasks.

The personal protective equipment levels designated below are in conformance with EPA criteria for Level B, C, and D protection. All respiratory protective equipment used will be approved by NIOSH. The levels of protection and their corresponding equipment are described below.

Level B Protection

- Pressure-demand, cascade, air-line system or suitable self-contained, pressure-demand breathing apparatus.
- Chemical-resistant clothing such as a Poly-coated Tyvek or Saranex. Suits will be one piece with booties and elastic wrist bands.
- Outer nitrile and inner latex surgical gloves.
- Leather, steel-toe boots with rubber overboots.
- Water-resistant tape over protective clothing as necessary.
- Options as required:
 - Coveralls
 - Disposable outer boots
 - Face shield
 - Escape mask
 - Hard hat
 - Hearing protection

Level C Protection

- Full-face or half-face air-purifying respirator equipped with appropriate organic vapor/dust canisters or cartridges.
- Chemical-resistant clothing such as Tyvek, Poly-coated Tyvek or Saranex. Suits will be one piece with hoods, booties, and elastic wrist bands.
- Outer nitrile gloves and inner latex surgical gloves.
- Leather, steel-toe boots with rubber overboots.
- Options as required:
 - Coveralls
 - Disposable outer boots
 - Escape mask
 - Hard hat
 - Face shield
 - Hearing protection
 - Safety glasses
 - Water-resistant tape

Level D Protection

- Coveralls or long-sleeve shirts and long pants.
- Outer nitrile gloves at a minimum for all material-handling activities. Inner latex surgical gloves are recommended where practical.
- Leather, steel-toe boots with rubber boot covers.
- Level C protection readily available.
- Options as required:
 - Disposable outer boot covers
 - Hard hat
 - Safety glasses
 - Hearing protection
 - Chemical-resistant gloves

APPENDIX C

MEDICAL MONITORING

The Occupational Safety and Health Administration (OSHA) has established requirements for a medical surveillance program designed to monitor and reduce health risks for employees potentially exposed to hazardous materials (29 CFR 1910.120). This program has been designed to provide baseline medical data for each employee involved in hazardous waste operations, including field activities, and to determine his/her ability to wear personal protective equipment, such as chemical resistant clothing and respirators. Employees who wear or may wear respiratory protection must be provided with respirators as regulated by 29 CFR 1910.134. This standard requires that an individual's ability to wear respiratory protection be medically certified before he/she performs designated duties. Where medical requirements of 29 CFR 1910.120 overlap those of 29 CFR 1910.134, the more stringent of the two will be enforced.

The medical examination must be administered on a pre-employment and annual basis and as warranted by symptoms of exposure or specialized activities. These examinations shall be provided by employers without cost or loss of pay to the employee. For the purposes of this Health and Safety Plan, all subcontractors shall assume the employer's responsibility in obtaining the necessary medical monitoring and training for their employees pursuant to this section of 29 CFR 1910.120.

Figure C-1 provides a list of minimum medical monitoring requirements. The examining physician is required to make a report to the employer of any medical condition that would place such employees at increased risk of wearing a respirator or other personal protective equipment. Each employer engaged in site work shall assume the responsibility of maintaining site personnel medical records as regulated by 29 CFR 1910.120 where applicable. Exemption from the medical surveillance program may be allowed by the IC Health and Safety Officer or his/her designee. These exemptions will be based on his/her interpretation of the requirements of 1910.120 relative to each individual exemption request.

All employers contracted to work at the site designated by this Plan will be responsible for ensuring that their employees have received the proper medical tests as regulated by 29 CFR 1910.120 and shall provide the contractor with certification of same.

FIGURE C-1
Medical Monitoring Requirements

The following components must be included in the medical monitoring program required for on-site personnel, unless otherwise noted:

- **Medical History and Physical, including:**
 - Medical questionnaire
 - Completion of medical history with occupational risk factor analysis
 - Examination by physician
 - Evaluation of test results
 - Brief report sent to employer covering specific requested areas as well as pertinent positive findings; report sent to family physician and employee by request

- **Pulmonary Function Testing (FEV₁, FVC)**
- **EKG (12-lead)**
- **Lab tests, including:**
 - Urinalysis
 - Blood Chemzyme Analysis (Chem 18)
 - Coronary Risk Screen
 - Complete Blood Count with differential
- **Audiometric testing**
- **Visual Acuity**
- **Chest X-ray**
- **Special medical tests may be performed as indicated by potential exposures.**

APPENDIX D

PERSONNEL TRAINING

Site personnel will be required to participate in a health and safety training program that complies with criteria set forth by IC and OSHA as per 29 CFR 1910.120. This program will instruct employees on general health and safety principles and procedures, proper operation of monitoring instruments, and use of personal protective equipment. Introductory training is provided to those employees whose qualifications or experience do not meet standards necessary to safely perform field activities, as determined by qualifications and experience review (40-hour or 24-hour training, plus 24 hours of on-site supervision). A minimum of eight hours of update training is provided annually to review general health and safety protocols and to inform employees of changes, additions, etc., regarding health and safety procedures (eight-hour refresher training).

In addition, site employees will undergo site-specific training prior to the start-up of any given project or task. As activities change at a particular site, related training will address potential hazards and associated risks, site operating procedures, emergency response and site control methods to be employed.

Specialized training will be provided as dictated by the nature of site activities. Specialized training will be provided for activities such as confined space entry, excavations, and handling of unidentified substances. Employees involved in these types of activities will be given off-site instruction regarding the potential hazards involved with safety activities and the appropriate health and safety procedures to be followed. Off-site instruction is meant to include any area where employees will not be exposed to site hazards.

Site personnel involved in the field activities will have received the appropriate basic training plus additional specific training where needed. Field employees are trained in first aid as required by 29 CFR 1910.151. CPR training is provided on a voluntary basis and is strongly recommended for all field personnel. Additionally, project managers attend eight hours of training in project management and technical safety skills (eight-hour supervisor's training).

This Health and Safety Plan must be distributed to all subcontractors prior to the start of field activities. A pre-operation meeting will be held to discuss the contents of the Plan. Specialty training will be provided as determined by task and responsibility. All training of personnel will be conducted under direct supervision of a trained Health and Safety Officer.

Exemptions from training may be approved by the IC Regional Health and Safety Officer or a designee.

APPENDIX E

DECONTAMINATION

Personnel involved with hazardous material handling may be exposed to compounds in a number of ways, despite the most stringent protective procedures. Personnel may come in contact with vapors, gases, mists, or particulates in the air, or with site media while performing work tasks. Use of monitoring instruments and equipment can also result in exposure to hazardous substances.

In general, decontamination involves scrubbing with an Alconox/water solution followed by clean water rinses. All disposable items will be disposed of in a dry container. Certain parts of contaminated respirators, such as harness assemblies and leather or cloth components, are difficult to decontaminate. If grossly contaminated, they may have to be discarded. Rubber components can be soaked in soap and water and scrubbed with a brush. In addition to being decontaminated, all respirators, non-disposable protective clothing, and other personal articles must be sanitized before they can be used again unless they are assigned to individuals. The manufacturer's instructions should be followed in sanitizing the respirators. The Site Safety Officer will be responsible for supervising the proper maintenance, decontamination, and sanitizing of all personal protective equipment.

Standard PPE Decontamination

The Site Safety Officer will monitor decontamination procedures to ensure their effectiveness. Modifications of the decontamination procedures described below may be necessary as determined by the Site Safety Officer's observations.

- **Level B Personal Protection Decontamination Procedure:**
 - **Step 1 - Segregated Equipment Drop** - Deposit equipment (tools, sampling devices, notes, monitoring instruments, radios, etc.) used on the site onto plastic drop cloths.
 - **Step 2 - Boot Covers and Glove Wash** - Outer boot covers and outer gloves should be scrubbed with a decontamination solution of detergent and water.
 - **Step 3 - Rinse Off Boot Covers and Gloves** - Decontamination solution should be rinsed off boot covers and gloves using generous amounts of water. Repeat as many times as necessary.
 - **Step 4 - Tape Removal** - Remove tape from around boots and gloves and place into container with plastic liner.

- **Step 5 - Boot Cover Removal** - Remove disposable boot covers and place into container with plastic liner.
- **Step 6 - Outer Glove Removal** - Remove outer gloves and deposit in container with plastic liner.
- **Step 7 - Suit/Safety Boot Wash** - Completely wash splash suit, SCBA, gloves, and safety boots. Care should be exercised that no water is allowed into the SCBA regulator. It is suggested that the SCBA regulator be wrapped in plastic.
- **Step 8 - Suit/Safety Boot Rinse** - Thoroughly rinse off all decontamination solution from protective clothing.
- **Step 9 - Tank Changes** - This is the last step in the decontamination procedure for those workers wishing to change air tanks and return to the exclusion zone. The worker's air tank is exchanged, new outer glove and boot covers are donned, and joints are taped.
- **Step 10 - Removal of Safety Boots** - Remove safety boots and deposit in container with a plastic liner.
- **Step 11 - SCBA Backpack Removal** - Without removing face piece, remove the SCBA backpack and place it on a table. Then disconnect the face piece from the remaining SCBA unit and proceed to the next station.
- **Step 12 - Splash Suite Removal** - With care, remove splash suit. The exterior of the splash suit should not come in contact with any inner layers of clothing.
- **Step 13 -- Inner Glove Wash** - The inner gloves should be washed with a mild decontamination solution (detergent/water).
- **Step 14 - Inner Glove Rinse** - Generously rinse inner gloves with water.
- **Step 15 - Face Piece Removal** - Without touching face with gloves, remove face piece. Deposit face piece into a container that has as a plastic liner.
- **Step 16 -- Inner Glove Removal** - Remove inner glove and deposit in container with plastic liner.
- **Step 17 - Field Wash** - Wash hands and face thoroughly. If highly toxic, skin corrosive, or skin-absorbent materials are known or suspected to be present, take a shower.

- **Level C and Level D Personal Protection Decontamination Procedure:**

The decontamination procedure for Level C and Level D personal protection will employ applicable steps detailed in the Level B decontamination process.

APPENDIX F
IC INCIDENT REPORTING FORM
SOUTHERN PACIFIC TRANSPORTATION COMPANY PROPERTY
BOBO'S JUNKYARD
OAKLAND, CALIFORNIA
IC PROJECT NO. 05465

INCIDENT REPORT FORM

Date/Time of Occurrence _____ Location _____

Classification of Incident: Spill/Environmental Release _____
Occupational Injury/Illness _____
Property Damage _____

Complete Description of the Incident (include personnel and equipment involved, occupational injuries, emergency action taken, extent of property damage, etc...): _____

Witnesses _____

Occupational Injury or Illness Involved

Name(s) of individual injured _____

Type _____ Location _____ Extent _____

Did employee return to work: Y/N _____ If no, date left work _____

If yes, date return _____

Did the injury result in job transfer or restricted activity: Y/N _____

Specify treatment facility and physician _____

Supervisor's Analysis and Action

Date/Time of notification _____

Possible or known causes _____

Corrective measures taken or needed _____

Was the injury the result of:

Failure to use safety equipment or to obey safety rules: Y/N _____

To be completed by the Corporate Health and Safety Officer

Follow-up completed by _____ Date _____

Additional Comments _____

Employee: _____

Supervisor Signature

Corporate Health and Safety