SITE 16 & SITE 15 TSTA: IWP
IMPLEMENTATION WORK PLAN
NON-TIME CRITICAL REMOVAL ACTION
FINAL

NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA
November 1997

Prepared by:

Moju Environmental Technologies, Inc.
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Oakland, CA 94607

ENGINEERING FACILITIES ACTIVITY WEST NAVAL FACILITIES ENGINEERING COMMAND U.S. NAVY
San Bruno, California

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Navy Remedial Project Manager: George Kikugawa

Moju Project Manager: Akali Igbene

IMPLEMENTATION WORK PLAN REMOVAL ACTION PCB AND LEAD SOILS AT SITE 16 AND SITE 15 TSTA

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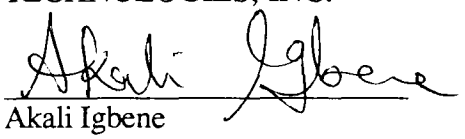
APPROVED:

MOJU ENVIRONMENTAL
TECHNOLOGIES, INC.



Akali Igbene

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1.0 INTRODUCTION

Moju Environmental Technologies (Moju) was selected by the Engineering Field Activity West (EFA West), Naval Facilities Engineering Command, U.S. Navy, as the prime contractor for preparing an Engineering Evaluation/Cost Analysis (EE/CA), and this Implementation Work Plan (IWP), as part of the non-time critical soil removal action for the Site 16-CANS C-2 Area (Site 16) and the Site 15 Temporary Storage and Treatment Area (TSTA) at the former Naval Air Station Alameda (NAS Alameda). This Implementation Work Plan describes the anticipated actions necessary to implement the removal actions for these sites. In this document, work related to Site 16 is discussed first followed by a discussion of the TSTA because the Site 16 removal action is scheduled to occur first.

The IWP presents administrative and technical requirements for the contractor conducting the removal action and for confirmation sampling and analysis to verify completion of the project.

This IWP has been organized to present a brief introduction and background of the Site 16 and TSTA sites and soil removal actions. Section 2 describes requirements for the RAC Contractor work plans including mobilization, excavation, demobilization, and waste management. Section 3 describes requirements for the Clean Contractor work plan for verification of removal action clean-up levels. Section 4 is the schedule for the implementation of the Site 16 and TSTA removal actions.

1.1 SITE DESCRIPTION

1.1.1 Site 16 and Site 15 TSTA Description

The Naval Air Station Alameda (NAS Alameda) is located at the western end of Alameda Island in Alameda County, California. NAS Alameda is bounded on the north by the Oakland Inner Harbor, by San Francisco Bay to the west and south and by the City of Alameda to the east. Site 16 is located at the southeast corner of NAS Alameda between Avenues Ticonderoga and West Hornet and east of 11th Street. Site 16 is shown in relation to NAS Alameda complex on the Vicinity Map, Figure 1-1. The TSTA is located at the north-west end of Alameda Island. Relative to the NAS facility, the TSTA is located west of the middle of the northern edge of the facility, north of Runway 7-25 and the Perimeter Road, and about 300 feet south of the Oakland Inner Harbor. The TSTA site is shown in relation to the NAS Alameda complex on the vicinity map, Figure 1-1.

Site 16 occupies about 6.5 acres of which about 3 acres are relatively open space used as a storage yard (storage area). Most of the removal action work will be conducted in this area. A large part of the storage area is covered by steel plates (temporary runway plates) that are made of steel, which are about 3/16 inch thick, 18 inches wide and 10 feet long. About 50% percent of the surface area of the plates consist of perforations. The plates are interconnected, but can be separated. Part of the storage area is paved. About 0.5 acre, at the north-west corner, is separated from the rest of the site by fences and is not part of the removal action. The remaining 3.5 acres contain large, steel shipping containers (CANS) that have been converted for storage (Figure 1-2). One small area within the CANs area is subject to the removal action. The CANS are structurally connected to the foundations so that they are not readily movable. Work in the CANs area will have to be conducted without moving the storage structures. The area around the CANS is paved with asphalt concrete. Surface drainage for the site is by drop inlets.

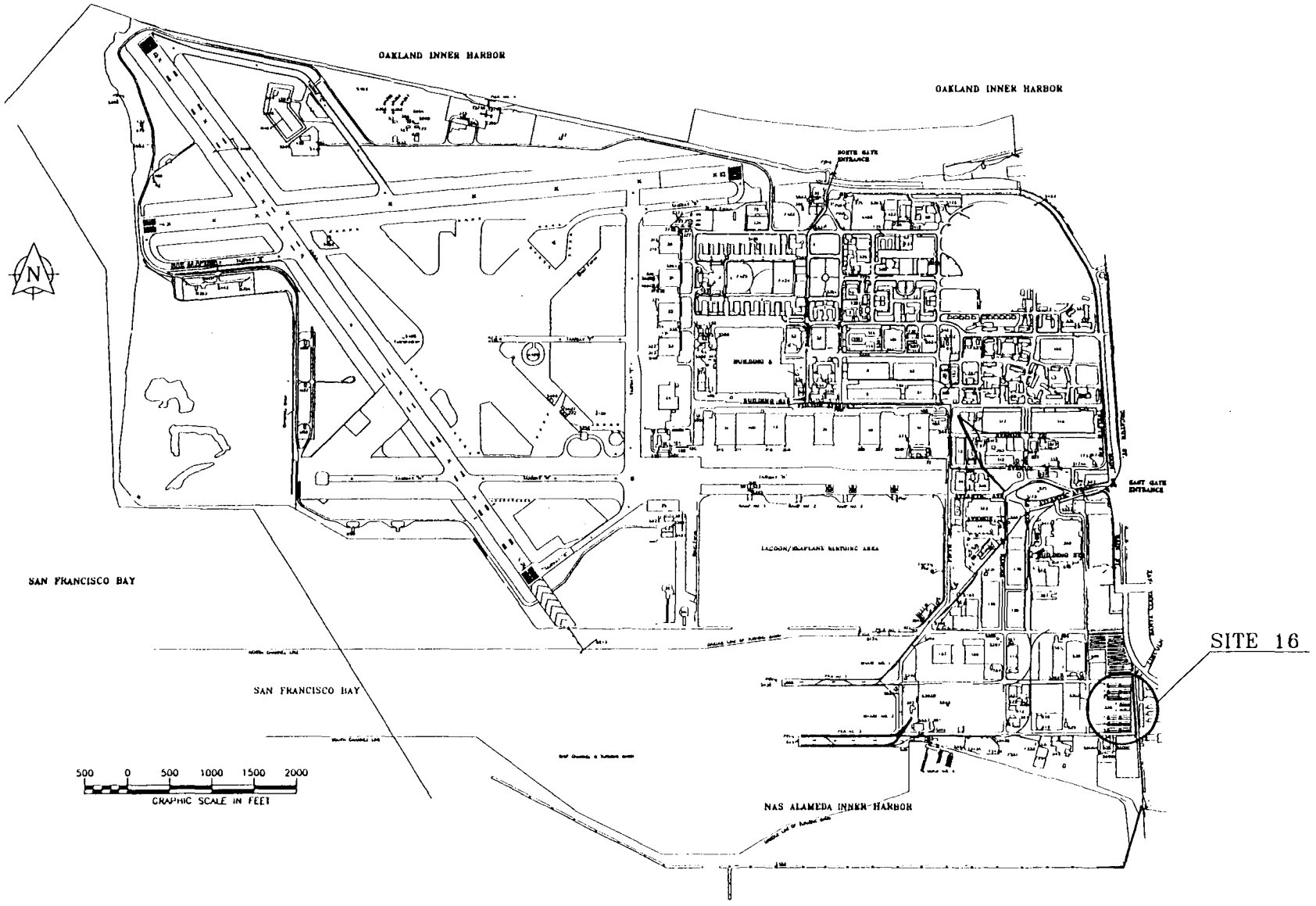
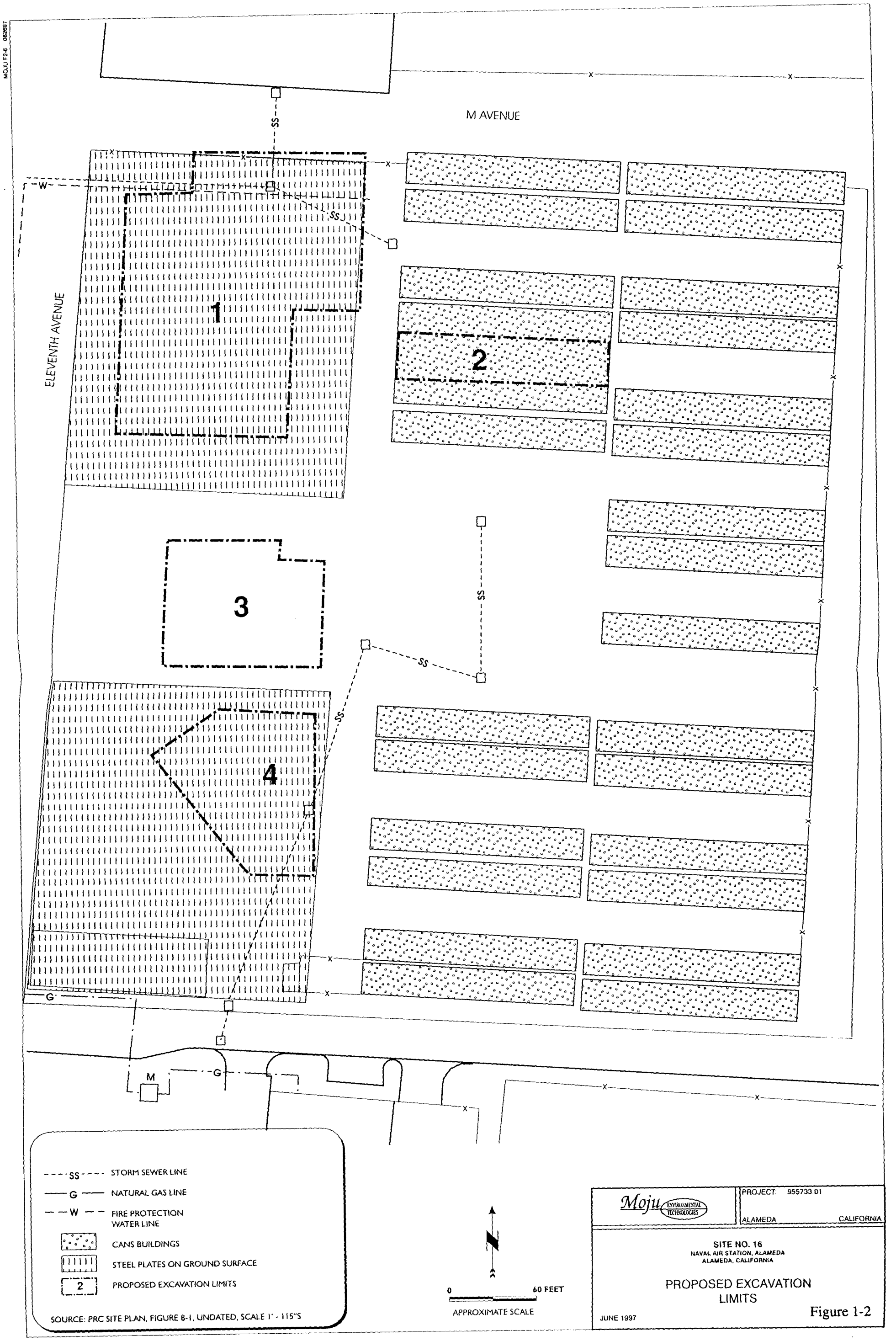


Figure 1-1 Location of Site 16 and TSTA, Relative to NAS Alameda


MOJU F2-6 062697
M AVENUE
ELEVENTH AVENUE
1
2
3
4
SS
W
G
M
STORM SEWER LINE
NATURAL GAS LINE
FIRE PROTECTION WATER LINE
CANS BUILDINGS
STEEL PLATES ON GROUND SURFACE
PROPOSED EXCAVATION LIMITS
SOURCE: PRC SITE PLAN, FIGURE B-1, UNDATED, SCALE 1" = 115'S
0
60 FEET
APPROXIMATE SCALE
Moju ENVIRONMENTAL TECHNOLOGIES
PROJECT: 955733.01
ALAMEDA
CALIFORNIA
SITE NO. 16
NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA
PROPOSED EXCAVATION LIMITS
JUNE 1997
Figure 1-2

The soil stockpiles at the TSTA are shown on the Site Plan, Figure 1-3. There are three stockpiles which contain a total of 5400 tons (as reported by IT Corporation) of affected soil. Stockpile 1 is 164 tons (intended to contain soil with high lead concentrations) and Stockpile 2 is 134 tons (intended to contain soil with high PCB concentrations). These two soil piles were intended for soil with higher concentrations of lead or PCBs. Stockpile 3 is 5100 tons and contains the remaining soil derived from the Site 15 removal action.

1.1.2 Geology And Hydrogeology Characteristics

The sites are underlain by hydraulic fill to depths of 15 feet. The fill consists of silty sand with traces of clay, gravel and shell fragments. The sand is generally fine grained. The fill is underlain by native materials described locally as Bay Mud. Groundwater has been encountered between 4 and 6 feet below ground surface. Groundwater is reported to flow to the southwest with an estimated gradient of 0.002 foot/foot.

1.1.3 Historical Usage

At Site 16 the storage yard was reportedly used to store paints, solvents, and acidic and alkaline liquids in storage containers and drums. Some of the storage containers and drums became corroded, resulting in leaks. Electrical transformers containing polychlorinated biphenyls (PCBs) were also reportedly stored in the yard. A PCB transformer located in the northwest corner of the storage yard was reported to have leaked; the exact location of the spill area is unknown. Waste oils (some containing PCBs) were reported to have been used for weed control in the storage yard area until 1963. Historical usage of the CANS area is not clear nor well documented.

More recently, the storage yard has been used to store various obsolete equipment and miscellaneous parts such as paint stripping baths, electrical equipment, and aircraft parts. The CANS area has been used for equipment storage.

The Site 15 TSTA was constructed to store soil derived from the removal action conducted at Site 15. The TSTA soil is physically separated from site soil by a 2 foot thick layer of soil and by an impermeable membrane on top of the buffer layer. The past usage of the area, where the TSTA was constructed, is not relevant to this removal action.

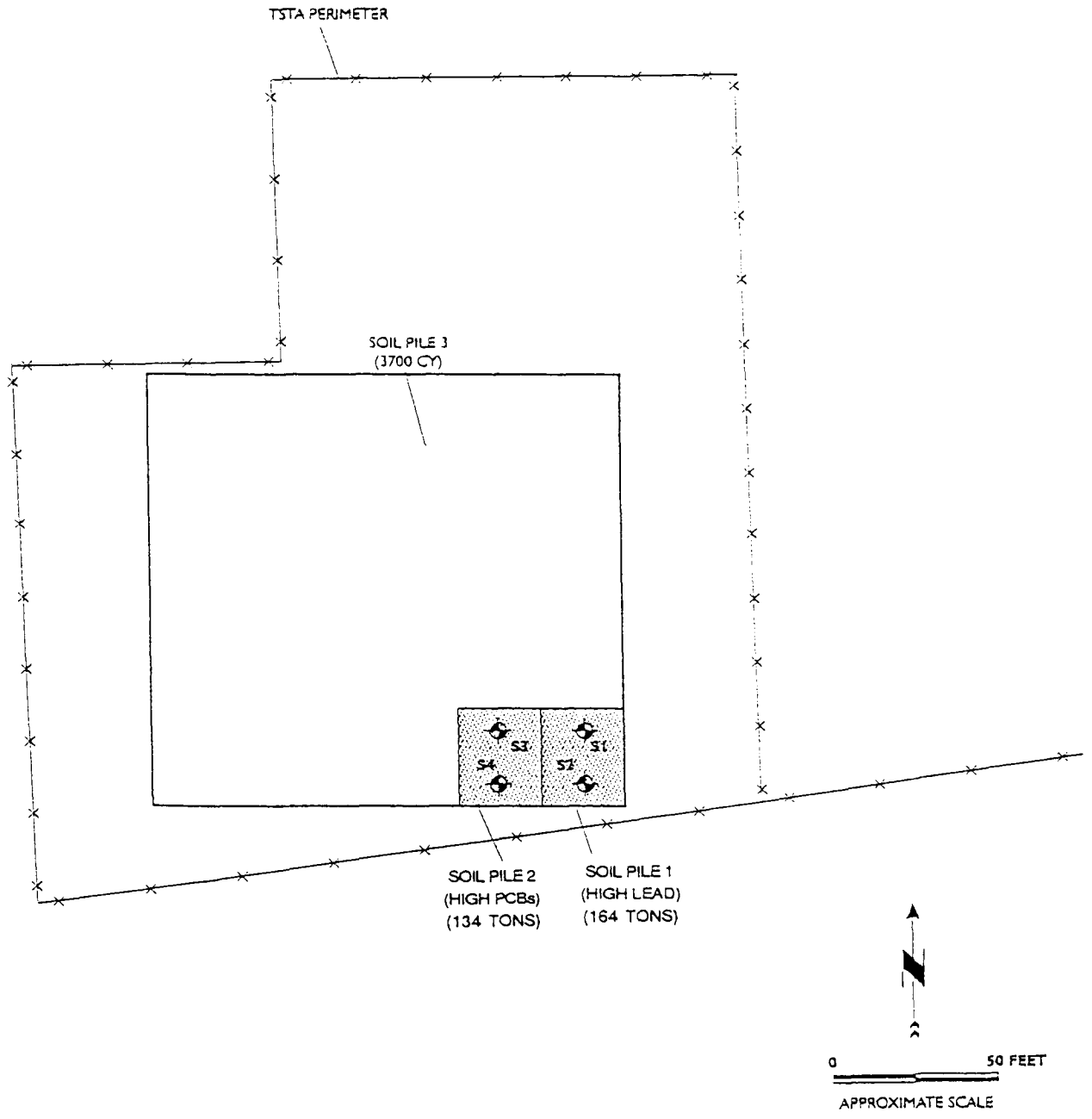
1.1.4 Current Usage

The CANS area (selected portions) are being used for various tenant activities. The storage yard is currently clear and not being utilized.

The TSTA area is used as a temporary storage area for soil contaminated with PCB and Lead. The soil was derived from Site 15.

1.1.5 Future Usage

Future usage has not been determined. However, the areas are currently zoned commercial usage.



SAMPLING LOCATIONS

SAMPLES ANALYZED FOR TOTAL LEAD, PCBs, CAL-WET TEST, CAL-WET WITH DEIONIZED WATER

Moju ENVIRONMENTAL CONSULTANTS

PROJECT:

ALAMEDA CALIFORNIA

TSTA SITE
NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA

TSTA Site Plan

Figure 1-3

MAY 15, 1997

1.1.6 Previous Remedial Action

No remedial action has been performed at Site 16 except for removal of PCB contaminated soil associated with the reported transformer leak. The remedial action was performed by IT Corporation in August 1982 and consisted of removing about 10 cubic yards of PCB contaminated soil. Residual concentration of PCBs in the soil was reported not to exceed 1 mg/Kg. The location of the removal action is not well documented.

The TSTA contains soil stockpiled and derived from an earlier removal action at Site 15.

1.2 DESCRIPTION OF CONTAMINATION

Analyses of soil and groundwater samples were conducted as part of previous site characterization investigations. The analytical results obtained as part of these previous site characterization activities indicate that soils at Site 16 and the TSTA (derived from Site 15) have been impacted by polychlorinated biphenols (PCBs) and the metal lead. Previous site usage information indicates that PCB contaminated oil and probably waste oil (typically containing lead) were applied as a weed killers. During the previous site investigations, various other chemicals were also detected in the soil. PCBs and lead were identified as the only chemicals of concern for these removal actions.

1.2.1 Areas Of Soil Contamination Subject To Removal Actions

Based on the review of previous investigations conducted at Site 16, the surface soil to a depth of about 1 foot, in four areas, is contaminated with either PCBs, lead, or both chemicals. These areas are delineated using the 1 ppm action level for PCBs and 300 ppm action level for lead. The approximate lateral extent of the proposed excavation limits are delineated in Figure 1-2. The depth of the soil subject to the removal action is 1 foot.

TSTA soil is contaminated with PCBs and the metal lead is also present. Based on the solubility of lead, soil in Stockpile 1 was found to have an average solubility (6 ppm) slightly above the regulatory threshold concentration (5 ppm) for classification as Hazardous Waste. Soil in Stockpile 2 was found to have an average solubility for lead of 2.85 ppm, about half the threshold concentration for classification as Hazardous Waste, and is therefore likely to be designated waste. The average concentration of lead, based on the Site 15 data is 92 ppm and for PCBs is 1.9 ppm. Based on this data, soil in Stockpile 3 has a lower total lead concentrations, and is assumed to have lower soluble concentrations and therefore the soil in Stockpile 3 is likely to be Designated Waste. Figure 1-3 shows the contaminated soils in the stockpiles.

1.3 DESCRIPTION OF REMOVAL ACTIONS

At both sites soil will be excavated, loaded on to trucks and disposed of at off-site disposal facilities.

1.3.1 Site 16 Removal Action

Soil, to be excavated during the removal action, will be sampled and analyzed in accordance with waste acceptance protocols for off-site disposal facilities prior to conducting soil removal.

Soil at Site 16, is to be excavated at four areas during the removal action, see Figure 1-2. Two of the areas are covered by temporary runway plates. These plates will have to be removed and disposed of prior to excavating soil.

A third area is covered by both asphalt pavement and temporary runway plates. Asphalt pavement will have to be saw cut, removed and disposed of and the runway plates will have to be removed.

The fourth area subject to the removal action is under a covered structure. Concrete pavement will have to be saw-cut , broken out, removed and disposed of prior to conducting soil removal. Access to the structure is through a roll-up door about 15 feet high by 12 feet wide. The extent of the pavement removal and soil removal will be limited to be within non-structural areas of the adjacent CANs and the canopy structure unless verification sampling indicates that further removal is necessary.

Excavated soil will be loaded into transport vehicles, and taken to an appropriately licensed off-site disposal facility.

Verification sampling will be conducted to determine if the designated clean-up levels for the site have been achieved. If verification sampling indicates that clean-up levels have not been achieved further excavation work will be conducted as needed.

Excavated areas will filled to the original grade with clean imported fill material. The fill material will be compacted.

Pavement will be replaced in the enclosed storage area and as directed by EFA-West.

1.3.2 TSTA Removal Action

Soil, to be excavated during the removal action, will sampled and analyzed in accordance with waste acceptance protocols for off-site disposal facilities prior to conducting soil removal.

Soil at the TSTA, is in three stockpiles, see Figure 1-3. Two of stockpiles are small and one pile contains soil which may be classified as hazardous waste.

The soil piles are covered by plastic membrane covers, which will have to be removed prior to excavating stockpiled soil.

Excavated soil will be loaded into transport vehicles, and taken to an appropriately licensed off-site disposal facility.

Verification sampling will not be conducted unless there are obvious visual indication that the bottom liner of the soil piles has been torn.

The bottom liner under the TSTA soil piles will be removed and disposed of. No regrading of the site is necessary. The two foot thick pad of soil under the bottom liner may be left in place or could be used for other purposes such as backfilling the excavations at Site 16.

1.4 OBJECTIVES

At Site 16, soil containing concentration of PCBs in excess of 1 ppm and with concentration of lead in lead in excess of 300 ppm is to excavated and removed to an off-site disposal facility.

At the TSTA, all the soil in the soil piles is to be excavated and removed to an off-site disposal facility.

1.5 PROJECT ROLES

The project team, involved with soil remediation oversight, at Site 16 and the TSTA consists of the following people:

- Program Manager — George Kikugawa
- Project Manager — Akali Igbene
- Project Engineer — Marc Ritson
- Site Health and Safety Officer — Susan Glasauer
- Field Engineer — Susan Glasauer
-

The project team, involved with conducting the removal action and verification sampling consists of:

- RAC Contractor, Removal Action — IT Corporation
- CLEAN Contractor, Removal Action Verification—EMI/Tetratech

2.0 RAC CONTRACTOR PROJECT WORK PLANS

This section discusses the requirements for the content of the work plans describing activities to be conducted by Navy RAC forces.

2.1 WORK PLANS

This section describes the activities that will be performed to mobilize for the NAS Alameda Site 16 and TSTA Removal Actions. The RAC Contractor will be responsible for preparing and submitting the following prior to mobilizing and conducting site work:

- Construction Work Plan (CWP)
- Contractor Quality Control Plan (CQCP)
- Environmental Protection Plan (EPP)
- Sampling and Analysis Plan (SAP)
- Contractor Health and Safety Plan (HSP).

2.1.1 Construction Work Plan (CWP)

The Construction Work Plan must include the following elements:

- Mobilization and site preparation
- Site security;
- Site Preparation
- Dust control;
- Excavation;
- monitoring;
- transportation;
- equipment and personnel decontamination; and
- site restoration.

2.1.1.1 Mobilization

No permit requirements have been identified for this project.

The type and size of all equipment that will be mobilized and utilized within the exclusion zone will be stated in the CWP. The type and size of equipment used to conduct the removal action will be determined by IT Corporation. Equipment selected should minimize the generation of dust. Any other general preparations such as the installation of communication systems, first aid equipment, fire suppression equipment or other requirements stated in the Health and Safety Plan should be included in the CWP.

2.1.1.2 Site Security

Site security will include preparation of exclusion zones (with a lockable gate), contamination reduction zones, and support zones. Soil removal work will have to be conducted within exclusion zones. The primary element of the exclusion zone can be the existing chain-link fences surrounding the sites. Secondary elements of the secured areas may be delineated by barricades and caution tape.

2.1.1.3 Site Preparation

At Site 16, pavement and temporary runway plates will have to be removed prior to conducting soil removal. Pavement shall be sawcut, as needed, to produce neat construction joints for post-removal action site restoration re-paving. Within the canopy area at Site 16, the extent of the pavement removal and soil removal will be limited to within non-structural areas of the adjacent CANs and the canopy structure unless verification sampling indicates that further removal is necessary. Pavement materials will be broken out, loaded, and transported to an appropriately licensed land disposal facility. Temporary runway plates will also have to be removed prior to conducting soil removal. The CWP will show on site plan maps the proposed sawcut limits.

At the TSTA, plastic covers will have to removed prior to excavating soil. To control dust generation, it may not be preferable to remove the entirety of the cover, but rather to remove the cover as the soil excavation proceeds. The CWP should describe removal of the soil pile cover(s) and the phasing of the removal.

2.1.1.4 Dust Control

Both projects require the excavation of soil and the loading of soil on to trucks for transport to off-site disposal facilities. Dust suppression during excavation work will primarily involve application of water to the soil prior to and during excavation. For both sites the Contractor shall describe water application rates (in a gallons per day per square foot, or per cubic foot), a schedule for application of water, and a means for verifying the adequacy of water application effort prior to excavation, such as sampling soil to determine how well moisture has permeated the soil layer to be removed.

The Contractor will specify that wind speed will be measured and that the person responsible for dust control will be present on site to evaluate the generation of dust and to apply additional water as needed for dust suppression if wind speed exceeds 10 miles per hour. If dust cannot be controlled, operations will be halted and additional water will be applied uniformly across the areas to be excavated, as described in the dust control and excavation sections of the CWP.

Site specific concerns include:

At Site 16 the initial phase of the removal action will require removing the steel runway plates, which are made of steel about 3/16 inch thick, 18 inches wide and 10 feet long. About 50% percent of the plate surface area is perforated. The plates are interconnected, but can be separated. Dust suppression during plate removal is also necessary. A limited application of water, prior to plate removal, with additional application of water during plate removal may be sufficient to control dust. The method for dust suppression after excavation and until verification sampling results are completed must also be described.

At the TSTA, the impermeable cover makes application of water difficult. The moisture content of the soil under the cover should be verified prior to removal of the cover. If the soil is dry and hence prone to generate dust, application of water during cover removal should be considered. Alternatively, the cover could be removed in phases as the soil is excavated limiting the area of the soil piles that generate dust.

2.1.1.5 Excavation

Excavation plans should be developed for both sites. At Site 16, the plan should include phasing excavation work in a manner that minimizes transit of excavation and soil transport equipment across areas subject to the soil removal action. A site plan map showing the phasing of excavation should be included in the CWP.

For Site 16, the CWP should describe methods to control grading depths to within plus or minus _ inch of the 1 foot depth limit, for each piece of equipment that will be used for final grading.

At the TSTA, a similar excavation phasing plan should be developed to describe how excavation will be done in conjunction with cover removal and the dust suppression plan.

2.1.1.6 Air Monitoring

The CWP will describe how compliance will be achieved for requirements of 40 CFR Part 50.6 - National Primary and Secondary Ambient Air Quality Standards, which lists the ambient air quality standards for particulate matter as 150 micrograms per cubic meter for 24 hours, and 50 micrograms per cubic meter as the annual arithmetic mean average. Compliance with CCR Title 8 - General Industry Safety Order, the state occupational health and safety regulations will also be discussed. CCR Title 8, Section 5155 limits the amount of dust generated during site activities to the 8-hour time weighted average for nuisance dust of 10 milligrams per cubic meter. Similarly, Section 5216 will limit the 8-hour time weighted averages for lead emissions to 50 micrograms per cubic meter.

The Contractor will state the type of equipment to be used for air monitoring, the type of monitoring being done by each type of monitoring device, and provide a site plan map showing monitoring locations, and schedulers for assessment of air quality.

2.1.1.7 Transportation

Contaminated soil will be transported to Class 1 land disposal by appropriately licensed transporters. For soil that does not require manifesting, the contractor will maintain a log of trucks including truck specific identification, transporters signature, destination, quantity of soil by weight, and receiving facility signature. A portable scale will be maintained on site and transport vehicles will be weighed prior to loading and after loading. Both entrance and exit weights will be entered into the log. Transport trucks will be clean of visible dirt prior to entering the sites and will be washed off-site if they are observed to be dirty. The Contractor will specify a method for decontaminating transport vehicles leaving the site. Trucks with visible dirt on the chassis or body of the truck will not be allowed to leave the site until the dirt is removed, whether the dirt is contaminated or not. The CWP will include a description of the size of trucks to be used, a transit map showing the truck transit route and an estimated schedule for vehicle movement in and out of the former NAS Alameda and the City of Alameda. The schedule should at a minimum estimate the hourly number of trucks in transit and the periods of time during the day for transit.

2.1.1.8 Site Restoration

Imported clean fill material will be used to restore the excavation at Site 16 to the level of the surrounding grade. The CWP must describe the type(s) of soil to be used. Soil will be compacted in lifts with a maximum un-compacted thickness of 8 inches to 90% relative compaction as determined by ASTM methods ASTM D 15 and 2922. The method and frequency for conducting compaction testing shall be included in the CWP. After soil is replaced, pavement replacement will

be required at the enclosed canopy area as directed by EFA-West.

2.1.1.9 Decontamination Areas

The CWP will describe personnel and equipment decontamination areas and procedures and disposal of decontamination residuals, such as decontamination water and personnel protective gear. The locations and construction of the decontamination areas will be shown on site plan maps. At a minimum the CWP will describe procedures that assure all equipment leaving the site will be clean of visible dirt.

2.2 CONTRACTOR QUALITY CONTROL PLAN (CQCP)

The requirements for the CQCP are prescribed by the DON's contract with the RAC Contractor.

The CQCP will describe Field Notes And Logbooks to be maintained during the site work, the personnel that will maintain the records and the type(s) of records to be maintained, and protocols for making entries in the field log. Typically, field personnel will record all information pertinent to work required by the CWP.

2.3 ENVIRONMENTAL PROTECTION PLAN (EPP)

Excavation activities will be conducted and completed during the summer season. Rainfall is not anticipated and therefore runoff control probably will not need to be implemented. Dust suppression water should not be allowed to run-off into storm drains. Similarly, dust or dirt should not be allowed to enter into storm drain opening. The EPP will describe how covering of storm drain inlets and placement of temporary berms to prevent water from running into the inlets will be done.

2.4 SAMPLING AND ANALYSIS PLAN (SAP)

2.4.1 Sample Type, Frequency And Qa/Qc Samples

Prior to conducting soil removal, soil to be excavated during the removal action, will be sampled and analyzed in accordance with waste acceptance protocols for off-site disposal facilities. Waste acceptance criteria will be included in the sampling plan and used as the basis for determining the frequency of sampling and analyses and the types of analyses. A site map showing sampling locations and sample identification numbers will be included in the SAP.

In addition to the waste acceptance sampling, as necessary the following types QA/QC samples to be collected during the field investigation activities include: (a) field duplicates, (b) laboratory matrix spike/matrix spike duplicates (MS/MSD), sample duplicates (DUP), and (d) trip blanks.

2.4.2 Sampling, Sample Handling, And Sample Identification Procedures

The SAP will specify the type of sampling device(s) to be used and the methodology for using the sampler(s). At Site 16 the samples should be collected from a depth of 5 to 7 inches below ground surface (at the middle of the soil profile). Samplers with an outside diameter less than the diameter of the perforation in the runway plates will be needed unless the runway plates are removed first. Coring of some areas, covered by pavement, will also be necessary. A description of decontamination procedures to be used to decontaminate samplers between sampling location will

also be in the SAP.

Description of sample preservation, holding times, handling, and shipment procedures should be included in SAP.

Each sample container will be identified by a unique sample identification number. The label will also identify the sampling location, date, time of collection, and analyses to be performed.

2.4.3 Laboratory Analyses

All laboratory analyses will be conducted by a laboratory approved by the NFESC for the methods of analyses specified herein.

2.4.4 Field Notes And Logbooks

Field personnel will record all information pertinent to the sampling and measurement program in a field logbook. The SAP will describe Field Notes And Logbooks to be maintained during the site work, the personnel that will maintain the records and the type(s) of records to be maintained, and protocols for making entries in the field log.

2.5 CONTRACTOR HEALTH AND SAFETY PLAN

The Contractor will prepare a site specific Health and Safety Plan which complies with the requirements of CERCLA and OSHA requirements. Specifically, CERCLA regulations (40 CFR 300.150-Worker Health and Safety) reference regulations which have requirements for health and safety training for site workers and a site specific Health and Safety Plan; i.e. 29 CFR 1910.120 . Workers at the site will be trained in accordance with 29 CFR 1910.120. In addition, the plan will describe how personnel monitoring, to assess possible PCB and lead exposure, will be conducted and what measures will be taken to prevent such exposure
this project.

3.0 FINAL-CONFIRMATION ANALYSIS

A Confirmation Sampling Plan (CSP) will be prepared by the CLEAN Contractor and will describe confirmation sampling and analyses to be conducted to verify a) achievement of clean-up levels for the Site 16 removal action and b) to confirm that the TSTA barrier layer was effective. Sampling frequency and the types of analyses will be in accordance with USEPA and CALEPA guidance. Guidance documents should be referenced in the CSP.

4.0 SCHEDULE CONSIDERATIONS

At Site 16, the project will be conducted on weekends specified by the local school district, for the months of September and October 1997. At the TSTA the project will be conducted during weekdays in the months of September and October 1997.