Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO NO. 0005

FINAL

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Revision 0

May 7, 1999

GEOTECHNICAL EVALUATION OF BORROW SOURCES FOR LANDFILL COVERS MARINE CORPS AIR STATION EL TORO EL TORO, CALIFORNIA

DCN: FWSD-RAC-99-0247

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FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

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DATE: 5/7/99
CTO: 0005
LOCATION: MCAS El Toro

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Neil Hart, Program Manager

DESCRIPTION: Final Site-Specific Health and Safety Plan, Geotechnical Evaluation of Borrow Sources For Landfill Covers, May 7, 1999

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FINAL SITE-WIDE HEALTH AND SAFETY PLAN GEOTECHNICAL EVALUATION OF BORROW SOURCES FOR LANDFILL COVERS

DATED 07 MAY 1999

IS ENTERED IN THE DATABASE AND FILED AT ADMINISTRATIVE RECORD NO. **M60050.000462**

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LIST OF ACRONYMS

ABIH	American Board of Industrial Hygiene
AGGIH	American Conference of Governmental Industrial Hygienists
AHA	Activity Hazard Analysis
AIHA	American Industrial Hygiene Association
APR	Air Purifying Respirator
Cal-OSHA	California Occupational Health and Safety Administration
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
Corps	U.S. Army Corps of Engineers
COTR	Contracting Officer's Technical Representative
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Corridor
CTO	Contract Task Order
EHS	Environmental Health and Safety
EPA	U.S. Environmental Protection Agency
ESQ	Environmental Safety and Quality
ESS	Environment Safety Specialist
FCR	Field Change Request
FOPS	Falling Object Protective System
Foster Wheeler Environmental	Foster Wheeler Environmental Corporation
GFCI	Ground Fault Circuit Interrupters
HEPA Filter	High Efficiency Particulate Air Filter
IRP	Installation Restoration Program
LEL	Lever Explosive Units
MSDSs	Material Safety Data Sheets
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTR	Navy Technical Representative
O_2	Oxygen
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PESM	Project Environmental Health and Safety Manager

LIST OF ACRONYMS
(Continued)

PID	Photoioization Detector
PjM	Project Manager
PM	Program Manager
PPE	Personal Protective Equipment
QC	Quality Control
ROICC	Resident Officer in Charge of Construction
RPM	Remedial Project Manager
RQ	Reported Quantity
SCBA	Self-contained Breathing Apparatus
SHSP	Site-Specific Health and Safety Plan
SHSS	Site Health and Safety Specialist
SWDIV	Southwest Division Naval Facilities Engineering Command
TWA	Time Weighted Average
USACE	United States Army Corps of Engineers

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

This CTO Site-Specific Health and Safety Plan (SHSP) applies to work performed under Contract N68711-98-D-5713 for CTO No. 0005, Geotechnical Evaluation of Borrow Sources for Landfill Covers, Marine Corps Air Station (MCAS), El Toro, California.

1.2 APPLICATION

This SHSP will be used with the MCAS El Toro Site-Wide Health and Safety Plan (Site-Wide Plan) attached to this plan and is applicable to all work conducted by Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) and Foster Wheeler Environmental subcontractors under the basic contract and this contract task order. Throughout this SHSP, refer to the Site-Wide Plan for additional details common to all work performed at MCAS El Toro.

1.3 SUMMARY OF MAJOR RISKS

The potential hazards associated with this project are associated with field activities of drilling and excavation. Physical hazards include heat stress, noise, use of heavy construction equipment (backhoes, excavators), work in areas which have no paved roads, and potential exposure to hills and slopes. Primary site hazards are potential exposure to insects such as bees and wasps and encounters with snakes.

2.0 ORGANIZATION OF THE FIELD INVESTIGATION

This section identifies the individuals from the Navy, regulatory agencies and Foster Wheeler Environmental who have been responsible for the oversight and/or implementation of this removal action.

2.1 LIST OF POINTS OF CONTACT

The following is a list of key contacts for those agencies involved in the project:

Agency	Contact	Project Title
Southwest Division Naval Facilities Engineering Command 1220 Pacific Highway San Diego, CA 92132-5190	Dave Demars (619) 532-4163	Remedial Project Manager
Southwest Division Naval Facilities Engineering Command 1220 Pacific Highway San Diego, CA 92132-5190	Narcisco A. Ancog (619) 532-2540	Quality Assurance Officer
MCAS El Toro, Southwest Division Naval Facilities Engineering Command	Scott Kehe (949) 726-2505	Resident Officer in Charge of Construction
Foster Wheeler Environmental 1230 Columbia Street, Suite 640 San Diego, CA 92101	Neil Hart (619) 234-8696 ext. 211	Program Manager
Foster Wheeler Environmental 611 Anton Blvd., Suite 800 Costa Mesa, CA 92626	William D. Olson, P.E. (619) 234-8696 ext. 209	Project Manager
Foster Wheeler Environmental 1230 Columbia Street, Suite 640 San Diego, CA 92101	Roger Margotto, CIH, CSP, CHHM (619) 234-8696 ext. 203	Project Environmental Health and Safety Manager
Foster Wheeler Environmental 611 Anton Blvd., Suite 800 Costa Mesa, CA 92626	Mary Schneider (714) 444-5517	Project Chemist & Quality Assurance Manager
Foster Wheeler Environmental 611 Anton Blvd., Suite 800 Costa Mesa, CA 92626	David Dirkin (714) 444-5550	Geologist & Site Health and Safety Specialist (SHSS)

3.0 SITE HISTORY AND PROJECT DESCRIPTION

The project is the first step in supporting the use of an alternative landfill cover system for the final remedy of the inactive landfills at Installation Restoration Program (IRP) Sites 2, 3, 5, and 17 at MCAS El Toro.

The primary objective is to conduct a geotechnical investigation to determine the physical properties of borrow material from the potential on-site borrow sources (ONBS) located within the vicinity of IRP Sites 2 and 17. In addition, identify potential off-site borrow sources (OFBS) that meet the specifications for a monolithic soil cover system that were previously determined. Specifications require a hydraulic conductivity of 2×10^{-5} cm/sec. The approximate quantity of soil needed for the landfill covers is 260,000 cy. The results of the field exploration, laboratory testing and evaluation activities shall be summarized in a technical memorandum.

MCAS El Toro is located in the south central portion of Orange County, California, encompassing approximately 4,700 acres. The facility is bordered on the northwest, south, and west by the City of Irvine, and on the east by the City of Lake Forest. The ONBS consists of 8 to 9 acre area located between IRP Sites 2 and 17, two landfills. The general area has been identified as Operable Unit 2B, located to northeast of the main station. The average annual precipitation for this area is approximately 12 inches; precipitation occurs mostly during the winter. The two landfill are identified as Magazine Road Landfill (IRP Site 2) and Communication Station Landfill (IRP Site 17) (see Figure 1, Location Map).

Vegetation at the site provides a habitat for the California gnatcatcher, a federally-listed, threatened bird species.

3.1 PROJECT DESCRIPTION AND DURATION

The field investigation work consists of excavating approximately 5 test pits and drilling 20 soil borings within proposed borrow source. Most of the soil borings will be located on the top flat area of the borrow source due to its relatively even terrain and accessibility. This project is estimated to require no more than one week of field activity.

4.0 POTENTIAL HAZARDS

The Site-Wide Plan identifies hazards that are common to all projects within MCAS El Toro. Site-specific hazards associated with this CTO are summarized below.

4.1 CHEMICAL HAZARDS

The site area for this work was specifically selected because the soil in this area is expected to be clean so that it can be used for the landfill cover. Therefore, no chemical hazards from the site are anticipated. If, during the excavation and drilling, waste material is uncovered or there are persistent odors, the SHSS will stop the work and contact the PESM. The driller may bring certain materials on to the site for use with the drilling equipment. The driller will provide copies of all Material Safety Data Sheets to the SHSS. The SHSS will insure that all site personnel have received training on these chemicals.

4.2 ENVIRONMENTAL HAZARDS

No project unique environmental hazards are anticipated. Refer to Section 4.2 of the Site-Wide Plan. Special precautions for working in wooded and grassy areas are necessary to minimize exposure to insects and snakes.

4.3 PHYSICAL HAZARDS

The Site-Wide Plan identifies physical hazards associated with most projects within MCAS El Toro. Since this project site is located in a more "remote" location, it is essential that all personnel are aware of the hazards associated with working on hilly terrain and in a field environment. Although this area should be clear of unexploded ordnance, personnel should work with caution and carefully observe the work area. Personnel will immediately notify the SHSS if they see anything that may be suspicious. Personnel will not work down hill of any type of equipment.

5.0 ACTIVITY HAZARD ANALYSES

The Activity Hazard Analyses (AHAs) for this project are located in Attachment 2. The SHSS will modify these AHAs as appropriate, add new AHAs for any changes in tasks, and insure that all employees who perform the tasks receive a briefing on the appropriate AHA. The SHSS will forward any modified or new AHAs to the PESM for review.

6.0 PERSONAL PROTECTIVE EQUIPMENT

Table 1 lists the PPE required for each task on this project. This table is prepared based on data provided prior to the start of the project. As additional testing, monitoring and background information become available, the SHSS may adjust the action levels and PPE accordingly. Any changes to PPE require approval by the PESM.

7.0 AIR MONITORING

Ambient air monitoring will be conducted during excavation and drilling in order to determine airborne contamination levels. Since no contaminants are anticipated no personal air sampling is planned.

7.1 DIRECT READING INSTRUMENT-PHOTOIONIZATION DETECTOR (PID) OR FLAME IONIZATION DETECTOR (FID)

A PID or FID will be used to determine the presence and concentration of organic vapors.

Instrument: Photoionization Detector 10.2 eV or 10.6 eV lamp or FID

Action Level: 10 ppm in breathing zone

Action: Level C respiratory protection, notify PESM

7.2 MONITORING STRATEGY

Background levels will be measured with the PID before any work commences. Monitoring of the excavation areas and drilling sites will begin by taking background readings and at least once during the morning and once in the afternoon to verify that no organic vapors are present. The PID will be used wherever odors are detected and will be continued to be used until odors can no longer be detected and organic vapor levels are below 5 ppm. The SHSS, in consultation with the PESM and with concurrence of the NTR will determine if further actions and/or measurements are warranted to prevent or minimize exposure of personnel. Perimeter monitoring requirements will be determined be consulting with the PESM and the NTR.

7.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Adherence to a proper QA/QC plan is essential for a meaningful air sampling effort. The major concerns of a QA/QC plan are calibration of equipment, and document control.

7.3.1 Calibration and Maintenance Procedures

The PID will be calibrated daily or before each use and records detailing date, time, span gas, or other standard and the name of the person performing the calibration. The calibration gas for the PID is usually isobutylene. The calibration gas for the FID is benzene. The SHSS will insure that the instrument is kept clean and will follow manufacturer's directions for keeping the lamp clean. The SHSS will perform no other maintenance procedures unless approved by the PESM.

7.3.2 Documentation

Strict adherence to document and data control procedures is essential for good QA/QC. Data and calibration records must be accounted for and retrievable all times. Types of documents that are essential include notes, logbooks, maps, data sheets and reports. Forms required for this CTO are presented in Attachment 3. These must be placed in the project files. Copies of all field data reports and personal sampling records will be sent to the PESM for review.

8.0 SITE CONTROL

Site control requires the establishment of a regulated area and designated site work zones. Since this project does not anticipate any contamination, the traditional site zones of control are not required. However, access to the work site still requires control to limit access to unauthorized people.

Methods that will be utilized to facilitate site access control include the fence that surrounds the entire site and establishing site work zones around each drilling sampling location and around the excavations. These zones will be controlled by the use of barricade tape or other marking devices, such as barricades, to clearly delineate the area where only authorized personnel are permitted. Signs will be posted to indicate the restricted access.

9.0 MEDICAL SURVEILLANCE PROCEDURES

There are no additional medical surveillance procedures for this project.

10.0 SAFETY CONSIDERATIONS

Refer to the Site-Wide Plan. In addition:

- Insure that telephone communications functions.
- Workers will work in sight of each other. If it is necessary for workers to work out of sight of each other, the buddy system will be used and each team will have a means of communicating with a team that has a telephone (i.e. either each team has a telephone or at least one team has a phone and other teams can communicate by radio with the team that has the telephone).
- Each work team will have an air horn to be used to summon help.
- All workers must comply with the Foster Wheeler Environmental Project Rules Handbook, Volume I and Volume II. Refer to the Site-Wide Plan for other rules.
- Workers will park only in designated areas and are reminded to follow traffic rules and laws on the station. In particular, workers are reminded to wear seat belts in all vehicles.
- Workers will wear reflective safety vests at all times when working in the area so that they are readily visible to other workers.
- Use care when driving vehicles over terrain with no roads. It is important to insure that it is safe to drive over a hill and to avoid a sudden drop in terrain.
- Excavations are planned to be 10-feet deep and 2-feet wide. Personnel will not enter these excavations. If the excavations are not closed before the end of the workday, the excavations will be barricaded with reflective markers and with barricade tape.
- Dig-Alert will be called before excavation and drilling. Obtain necessary permits from MCAS El Toro. Complete the Foster Wheeler Environmental excavation permit form. Cal-OSHA does not need to be notified and a Cal-OSHA Activity Notification form is not required since no person is entering the excavation.

11.0 DISPOSAL PROCEDURES

The project should not generate any waste. However, if any waste is generated, contact the PjM regarding the waste management issues.

12.0 EMERGENCY RESPONSE PLAN

Refer to the Site-Wide Plan for emergency response activities. Phone service must be available at all times during the project. Figure 2 shows the location of the evacuation assembly area and the route to the nearest civilian clinic and hospital. Table 2 is the list of emergency contacts and phone numbers. Both Figure 2 and Table 2 must be placed on the dashboard of each vehicle. The evacuation assembly are will be posted with a sign so that all personnel can identify the meeting point.

13.0 TRAINING

No project specific training is required.

14.0 LOGS, REPORTS, AND RECORDKEEPING

Refer to the Site-Wide Plan for requirements.

15.0 FIELD PERSONNEL REVIEW

All personnel are required to be trained in the Site-Wide Plan and this SHSP. Upon completion of this training and review, all project personnel will acknowledge this training by signing a SHSP review form.

16.0 REFERENCES

None.

TABLES

TABLE 1

PERSONAL PROTECTIVE EQUIPMENT

Task	EPA Level	Respiratory Protection	Head	Hand	Clothing	Boots	Face	Eye	Hearing	Additional
Site Setup, Surveys,	D	None required, unless dust exceeds action level	Hard Hat	Leather work gloves, as needed	Work uniform or Tyvek coveralls to keep clean	Steel toe, leather	N/A	Safety glasses	Protection when noise levels exceed 84 dBA	Fall protection for work above 6-foot level or near edges of excavation. Reflective safety vests.
Sampling	D	None required unless PID/FID levels exceed action level	Hard Hat	Leather work gloves, as needed	Work uniform or Tyvek coveralls to keep clean	Steel toe, leather	N/A	Safety glasses	Protection when noise levels exceed 84 dBA	Reflective safety vests.
Excavation	D	None required, unless dust exceeds action level	Hard hat	Leather work gloves, as needed	Work uniform or Tyvek coveralls to keep clean	Steel toe, leather	N/A	Safety glasses	Hearing protection required around heavy equipment unless noise levels are less than 84 dBA.	Reflective safety vests
Backfilling, Site Restoration	D	None required, unless dust exceeds action level	Hard hat	Leather work gloves, as needed	Work uniform or Tyvek coveralls to keep clean	Steel toe, leather	N/A	Safety glasses	Protection when noise levels exceed 84 dBA	

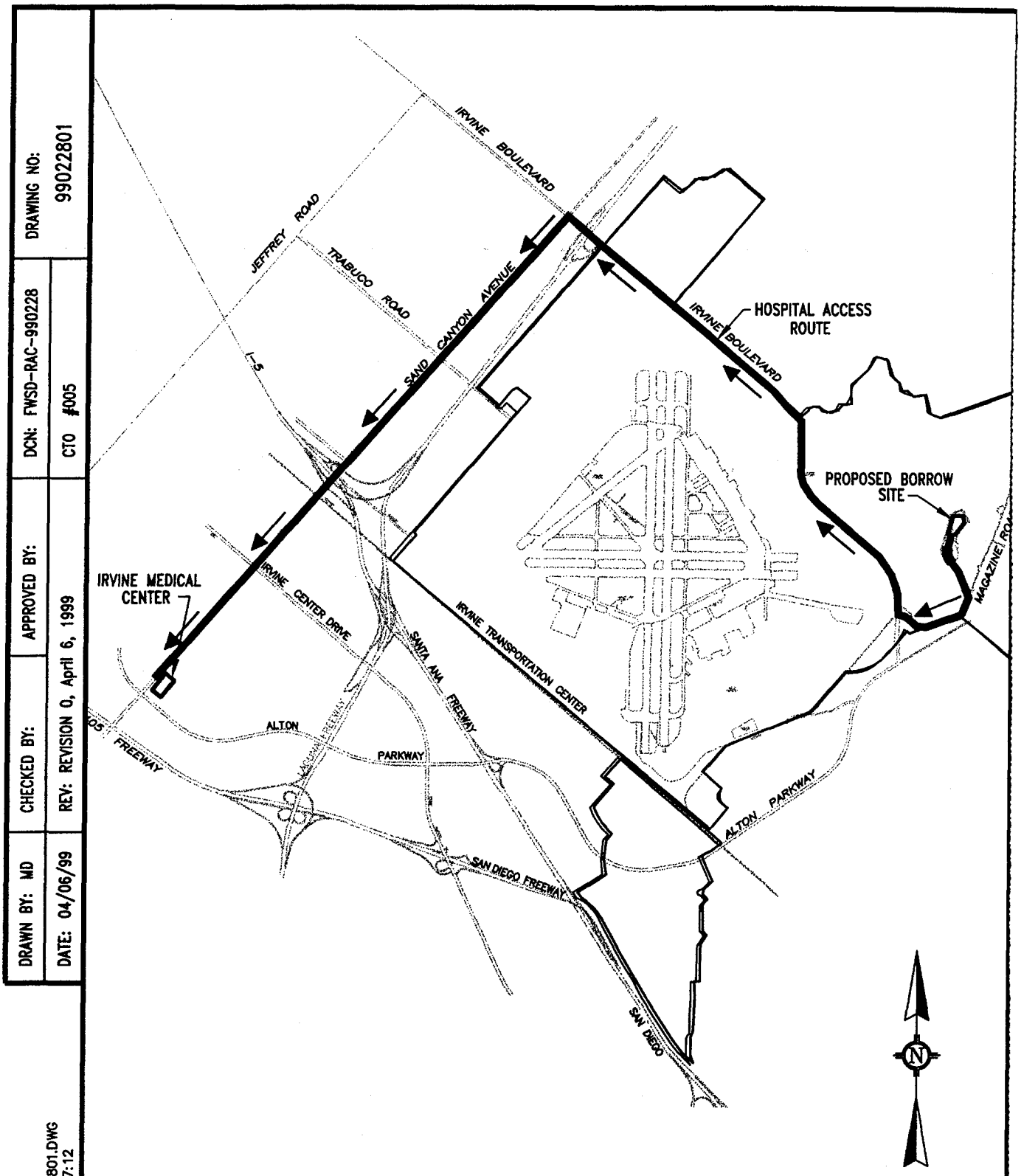
TABLE 2

EMERGENCY INFORMATION

REPORT ALL FIRES, SERIOUS INJURY, OR UNCONTROLLED SPILLS IMMEDIATELY TO 911 USING CELLUAR PHONES

Hospital:	Irvine Medical Center 16200 Sand Canyon Avenue Irvine, CA (949) 753-2000 (949) 753-2250 (24-hour emergency)		
Directions:	Exit the job site toward Irvine Boulevard, turn right on to Irvine Boulevard to reach Sand Canyon Avenue. Turn left at Sand Canyon Avenue, continue west on Sand Canyon Avenue under Interstate 5 until Alton Parkway. The hospital is located on the corner to the left.		
Fire/Police/EMS:	911		
Foster Wheeler Environmental Contacts:	Project Manager William "Dave" Olson, P.E. (619) 234-8696 x209	Project PESM (CIH) Roger Margotto (619) 234-8696 x203 pager: 714-810-3742	Project SHSS David Dirkin (714) 444-5550
RPM:	Dave Demars, (619) 532-4163		
Regional Poison Control Center:	(800) 764-7661		
CHEMTREC:	(800) 424-9300		
National Response Center:	(800) 424-8802		
RCRA Hotline:	(800) 424-9346		

FIGURES



DRAWN BY: MD	CHECKED BY:	APPROVED BY:	DCN: FWSD-RAC-990228	DRAWING NO: 99022801
DATE: 04/06/99	REV: REVISION 0, April 6, 1999		CTO #005	

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Figure 1
SITE LOCATION AND HOSPITAL ROUTE MAP
MCAS, EL TORO, CA

Southwest Division
Naval Facilities Engineering Command

FOSTER WHEELER
ENVIRONMENTAL CORPORATION

DRAWING NO:	99019304
DCN: FWSD-RAC-990193	CTO #005
APPROVED BY:	
CHECKED BY:	REV: REVISION 0, April 6, 1999
DRAWN BY: MD	
DATE: 04/06/99	

APPROXIMATE LIMITS OF BORROW SOURCE

1
1/45'
2/50'
3
2
4/90'
6/30'
5/90'
1
3/50'
3
7/90'
8/90'
9/85'
13/50'
2
10/85'
11/80'
4
12/65'
4
5
14/60'
15/55'
5

APPROXIMATE LIMITS OF BORROW SOURCE

EVACUATION ASSEMBLY AREA

N

100 50 0 100 200

SCALE IN FEET

LEGEND

- ▲ PROPOSED HOLLOW STEM AUGER BORING
- ⊕ PROPOSED BUCKET AUGER BORING
- ⊠ PROPOSED TEST PIT
- 1/45' BORING NUMBER AND TARGET DEPTH
- EVACUATION ASSEMBLY AREA
- ← EGRESS ROUTE

NOTE:

AREA ≅ 500'X800' ≅ 400,000 SF/43,500 ≅ 9 AC

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Figure 2
EVACUATION ASSEMBLY AREA
MCAS, EL TORO, CA

Southwest Division
Naval Facilities Engineering Command

FOSTER WHEELER
ENVIRONMENTAL CORPORATION

ATTACHMENT 1

MATERIAL SAFETY DATA SHEETS

M60050.000463
MCAS EL TORO
SSIC # 5090.3

ATTACHMENT 1
MATERIAL SAFETY DATA SHEETS

THE CONTRACTOR (FOSTER WHEELER) CONFIRMED THAT WHEN CONTAMINANTS DO NOT EXIST AND NO PRODUCTS ARE BEING BROUGHT INTO THE FIELD, THERE WOULD BE NO MATERIAL SAFETY DATA SHEETS.

QUESTIONS MAY BE DIRECTED TO:

DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676

ATTACHMENT 2

ACTIVITY HAZARD ANALYSES (AHAs)

HAZARD ANALYSIS #1

Activity: Mobilization and Site Setup **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
Set up Work Area	Potential exposure to chemical hazards.	• Identify all chemical hazards and receive training (MSDS) regarding safe handling of chemicals. Copies of all MSDS will be filed at Site by SHSS.
	Noise Exposure.	• Hearing protection is required when sound levels exceed 84 dBA continuously.
	Slip, trip and fall hazards.	• Work areas shall be visually inspected and slip, trip, and fall hazards shall be marked, barricaded, or eliminated, if feasible. • Proper illumination shall be maintained in all work areas. • Refer to EHS Procedure 3-8 "Fall Protection".
	Sharp objects/punctures.	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or other objects. When possible sharp edges will be blunted. • Workers should not stand or walk on debris piles.
	Strains from manually moving materials and equipment.	• Personnel shall be directed to use proper lifting techniques such as keeping the back straight, lifting with the legs, limiting twisting, and getting help in moving bulky/heavy materials and equipment. • Use of hand truck shall be encouraged. • Employees will not lift more than 50 pounds. • Refer to EHS Procedure 3-1 "Ergonomics".

HAZARD ANALYSIS #1

Activity: Mobilization and Site Setup **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
	Exposure to extreme temperatures.	• Monitor for heat and cold stress in accordance with EHS Procedure 4-6 "Temperature Extremes". • Provide fluids and rest breaks during warm weather .
Set up Work Area (Continued)	Eye Hazards.	• Safety glasses will be the minimum required eye protection for all work areas.
	Struck by or against heavy equipment.	• Wear high visibility reflective vests when exposed to vehicle traffic. • Make eye contact with operators before approaching equipment. • Understand and review posted hand signals.
	Power and hand tools.	• All tools will be inspected before each use. • Personnel shall be trained in the proper use of hand tools.
	Material handling.	• Identify and avoid pinch points. • Maintain communication with others involved in material handling. • Use appropriate PPE.

Equipment to be Used	Inspection Requirements	Training Requirements
Heavy equipment, hand tools	Daily and before use.	• Only trained equipment operators may operate heavy equipment; only Department of Motor Vehicles (DMV)-licensed personnel will operate trucks. • Specific training for power tools, hand tools, and electrical safety.

Notes:
PPE - personal protective equipment.

HAZARD ANALYSIS #2

Activity: Soil Sampling **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
Collecting soil samples	Back Strains.	• Follow EHS Procedure 3-1 "Ergonomics". • Avoid prolonged repetitive motion. Rotate job tasks with other workers. • Use pivot and shift technique when shoveling soil into buckets. • Get help or use mechanical lifting devices for heavy loads.
	Slips, trips, and falls.	• Maintain good housekeeping as per EHS Procedure 3-8 "Fall Protection". • Mark or remove all identified trip and slip hazards. • Maintain proper illumination in work areas.
	Strains from use of tools such as shovels and hand augers.	• Inspect all tools for damage before use. • Do not use damaged tools "out of service" and tag "out of service". • Maintain steady pace and follow the rest periods given on the job. • Use appropriate tools for the task and maintain in good condition.
Drill for Soil Samples	Noise from drilling rig.	• Wear hearing protection while operating rig.
	Pinch Points.	• Avoid placing hands in places close to moving machinery. • Wear gloves, as appropriate.

HAZARD ANALYSIS #2

Activity: Soil Sampling **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
Drill for Soil Samples (Continued)	Underground utilities.	• Insure soil boring locations are clear of underground utilities. • Call "Dig Alert" (Note: Normally, Dig Alert acknowledges the call but does not respond to activities on military bases. However, there have been exceptions. It is always better to be "safe").

Equipment to be Used	Inspection Requirements	Training Requirements
Hand tools	Daily and before use.	• Specific training for hand tools.
Drilling Rig	Daily , before and during use.	• Specific training for operators.
Backhoe, hand tools, high-pressure water washer	Daily and before use.	• Only trained equipment operators may operate heavy equipment; only Department of Motor Vehicles (DMV)-licensed personnel will operate trucks. • Specific training for power tools, hand tools, and electrical safety.

Notes:
PPE - Personal protective equipment.

HAZARD ANALYSIS #3

Activity: Soil Excavation and Backfilling **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
Excavation	Contact with underground utilities.	• Physically verify the location and depth of existing utilities prior to starting excavation through geophysical and utility survey. • Call Underground Services Alert or Dig-Alert prior to any disturbance of ground. • Scan the excavation area with electromagnetic and sonic equipment and mark ground where existing underground utilities are discovered. • Protect all existing utilities during excavation. • Perform excavation within 18 inches of existing utilities by hand.
	Struck by or against heavy equipment.	• Wear reflective warning vests when exposed to vehicular traffic. • Avoid equipment swing areas. • Make eye contact with operators before approaching equipment. • Understand and review posted hand signals.
	Exposure to chemical contaminants (Not anticipated).	• Conduct air monitoring for contaminants as excavation activities proceed as specified in the SHSP.
	Excavation hazards.	• Follow EHS Procedure 6-2 "Excavation and Trenching". • Ensure no person enters the trenches. • Use diversion ditches, dikes, or other means to prevent surface water from entering an excavation and to provide good drainage of the area adjacent to the excavation. • Excavations must be closed at the end of the day. Otherwise, excavation must be barricaded with reflective barriers and barricade tape. • Maintain eye contact with operators. Personnel must wear visible vests. • Avoid climbing on berms and stockpiles. • Handle soil carefully to avoid dust generation.

HAZARD ANALYSIS #3

Activity: Soil Excavation and Backfilling **Analyzed By/Date:** Roger Margotto 4/8/99 **Reviewed By:** Roger Margotto, CIH

Principal Steps	Potential Hazards	Recommended Controls
Backfilling	Strains from use of tools, such as shovels.	• Maintain steady pace when using tools and take adequate rest periods. • Use appropriate tools for the task and maintain tools in good condition.
	Heavy equipment hazards.	• Equip all heavy equipment on this project with rollover protection systems and backup alarms. • Stay clear of moving equipment unless necessary. • Inspect all equipment daily before use to ensure proper maintenance is being performed. • Make eye contact with operator, heavy equipment has right-of-way.
	Struck by or against heavy equipment or trucks.	• Establish and follow a traffic control plan. • Wear reflective warning vests when exposed to vehicular traffic. • Avoid equipment swing areas, and designated traffic routes. • Make eye contact with operators before approaching equipment or trucks. • Understand and review posted hand signals.

Equipment to be Used	Inspection Requirements	Training Requirements
Heavy equipment	Daily or before use.	• Only trained equipment operators may operate heavy equipment; only Department of Motor Vehicles-licensed personnel will operate vehicles. • Specific training for power tools, hand tools, and electrical safety.

ATTACHMENT 3

FORMS

SITE SAFETY BRIEFING FORM

SITE SAFETY BRIEFING FORM

Site: _____

Date: _____ **Time:** _____

OFS No. _____

Task: _____ **Health/Safety Officer:** _____

Person Providing Briefing: _____

TOPICS:

- Site SHSP
- Chemical Hazards
- Equipment Hazards
- Electrical Hazards
- Heat Stress
- Personal Decontamination
- Personal Hygiene
- Employee Rights/Responsibilities
- Hazard Evaluations
- Emergency Response Procedures

PERSONS IN ATTENDANCE:
(Name/Organization)

_____
_____
_____
_____
_____
_____
_____

PERSONS IN ATTENDANCE:
(Name/Organization)

_____
_____
_____
_____
_____
_____
_____

NOTES/COMMENTS:

_____
_____
_____
_____
_____

MEDICAL DATA SHEET

MEDICAL DATA SHEET

Project: _____

Name: _____

Home Telephone Number: _____

Home Address: _____

Age: _____ **Height:** _____ **Weight:** _____ **Blood Type:** _____

Name of Emergency Contact: _____

Telephone Number of Emergency Contact: _____

Drug or Other Allergies: _____

Particular Sensitivities: _____

Do you wear contact lenses? _____

Provide a checklist of previous illness or exposures to hazardous chemicals: _____

_____

What medications are you presently using? _____

_____

Do you have any medical restrictions? If yes, explain: _____

_____

Name, address, and phone number of personal physician:

_____

_____

FIELD CHANGE NOTIFICATION REQUEST FORM

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FIELD CHANGE NOTIFICATION REQUEST FORM

FIELD CHANGE REQUEST NO. _____

Project: _____

Charge Number: _____

Project Location: _____

Description of Change: _____

_____

_____

_____

Reason for Change: _____

_____

_____

_____

Recommended Disposition: _____

_____

_____

_____

Site Manager: _____
Signature Date

Disposition: _____

_____

_____

Project Safety and Health Manager: _____
Signature Date

DISTRIBUTION: Project Health and Safety Manager: _____

Site Health and Safety Officer: _____

Quality Assurance Representative: _____

Field Operation Leader: _____

ACCIDENT/INCIDENT REPORT FORMS

FOSTER WHEELER ENVIRONMENTAL CORPORATION
INCIDENT REPORT AND INVESTIGATION

TYPE OF INCIDENT - CHECK ALL THAT APPLY

☐ INJURY/ILLNESS ☐ VEHICLE DAMAGE ☐ PROPERTY DAMAGE ☐ FIRE
☐ SPILL ☐ AIR EMISSION ☐ HIGH LOSS POTENTIAL ☐ OTHER

GENERAL INFORMATION

PROJECT/OFFICE: _____ REPORT #: _____
DATE OF INCIDENT: ___/___/___ MILITARY TIME: ____:____ DAY OF WEEK: _____
SUPERVISOR ON DUTY: _____ AT SCENE OF INCIDENT: ☐ YES ☐ NO
LOCATION OF INCIDENT: _____
WEATHER CONDITIONS: _____ ADEQUATE LIGHTING AT SCENE ☐ YES ☐ NO ☐ N/A

DESCRIBE WHAT HAPPENED

AFFECTED EMPLOYEE INFORMATION

NAME: _____ FWENC EMPLOYEE: ☐ YES ☐ NO
HOME ADDRESS: _____
SOCIAL SECURITY #: _____ HOME PHONE #: _____
JOB CLASSIFICATION: _____ YEARS IN JOB CLASSIFICATION: _____
NUMBER OF HOURS WORKED PRIOR TO INCIDENT: _____ YRS WITH FWENC: _____ AGE _____
DID INCIDENT RELATE TO ROUTINE TASK FOR JOB CLASSIFICATION: ☐ YES ☐ NO

INJURY/ILLNESS INFORMATION

NATURE OF INJURY OR ILLNESS: _____

OBJECT/EQUIPMENT/SUBSTANCE CAUSING HARM: _____
FIRST AID PROVIDED: ☐ YES ☐ NO IF YES, WHERE WAS IT GIVEN: ☐ ON SITE ☐ OFF SITE
IF YES, WHO PROVIDED FIRST AID: _____
WILL THE INJURY/ILLNESS RESULT IN: ☐ RESTRICTED DUTY ☐ LOST TIME ☐ UNKNOWN

REPORT #:_____

MEDICAL TREATMENT INFORMATION

WAS MEDICAL TREATMENT PROVIDED?: ☐ YES ☐ NO

IF YES, WAS MEDICAL TREATMENT PROVIDED: ☐ ON SITE ☐ DR'S OFFICE ☐ HOSPITAL

NAME OF PERSON(S) PROVIDING TREATMENT: _____

ADDRESS WHERE TREATMENT WAS PROVIDED: _____

TYPE OF TREATMENT: _____

VEHICLE AND PROPERTY DAMAGE INFORMATION

VEHICLE/PROPERTY DAMAGED: _____

DESCRIPTION OF DAMAGE: _____

SPILL AND AIR EMISSIONS INFORMATION

SUBSTANCE SPILLED OR RELEASED: _____ IF WASTE, PROFILE #: _____

ESTIMATED QUANTITY/DURATION: _____ IS THIS AN RQ: ☐ YES ☐ NO ☐ UNKNOWN

RESPONSE ACTION TAKEN: _____

ADDITIONAL INFORMATION (e.g., witnesses)

NOTIFICATIONS

NAME(S) OF FWENC PERSONNEL NOTIFIED: _____

CLIENT NOTIFIED: ☐ YES ☐ NO BY WHOM: _____

PERSONS PREPARING REPORT

EMPLOYEE'S NAME: (PRINT) _____ SIGN: _____

EMPLOYEE'S NAME: (PRINT) _____ SIGN: _____

SUPERVISORS NAME: (PRINT) _____ SIGN: _____

NOTE: *Supervisor to forward a copy of incident to immediate supervisor and H&S representative ASAP.*

REPORT #:_____

INVESTIGATION REPORT

DATE OF INCIDENT: _____ DATE OF INVESTIGATION REPORT: _____

INCIDENT COST: ESTIMATED: $ _____ ACTUAL: $ _____

OSHA RECORDABLES: ☐ YES ☐ NO # RESTRICTED DAYS _____ # DAYS AWAY FROM WORK _____

CAUSE ANALYSIS

IMMEDIATE CAUSES – WHAT ACTIONS AND CONDITIONS CONTRIBUTED TO THIS EVENT? (SEE EXAMPLES NEXT PAGE)

BASIC CAUSES – WHAT SPECIFIC PERSONAL OR JOB FACTORS CONTRIBUTED TO THIS EVENT? (SEE EXAMPLES NEXT PAGE)

ACTION PLAN

REMEDIAL ACTIONS – WHAT HAS AND/OR SHOULD BE DONE TO CONTROL THE CAUSES LISTED? INCLUDE MANAGEMENT PROGRAMS (SEE ATTACHED LIST) FOR CONTROL OF INCIDENTS IF APPLICABLE.

ACTION	PERSON RESPONSIBLE	TARGET DATE

PERSONS PERFORMING INVESTIGATION

INVESTIGATOR'S NAME: (PRINT) _____ SIGN: _____ DATE: _____

INVESTIGATOR'S NAME: (PRINT) _____ SIGN: _____ DATE: _____

INVESTIGATOR'S NAME: (PRINT) _____ SIGN: _____ DATE: _____

MANAGEMENT REVIEW

PROJECT OFFICE MANAGER: (PRINT) _____ SIGN: _____

COMMENTS: _____

H&S MANAGER: (PRINT) _____ SIGN: _____

COMMENTS: _____

***NOTE:** Attach additional information as necessary.*

EXAMPLES OF IMMEDIATE CAUSES

SUBSTANDARD ACTIONS	SUBSTANDARD CONDITIONS
1. OPERATING EQUIPMENT WITHOUT AUTHORITY	1. GUARDS OR BARRIERS
2. FAILURE TO WARN	2. PROTECTIVE EQUIPMENT
3. FAILURE TO SECURE	3. TOOLS, EQUIPMENT, OR MATERIALS
4. OPERATING AT IMPROPER SPEED	4. CONGESTION
5. MAKING SAFETY DEVICES INOPERABLE	5. WARNING SYSTEM
6. REMOVING SAFETY DEVICES	6. FIRE AND EXPLOSION HAZARDS
7. USING DEFECTIVE EQUIPMENT	7. POOR HOUSEKEEPING
8. FAILURE TO USE PPE PROPERLY	8. NOISE EXPOSURE
9. IMPROPER LOADING	9. EXPOSURE TO HAZARDOUS MATERIALS
10. IMPROPER PLACEMENT	10. EXTREME TEMPERATURE EXPOSURE
11. IMPROPER LIFTING	11. ILLUMINATION
12. IMPROPER POSITION FOR TASK	12. VENTILATION
13. SERVICING EQUIPMENT IN OPERATION	13. VISIBILITY
14. UNDER INFLUENCE OF ALCOHOL/DRUGS	
15. HORSEPLAY	

EXAMPLES OF BASIC CAUSES

PERSONAL FACTORS	JOB FACTORS
1. CAPABILITY	1. SUPERVISION
2. KNOWLEDGE	2. ENGINEERING
3. SKILL	3. PURCHASING
4. STRESS	4. MAINTENANCE
5. MOTIVATION	5. TOOLS/EQUIPMENT
	6. WORK STANDARDS
	7. WEAR AND TEAR
	8. ABUSE OR MISUSE

MANAGEMENT PROGRAMS FOR CONTROL OF INCIDENTS

1. LEADERSHIP AND ADMINISTRATION	10. HEALTH CONTROL
2. MANAGEMENT TRAINING	11. PROGRAM AUDITS
3. PLANNED INSPECTIONS	12. ENGINEERING CONTROLS
4. TASK ANALYSIS AND PROCEDURES	13. PERSONAL COMMUNICATIONS
5. TASK OBSERVATION	14. GROUP MEETINGS
6. EMERGENCY PREPAREDNESS	15. GENERAL PROMOTION
7. ORGANIZATION RULES	16. HIRING AND PLACEMENT
8. ACCIDENT/INCIDENT ANALYSIS	17. PURCHASING CONTROLS
9. PERSONAL PROTECTIVE EQUIPMENT	

NOTIFICATION REMINDER

Fatalities or hospitalization (admittance) of three or more individuals requires notification to OSHA within 8 hours. Contact your Project HS Manager to make the notification. If you cannot contact, the senior operations person on site should make the notification.