DEPARTMENT OF THE NAVY – NAVFAC SOUTHWEST
Naval Facilities Engineering Command
1220 Pacific Highway, San Diego, California 92132-5190

FINAL

WORK PLAN

PRELIMINARY ASSESSMENT/SITE INSPECTION
INSTALLATION RESTORATION PROGRAM SITE 75
AGRICULTURAL WELL KAYO-SB

NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

June 30, 2011

Contract No.: N62473-09-D-2613
Task Order No.: 0018
Document Control No.: AMJV-2613-0018-0006

Prepared by:

Accord MACTEC Joint Venture
1231 E Dyer Road, Suite 265
Santa Ana, CA 92705

and

Richard Brady and Associates
3710 Ruffin Road
San Diego, California 92123

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Prepared by:

Fred Essig, P.G. 8407 Date 6/30/2011
BRADY Project Manager

Reviewed by:

Timothy Shields, P.G. 8727 Date 6/30/2011
BRADY Technical Reviewer

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EXECUTIVE SUMMARY

The project team of the Accord MACTEC Joint Venture (AMJV), which is comprised of Accord Engineering, Inc. (AEI) and MACTEC Engineering and Consulting, Inc. (MACTEC) and Richard Brady and Associates (BRADY) are supporting Naval Facilities Engineering Command (NAVFAC) Southwest, in the execution of a Preliminary Assessment (PA) and Site Inspection (SI) at Installation Restoration Program Site 75 (Site 75), Naval Weapons Station (NAVWPNSTA) Seal Beach, Seal Beach, California, issued under Contract No. N62473-09-D-2613, Delivery Order No. 0018

The Department of the Navy is the lead agency on this project, and the lead regulatory agency is the California Regional Water Quality Control Board, Santa Ana Region, with support from the California Department of Toxic Substances Control.

Site 75, at the location of former agricultural well KAYO-SB, is located on the eastern side of the base approximately 1,300 feet south of Bolsa Avenue and approximately 800 feet west of Bolsa Chica Road. Well KAYO-SB was used as an irrigation source for a portion of NAVWPNSTA Seal Beach that was leased for crop production (Figures 1 and 2).

The objective of this PA/SI is to evaluate whether or not the Volatile Organic Compounds (VOCs) previously discovered in groundwater from former agricultural well KAYO-SB, located on U.S. Navy (Navy) property, originate from a source within the Navy property line. Additionally, this investigation is designed to provide characterization data to better understand the nature and local extent of contamination, assess the exposure pathways to human health and the environment, and refine the conceptual site model for Site 75 sufficient to determine if there is a need for further investigation or cleanup.

Discovery of groundwater contamination occurred from a well-water sample collected in September 2004 by the Orange County Water District (OCWD). Analytical results from well KAYO-SB at that time showed the following VOC impact:

- trichloroethene 25.3 micrograms per liter (µg/L)
- 1,1-dichloroethane 13.8 µg/L
- 1,1-dichloroethene 30.3 µg/L
- tetrachloroethene 1.8 µg/L
- 1,1,1-trichloroethane at trace levels.

Based on the OCWD sampling results, the DoN immediately tagged out well KAYO-SB and properly abandoned the well in 2006 to eliminate human exposure to the contaminated groundwater and to prevent any future use of the well for crop-irrigation purposes.

The scope of work included in this work plan consists of installation of an array of seven monitoring wells designed to sample transmissive strata of interest. Key to the well design will be dynamic integration of the near real-time VOC and hydrogeologic data collected during the drilling phase for well-design use prior to the actual well installation.

The completed wells will yield groundwater elevation data and groundwater laboratory analytical results. These data will be used to address the main investigative objective concerning the source of the groundwater contamination at Site 75. Additionally, these data may allow identification of potential responsible parties.

Each of the seven planned wells will be fitted with dedicated well pumps configured for low-flow groundwater sampling. The groundwater samples from the completed wells will be analyzed by a fixed-based laboratory for VOCs by U.S. EPA Method 8260B. Laboratory data generated during this investigation will also be validated by a third-party reviewer following U.S. EPA and NAVFAC requirements and guidelines.

The overall quality of tasks performed for this assessment will be assured by conformance to protocols established for sample collection, analytical procedures, and data management. A summary of the quality assurance/quality control (QA/QC) protocols that will be implemented throughout the investigation is provided in detail in the Sampling and Analysis Plan (SAP) provided as Appendix A. QA objectives and detail regarding data management, verification, and validation are also provided in the SAP.

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ACRONYMS AND ABBREVIATIONS

AEI	Accord Engineering, Inc.
APP	Accident Prevention Plan
AMJV	Accord MACTEC Joint Venture
bgs	below ground surface
BRADY	Richard Brady & Associates
CFR	Code of Federal Regulations
COPC	chemicals of potential concern
CSM	conceptual site model
DCA	dichloroethane
DCE	dichloroethene
DoN	Department of the Navy
DQO	data quality objective
DSITMS	direct sample ion trap mass spectrometry
DTSC	California Department of Toxic Substances Control
GET	groundwater extraction and treatment
IDW	investigational derived waste
MACTEC	MACTEC Engineering and Consulting, Inc.
MCL	maximum contaminant level
µg/L	micrograms per liter
MSL	mean sea level
Navy	U.S. Navy
NAVFAC	Naval Facilities Engineering Command
NAVWPNSTA	Naval Weapons Station
NR	not recorded
OCHCA	Orange County Health Care Agency
OCHD	Orange County Health Department
OCWD	Orange County Water District
PA/SI	Preliminary Assessment/Site Inspection
PCE	tetrachloroethene
QA	quality assurance
QC	quality control
RWQCB	Regional Water Quality Control Board
SAP	sampling and analysis plan
Site 75	Installation Restoration Program Site 75
SSHP	site safety and health plan
TCA	trichloroethane
TCE	trichloroethene
UFGU	Upper Fine Grained Unit
UST	underground storage tank
VOC	volatile organic compound

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1.0 INTRODUCTION

This work plan describes a Preliminary Assessment/Site Investigation (PA/SI) that will be conducted at Installation Restoration Program Site 75 (Site 75), Naval Weapons Station (NAVWPNSTA) Seal Beach, Seal Beach, California. This document was prepared by the Accord MACTEC Joint Venture (AMJV) which is comprised of Accord Engineering, Inc. (AEI) and MACTEC Engineering and Consulting, Inc. (MACTEC) and Richard Brady & Associates (BRADY) for the Department of the Navy (DoN), Naval Facility Engineering Command Southwest under contract N62473-09-D-2613, Delivery Order Number 0018.

The DoN is the lead Federal agency on this project. The lead regulatory agency is the California Department of Toxic Substances Control (DTSC), with support from the California Regional Water Quality Control Board, (RWQCB), Santa Ana Region.

Agricultural well KAYO-SB (Figures 1 and 2), drilled in 1926 to 320 feet below ground surface (bgs), was used as an irrigation source for a portion of NAVWPNSTA Seal Beach that was leased for crop production. A well water sample from KAYO-SB was collected in September of 2004 by the Orange County Water District (OCWD). Additional groundwater samples were collected during the destruction of well KAYO-SB in 2006. Analytical results (Table 1) from well KAYO-SB showed dissolved volatile organic compound (VOC) concentrations of the following chemicals of potential concern (COPCs): 1,1,l-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), cis-1-2 dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride.

1.1 Scope of Work

The scope of work is matched to the objectives of this PA/SI. The objective of this investigation is to evaluate whether or not the PCE, TCE, DCE, TCA, DCA, and/or VC previously discovered in groundwater from former agricultural well KAYO-SB, located on Navy (U.S. Navy) property, originate from a source within the Navy property line. Additionally, this investigation is designed to provide characterization data to assess the exposure pathways to human health and the environment, and update the conceptual site model (CSM) for Site 75 sufficient to determine if there is a need for further investigation or cleanup.

The scope of work for this investigation includes the following:

- Using continuous coring sonic drilling techniques and logging by a Professional Geologist to identify hydraulically transmissive strata.
- Using high density real time onsite VOC screening by EPA Method 8265 -- direct sample ion trap mass spectrometry (DSITMS).
- Having a systematic planning meeting during the field operations to design monitoring well screened intervals using the drilling logs and DSITMS data.
- Installing one monitoring well near the location of former well KAYO-SB.

- Installing pairs of monitoring wells (targeting two depths) at two other locations on NAVWPNSTA Seal Beach planned to target two depths with the highest concentrations.
- Installing additional monitoring wells to the east of KAYO-SB, off of NAVWPNSTA Seal Beach, planned to target the depth with the highest concentration.
- Depths and distribution of wells will be optimized and finalized based on real-time data.
- Performing two groundwater sampling events of the seven new wells for fixed base laboratory analysis of VOCs by EPA Method 8260.
- Using groundwater depth measurements and fixed base analytical data to evaluate hydraulic gradient(s) and VOC concentration gradient.
- Presenting the updated conceptual site model graphically using, at a minimum, maps and cross sections or fence diagrams showing contaminant concentrations and geologic data and interpretations.

1.2 Work Plan Organization

This work plan describes the site background and environmental setting, previous investigations, conceptual site model, and the proposed technical approach.

The Sampling and Analysis Plan (SAP) is provided as Appendix A. The SAP provides a rationale for field sampling activities and, describes and establishes consistent field sampling procedures. The SAP establishes data gathering, handling, and documentation methods that are precise, accurate, representative, complete, and comparable to meet quality control (QC) requirements and data quality objectives (DQOs) for this project.

A site-specific Accident Prevention Plan (APP) and Site Safety and Health Plan (SSHP) are provided as Appendix B. These documents contain health and safety procedures required by EM 385-1-1 (United States Army Corps of Engineers, 2008) and Title 29 Code of Federal Regulations (CFR) 1910.120 to address worker protection against contamination and physical hazards and to specify site air monitoring, accident reporting, and emergency procedures.

The results of an environmental records search, including an Environmental FirstSearch Sites Summary Report and a GeoTracker Listing, are provided in Appendix C.

1.3 Work Plan Strategy

This Work Plan was developed to evaluate whether or not the VOC plume is migrating into Site 75 from a non-Navy source. To meet this goal, the investigation strategy includes historical research in the vicinity and an investigation of the local hydrogeology and VOC concentration gradient.

1.4 Triad Approach

The EPA's Triad approach is a practice that explicitly manages decision uncertainty using systematic planning, real-time technologies, and a dynamic work strategy. The decision uncertainty that Triad will manage in this investigation is: *What are the appropriate depths that should be targeted for sampling with groundwater monitoring wells?*

Based on available data, a CSM has been developed depicting a dissolved VOC contaminant plume migrating beneath Site 75 from an unknown source. Former Well KAYO-SB penetrated a sequence of strata including hydrologically transmissive intervals and interbedded finer grained intervals more resistant to groundwater flow (Figure 3). Results from non-Navy sites to the east of Site 75 show multiple transmissive intervals with different groundwater flow directions (Figure 4). It is not certain which water bearing unit(s) contain the contaminants at Site 75.

Planning to date for this investigation has resulted in a proposed work strategy involving real-time VOC screening analyses using EPA Method 8265 and concurrent examination of the continuous core. The Triad investigation strategy will allow the VOC concentration data and stratigraphy at each boring location to be understood before the well is installed. Screening data will be distributed to the project team on a daily basis. The well design will be finalized in the field based on the real time data, and will be approved by available project team members. This method will help ensure the intervals of interest will be identified and the wells designed to sample the intervals.

Ultimately, the groundwater gradient data and groundwater analytical data from the completed wells is expected to show from what direction the contaminate plume is migrating.

1.5 Historical Research and Systematic Planning

The historical data review performed for this Work Plan focused on local businesses or industrial processes where previous chemical usage or other documentation showed contaminants common to the dissolved VOCs found at well KAYO-SB.

Historical research was conducted using data, maps, and documents targeting current and historical business in the vicinity that could be a source for a migrating VOC plume. Records were provided by Environmental FirstSearch, a specialized environmental search firm, in addition to Navy supplied documents and the search effort through the California State Water Resources Control Board's data management system, GeoTracker.

Historical findings are summarized in this Work Plan in Section 2.4.

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2.0 BACKGROUND AND ENVIRONMENTAL SETTING

This section summarizes background information associated with NAVWPNSTA Seal Beach Site 75 including site description and history, physical setting, previous investigations, geology and hydrogeology. This information provides the basis for development of the preliminary CSM presented in Section 3.

2.1 Facility Location and Description

The NAVWPNSTA Seal Beach is located in the northwest corner of Orange County, approximately 20 miles south of Los Angeles, California (Figure 1). Comprised of 5,256 acres, NAVWPNSTA Seal Beach is a Navy weapons and munitions loading, storage, and maintenance facility. NAVWPNSTA Seal Beach consists of 230 buildings and 128 ammunition magazines providing over 500,000 square feet of ammunition storage space. NAVWPNSTA Seal Beach has been operated by the Navy and its contractors since its inception in 1944. NAVWPNSTA Seal Beach is located in the City of Seal Beach. Nearby communities include the cities of Huntington Beach, Westminster, Los Alamitos, and Garden Grove (BRADY, 2009).

2.2 Historical Property Use and Operations

Site 75 is associated with a former agricultural well KAYO-SB located near the eastern boundary of NAVWPNSTA Seal Beach in an unimproved area of the base. Well KAYO-SB was used as an irrigation source for a portion of NAVWPNSTA Seal Beach leased out for crop production.

Information reviewed for this Work Plan did not reveal any prior site history associated with chemical storage, disposal, release, or generation at Site 75 in connection with the COPCs detected in groundwater collected from KAYO-SB.

2.3 Previous Investigations and Site History

Well KAYO-SB was originally drilled to 320 feet bgs in 1926 and was cased to 299 feet bgs. The well was originally screened (perforated) at three intervals: from 203 to 208 feet bgs, 233 to 240 feet bgs, and 297 to 299 feet bgs (Tetra Tech 2007). No documentation has been found regarding the materials used to fill the annular space, but considering the age and purpose of the well, it is reasonable to assume that most of the annular space was filled with a gravel or sand filter pack, and the near surface annular space filled with bentonite and/or concrete.

According to Haley and Aldrich (2005), on September 23, 2004, the OCWD collected a groundwater sample from irrigation well KAYO-SB. The sample was analyzed by the OCWD laboratory for volatile organic compounds (VOCs) (including fuel oxygenates) using EPA Method 524.2; 1,4-dioxane using a method identified as 14DIOX on the OCWD laboratory reports; and perchlorate using Method X1-312.0.

Analytical results from OCWD sampling showed concentrations of TCE, 1,1-DCA, 1,l-DCE, and PCE. 1,1,1-TCA was detected at trace levels.

Based on the OCWD sampling results, the DoN immediately tagged out well KAYO-SB and properly abandoned the well in 2006to prevent receptor contact related to irrigation water or

agricultural production (Tetra Tech EC, Inc., 2007). The well was abandoned under the supervision of the Orange County Health Department (OCHD) in November 2006. The abandonment procedure included video logging, groundwater sampling, grouting the well casing, and capping the well casing.

Analytical data from the abandonment sampling event in well KAYO-SB is summarized in Table 1.

According to a 1994 video log report, the well was originally constructed with 16-inch-diameter steel casing from ground surface to 200 ft bgs and 14-inch-diameter steel casing below 200 ft bgs. After the video log was complete, a 12-inch-diameter steel inner casing was installed in the well and the annular space between the inner and the outer casing was backfilled with pea gravel. The inner casing was perforated beginning at approximately 200 feet bgs.

The well was destroyed in 2006. The pump motor, pump, and approximately 240 feet of 6-inch-diameter steel discharge pipe were removed. The pipe segments contained an oily residue that was likely present due to past application of lubricating oil. The day after the pump and pipe were removed, the well was tested for the presence of oil on the groundwater surface. None was found. A second video log was performed, showing that the inner casing was screened from 208.6 ft bgs to refusal on silt and sediments at 286.7 feet bgs. After the video log was completed, three groundwater samples were collected from depths of 208, 240, and 280 feet bgs using low-flow sampling. Due to the geometry of the well casings and filter pack, there is uncertainty about the formation water depths that these samples represent. The groundwater analytical results are summarized in Table 1; (Tetra Tech EC, Inc., 2007).

2.4 Historical Surrounding Property Use and Operations

Agricultural well KAYO-SB was located in a largely unimproved section of NAVWPNSTA Seal Beach, approximately 1,300 feet south of Bolsa Avenue and approximately 800 feet west of the eastern boundary of NAVWPNSTA Seal Beach formed by Bolsa Chica Road. The area to the east of Bolsa Chica Road is mixed residential and industrial use.

The following is a review and summary of documentation from the Environmental FirstSearch Sites Summary Report, a Geotracker review, and government supplied information. The following sites are discussed because they have some history of use or other documentation of COPCs common to those found in well KAYO-SB. A summary of the data review is presented in Table 1 and on Figure 4.

Kaymore Plating/MASCO, 15751 Chemical Lane, Huntington Beach

Kaymore Plating/MASCO was an electroplating facility from 1979 to 1989. The site is located approximately 0.6 mile southeasterly from the site at 15751 Chemical Lane, Huntington Beach, CA.

Sediments underlying the site were described by Black Rock Geosciences in 1998 as silty sand to approximately 10 feet, overlying silty clay to approximately 24 feet bgs. The groundwater

was reported under pressure and initially observed at 24 feet bgs. The reported groundwater gradient at the site is to the southwest.

This site is listed as closed case SLT8R0463931 on Geotracker. According to the Case Closure letter from the Santa Ana RWQCB, environmental investigations at this site were initiated in 1996 culminating in a case closure letter in June 1998. Initial investigations concluded there was some impact to soil and groundwater due to chlorinated solvents including 1,1-DCE and PCE. Subsequent investigations included a 1997 direct-push soil and groundwater investigation where soil and groundwater samples were taken from 10 to 28 feet bgs. In 1998, three groundwater wells were installed and an offsite groundwater and soil sampling event at four down gradient locations using direct-push array technology was performed to evaluate offsite migration.
The highest concentrations in micrograms per liter (µg/L) of dissolved VOCs for this site found during this historical review are as follows (for reference, the State of California Maximum Contaminant Level (MCL) is also shown):

Kaymore Maximum and Residual Data (Black Rock Geosciences 1998)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	46	330	N/A	21	41	39
Date	4/15/98	12/10/96	N/A	4/15/98	4/15/98	4/15/98
Depth (ft bgs)	24-28	Approx. 24	N/A	24-28	24-28	24-28
Well/Sample	H-4-W	SB03	N/A	H-4-W	H-4-W	H-4-W

The maximum historical data are also the most recent (residual) data, except for 1,1-DCE which was 78 µg/L in H-4-W on 4/15/98. The results from 4/15/98 sampling were from a hydropunch investigation that resulted in a closure letter from the CRWQCB on 6/1/98.

Boeing, 5301 Bolsa Avenue, Huntington Beach, California

The Boeing site is approximately 0.5 mile from the site to the northeast and occupies approximately 150 acres. The area is relatively flat and has a ground surface elevation approximately 18 feet above mean sea level (MSL). The site is still used as an aeronautical engineering and manufacturing facility. The Boeing site is listed as open and in remediation on Geotracker (#T0605900184).

Records from the Boeing environmental work show the deepest subsurface investigation in the vicinity as well as the most detailed data regarding geology, which is expected to be similar the geology we will find near KAYO-SB. Halley & Aldrich (2009c), described four, shallow, water-bearing intervals identified beneath the Boeing site. These four intervals are within the Recent Alluvium and referred to collectively as the shallow water-bearing zones. Individually, these zones are identified as the Upper Fine Grained Unit (UFGU), 45 foot sand, 60 foot sand, and the 90 foot sand/silt. Underlying the shallow water bearing units are the Alpha Aquifer and Beta Aquifer of the Lakewood Formation. Reportedly, in addition to historical use from well KAYO-SB, the Alpha and Beta Aquifers are pumped periodically by the City of Huntington Beach from production wells located to the north and northeast of Site 75 for part of the City's water supply.

Groundwater gradient beneath the Boeing site was generally described as follows: in the UFGU, the flow is westerly with apparent localized influence from remedial activities. In the 45 foot sand, the groundwater gradient is 0.003 to the west; in the 60 foot sand, the groundwater gradient is 0.002 to the southwest. Gradient in the semi-continuous 90 foot sand is 0.002 to the south-southwest. The gradient in the Alpha Aquifer ranges from 0.0002 to 0.0006, directed predominantly to the east but, reportedly, direction will vary from northeast to west in response to pumping at the city of Huntington Beach's supply wells. The Beta Aquifer gradient, also affected by pumping, was reported at 0.002 to the northeast and east northeast.

In 1986, 19 underground storage tanks (USTs) were removed from 9 different locations at the Boeing Site. Since groundwater investigation and monitoring activities began in 1987, more than 100 permanent groundwater monitoring wells have been installed. Remedial activities at the Boeing site include a groundwater extraction and treatment system operated from 1990 until June 2003 when it was turned off due to conflict with the reported presence of l,4-dioxane. In 2006, a Groundwater Extraction and Treatment (GET) System was installed at the Site's southern boundary to mitigate off-site migration of VOCs. This GET system was expanded in 2009.

Additional remedial efforts at the Boeing site include an in-situ chemical oxidation groundwater treatment and monitoring program targeting a section of the 45 foot and the 60 foot sands. (Haley & Aldrich 2009c)

The following data, from wells spaced across the Boing site, represent the highest concentrations of dissolved VOCs for this site found during this historical review.

Boeing Maximum Data

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	54,000	7,400	6,230	54,000	23	16,000
Date	4/27/93	7/30/87	4/16/99	7/11/91	4/19/95	8/24/93
Depth (ft bgs)	30-40 (UFGU)	10-26 (UFGU)	10-26 (UFGU)	30-40 (UFGU)	45-48 (45-ft Sand)	10-26 (UFGU)
Well/Sample	EW-1	MW-4	MW-4	EW-1	MW-6D	MW-4

Recent data from Boeing wells located near Site 75 show lower concentrations:

Boeing Recent (June 2009) Data From Wells Located Near Site 75
(Haley and Aldrich, 24 Nov 2009)

Depth (ft bgs) Unit Well ID	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
81-97 (90-ft Sand) MW-3N	4.5	4.2 J	.56 J	< 2	ND	13
136-166 (Alpha) MW-37A	12	3.1 J	0.39 J	<2	ND	40
252-267 (Beta) MW-34	2.6	4.4 J	ND	<2	ND	0.63 J

Concentrations in µg/L
J = Estimated value. Analyte detected at a level less than the Reporting Limit and greater than or equal to the Method Detection Limit

Venus Laboratories, Inc., 15571 Commerce Lane, Huntington Beach

The site is at 15571 Commerce Lane in Huntington Beach, approximately 0.75 mile to the southeast. Venus Laboratories, Inc. began operations in 1980. However, they no longer occupy the site, which is currently used for manufacturing and warehouse space. The Venus Laboratories, Inc. site is listed as an open case in GeoTracker (# 0605901513) and as case 083002028T with the Santa Ana RWQCB.

According to the Orange County Health Care Agency (OCHCA) (April 1994), the Venus Laboratories, Inc. site had 11 unpermitted USTs containing isopropyl alcohol, mineral spirits, and sulfuric acid.

Reported geological description indicates the site is underlain to approximately 25 feet bgs by silty clay which is underlain by a clayey sand to sand extending to 30 feet bgs.

Gradient direction was estimated southwest at 0.002 and 0.008 ft/ft. Water level within the reportedly confined aquifer was from 15 to 17 feet bgs.

Groundwater monitoring and sampling began in 1991. During that time there have been several soil and groundwater investigations, including an offsite investigation in 2001 targeting contaminant migration. During UST removal in 1994, a remedial effort involved application of 35 pounds of an oxygenated compound mixed at a depth of approximately 15 feet bgs into the bottom of a 15 foot by 15 foot source area remedial excavation.

The highest concentrations of dissolved VOCs for this site found during this historical review were as follow:

Venus Laboratories Maximum Data (Atlas Environmental Engineering, Inc., 2009)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	3,300	518*	670*	11.6 L	322	138
Date	8/15/03	2/07/07	9/20/06	9/10/07	12/21/05	10/01/09
Depth (ft bgs)	<25	<25	<25	<25	<25	<25
Well/Sample	MW-2	MW-2	MW-2	MW-2	MW-2	MW-5

L = lower dilution analysis
* = higher dilution analysis

Recent data show lower concentrations:

Venus Laboratories Recent Data (Atlas Environmental Engineering, Inc., 2009)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	1,720	77.6	241	11.5 J	138	138
Date	10/01/09	10/01/09	10/01/09	10/01/09	10/01/09	10/01/09
Depth (ft bgs)	<25	<25	<25	<25	<25	<25
Well/Sample	MW-1	MW-1	MW-1	MW-2	MW-5	MW-5

J = Result is below the practical quantitation limit and above the method detection limit

Weiser Lock, 5555 McFadden St., Huntington Beach

The Weiser site is located to the east approximately 0.7 mile away from the site. The Weiser site is listed as open-remediation case SL208053860 in GeoTracker.

The groundwater gradient was reported to the northeast in the shallow wells completed with screen intervals extending as deep as 20 feet bgs. Wells completed in deeper intervals (termed intermediate and deep) had reported gradients to the southwest.

The highest concentrations of dissolved VOCs for this site found during this historical review were:

Weiser Lock Maximum Data (Geosyntec, 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	4,250 *	88,000	1,300	110,000	79,200	5,700
Date	Sept 1996	May, 2003	Nov, 2006	May, 2003	Sept 1996	May, 003
Well/Sample	EW-5	EW-5	EW-4	EW-5	EW-6	EW-5

All wells are described as "intermediate depth." Exact screen interval s are not available except for well EW-2, which was reportedly screened from 19.9 - 30.4 feet bgs.

* A higher result occurred in August 2000, however, due to erratic results the wells were resampled and had much lower results

Recent data show lower concentrations:

Weiser Recent Data (Geosyntec, 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	360	13,000	950	5,900	15,000	1,900
Date	11/24/09	11/13/09	11/13/09	11/13/09	11/13/09	11/13/09
Well/Sample	EW-2	EW-6	EW-5	EW-6	EW-6	EW-6

FedEx, 5321 System Drive, Huntington Beach

The FedEx site is approximately 0.8 miles to the southeast of well KAYO-SB. The site is currently vacant but was used as a FedEx distribution center. FedEx used an on-site 10,000 gallon UST until the early 1990s. This site is listed in GeoTracker in site assessment as open case T0605901840 and is a UST site open with the OCHCA (# 95UT4).

The site is underlain by silt and clay with sand, silty sand, and clayey sand interbeds down to 35 feet bgs. Depth to groundwater was reported at 14 feet bgs with a groundwater gradient 0.002 to 0.010 ft/ft to the northeast.

Since the UST was removed in 1994, several soil and groundwater investigations have been conducted at the site. Quarterly and semi-annual groundwater monitoring has been ongoing since April 2000.

The highest concentrations of dissolved VOCs for this site found during this historical review were:

FedEx Maximum Data (Bureau Veritas, 2009, 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	Not Reported	23.1	43.2	Not Reported	53.2	60.5
Date	-	2/15/08	3/08/06	-	2/19/09	2/15/08
Depth (ft bgs)	-	15 - 30	15 - 30	-	15 - 30	10 - 35
Well/Sample	-	FXMW-6	FXMW-8	-	FXMW-8	MW-4

Recent data are as follows:

FedEx Recent Data (Bureau Veritas, 2009, 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	Not Reported	<1.0	23.9	Not Reported	53.2	37.5
Depth (ft bgs)	-	15 - 30	15 - 30	-	15 - 30	15 - 30
Well/Sample	-	FXMW-6	FXMW-8	-	FXMW-8	FXMW-8

All samples were collected on 2/19/09.

Centrilift Hughes, 5421 Argosy Ave., Huntington Beach

The Centrilift Hughes site is located approximately 0.5 mile from the site to the east. Since 1976, Centrilift Hughes has manufactured, serviced, and rebuilt pumps and related electrical equipment for the petroleum industry. 1,1,1-TCA was reportedly used at the site. The Centrilift Hughes site is listed as #SL188063852 in GeoTracker, an open site currently in remediation. Dual Phase extraction and treatment started in 2004. An ISCO reagent was applied in 2005 and 2006. The membrane interface probe (MIP) report dated April 2009 indicates the vertical extent of the plume is not known.

Cone penetrometer test data from a MIP investigation reported April 2009 showed a silty clay layer typically between 15 and 45 feet bgs and a semi-consistent sand layer from 45 to 60 feet bgs. Groundwater was reported from 12 to 16 feet bgs. Groundwater gradient was reported to the southeast.

The highest concentrations of dissolved VOCs for this site found during this historical review were:

Centrilift Hughes Maximum Data (GeoTrans, Inc., 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	25,000	29,000	140,000	170,000	5,900	62,000
Date	3/11/03	6/15/01	8/28/97	2/18/02	6/15/01	1/20/94
Well/Sample	MW-1	EW-2	MW-1	EW-2	EW-2	MW-1

Sample depths are not indicated in the referenced report.

Recent data are as follows:

Centrilift Hughes Recent Data (GeoTrans, Inc., 2010)

	1,1-DCA	1,1-DCE	Cis 1,2-DCE	1,1,1-TCA	PCE	TCE
MCL (µg/L)	5.0	6.0	6.0	200	5.0	5.0
Concentration (µg/L)	9,100	7,800	81,000	23,000	Not Detected	Not Detected
Well/Sample	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1

All samples were collected on 10/23/09. Sample depths are not indicated in the referenced report.

2.5 Geological Setting

The following sections describe the regional and local geological setting based primarily on the data from historical Boeing investigations (Haley and Aldrich, 2005, 2006, 2009a,b,c).

2.5.1 Regional Geology

The site is located in the Los Angeles sedimentary basin within the Bolsa-Sunset Gap, a 2 to 3 miles wide topographic low formed between the Bolsa Chica Mesa to the southeast and Landing Hill to the northwest. Current topography in the area is reflective of the late Pliocene and Pleistocene movement along the northwest-trending Newport-Inglewood structural zone.

The late Pliocene and Pleistocene sediment deposition in the vicinity of the site was derived from erosion of uplifting mountain ranges followed by sediment transport and ultimate deposition in the area as interbedded sands, silts, and clays in a marine embayment of moderate to shallow depths.

For the purposes of this investigation, two geologic units are discussed, the Recent Alluvium and the upper Pleistocene Lakewood Formation.

2.5.2 Site Geology

Historical Boeing site investigations are referenced in this section due to the extensive Boeing investigation footprint adjacent the site to the northeast, the areal extent of the Boeing data, the large number of wells and borings, and the depth compatibility with former well KAYO-SB.

This soil and groundwater study is designed to investigate to approximately 310 feet bgs, essentially matching the total depth of well KAYO-SB. A comparison of the geologic log from the 1926 installation of KAYO-SB with recent logs from the Boeing site to the north show strong similarity from surface down to approximately 80 feet below grade. The correlation of the subsurface transmissive zones and aquitards between Site 75 and surrounding borings will be evaluated during this investigation. Geological investigation of the Boeing site immediately to the north of Site 75 (Halley & Aldrich, 2009c), revealed as many as four shallow, water-bearing intervals. These four water bearing intervals are separated by finer grained aquitard zones and all lie within the Recent Alluvium extending variably from the surface to approximately 130 feet bgs. The four water bearing zones are referred to as the UFGU (silt/clay 0 – 45 feet bgs), the 45-foot sand (45 – 55 feet bgs), the 60-foot sand (60 – 80 feet bgs), and the intermittent 90-foot sand (90 – 95 feet bgs). The grain size distribution within these water bearing intervals ranges from the silt and clay of the UFGU to medium grained sands and gravels of the 60-foot sand. Separating the four water bearing units are aquitard one, aquitard two, and aquitard three, composed primarily of interbedded clays and silts (Figure 3).The upper Pleistocene Lakewood Formation lies beneath the Recent Alluvium reportedly extending beyond 500 feet below grade. Within the Lakewood Formation, the Alpha Aquifer, composed primarily of poorly graded, fine to medium sand and gravels extends from approximately 130 to 200 feet bgs. Aquitard 4, composed of interbedded silts and clays, separates the Alpha Aquifer from the underlying Beta Aquifer. The Beta Aquifer, composed of poorly graded medium to coarse sand and gravel and minor lenses of silt and clay, extends from approximately 230 feet to approximately 300 feet where the interbedded clay and silt of aquitard 5 begins.

2.6 Hydrogeology

Based primarily on the data from historical Boeing Investigations discussed above, the following sections describe the regional and local hydrogeology (Haley and Aldrich, 2005, 2006, 2009a,b,c).

2.6.1 Regional Hydrogeology

The geologic units containing regional water-bearing zones of interest include the shallow water-bearing zones of the Recent Alluvium and the upper Pleistocene Lakewood Formation where the Alpha and Beta Aquifers have been mapped.

Most sources indicate a westerly regional groundwater gradient; however, Site 75 is likely affected by water bearing units with significant variation in groundwater gradient. In addition to multiple groundwater flow directions, historical data indicate there may be hydraulic communication to a varying extent between the transmissive water bearing units.

2.6.2 Site Hydrogeology

The following describes historical hydrologic data from the Boeing site investigations pertaining to the above described water bearing zones and aquitard intervals in the vicinity.

2.6.2.1 Shallow water bearing zones

The data from the Boeing site indicates there are four shallow water-bearing intervals identified beneath the nearby Boeing site referred to collectively as the shallow water-bearing zones.

Individually, these zones are identified as the UFGU, 45-foot sand, 60-foot sand, and the 90-foot sand/silt.

The Upper Fine Grained Unit

Groundwater elevations measured in the UFGU show groundwater elevations ranging from 8.70 to 12.43 feet above MSL. Within the UFGU, the groundwater gradient direction is westerly at 0.002 to 0.004 foot vertical/foot horizontal (ft/ft) reportedly subject to localized influence from remedial activities.

The 45-Foot Sand

Groundwater elevations measured in the 45-foot sand show groundwater elevations ranging from 8.33 to 11.58 feet above MSL. The approximate groundwater gradient within the 45-foot sand is westerly to southwesterly at 0.002 ft/ft.

The 60-Foot Sand

Groundwater elevations measured in the 60-foot sand show groundwater elevations ranging from 6.44 to 11.05 feet above MSL. The approximate groundwater gradient within the 45-foot sand is southwesterly at 0.001ft/ft.

The 90-Foot Sand

Cross sections through the Boeing site terminating closest to Site 75 suggest the 90-foot sand, although observed to the north of the site, may not exist in the area of well KAYO-SB. According to historical data, the horizontal groundwater head gradient is 0.002 ft/ft and the flow direction is to the south-southwest in the 90-foot sand where present. Groundwater measurements from Boeing site wells screened in the 90 foot sand show groundwater elevations from 8 to 10 feet above MSL to -1.5 feet below MSL.

Historical groundwater elevation measurements do not show strong evidence of downward vertical migration from the 90 foot sand to the underlying Alpha Aquifer. In general, however, the other shallow water bearing zones do show evidence of downward vertical migration.

2.6.2.2 Deeper water bearing zones

Underlying the shallow water-bearing units are the Alpha Aquifer and Beta Aquifer of the Lakewood Formation. Reportedly, the Alpha and Beta Aquifers are pumped periodically for irrigation from NAVWPNSTA Seal Beach wells. The aquifers are also subject to pumping by the City of Huntington Beach from production wells located to the north and northeast of Site 75 as part of the City's water supply (Haley & Aldrich, 2009c).

Alpha Aquifer

Groundwater gradient in the Alpha Aquifer is reportedly influenced by the pumping of the City of Huntington Beach production wells located north and northeast of the site. Groundwater gradient ranges from 0.0002 to 0.0006 ft/ft, with a predominantly eastward flowing direction but, the groundwater flow direction will vary from northeast to west in response to pumping from supply wells.

Beta Aquifer

As with the Alpha Aquifer, water levels and groundwater flow directions in the Beta Aquifer are influenced by the pumping of the City of Huntington Beach production wells located north and northeast of the Boeing site. Historical monitoring data show groundwater elevation changes ranging from -15.03 to -40.53 feet MSL. The beta gradient was reported at 0.002 ft/ft, with groundwater flowing to the northeast and east northeast (Haley & Aldrich, 2009c).

3.0 CONCEPTUAL SITE MODEL

The existing CSM for Site 75 was compiled from historical research, site visits, and available hydrogeological and chemical data from previous investigations. A more refined CSM will be developed based on the results of this investigation. The existing CSM is presented in the following sections.

3.1 Nature and Extent of Target VOCs in Groundwater

At issue is VOC impact to groundwater near the eastern boundary of NAVWPNSTA Seal Beach. Specifically, at Site 75 which is former agricultural well KAYO-SB, groundwater analyses have shown the presence of VOCs including TCE, 1,1-DCA, 1,l-DCE, PCE, and trace 1,1,1-TCA.

The history of agricultural use of the Navy property beneath well KAYO-SB combined with what is currently understood about the transmissive water bearing units and groundwater flow at the site likely preclude the Navy as the source for this contamination. The COPCs however are commonly used in industry and have been documented at several non-Navy sites in the area.

The extent of the groundwater contamination at well KAYO-SB is unknown, primarily because the site is represented by the groundwater analytical data from a single well location with an extended screened interval. Other key investigation factors pertaining to the extent of the COPC plume include divergent gradients and the apparent hydraulic communication within the multiple transmissive water bearing units expected beneath the site.

Figure 4 shows the location of former well KAYO-SB and a representation of potential sources in the area. This figure includes a historical data summary showing the elevated COPC concentrations and generalized groundwater gradient directions.

3.2 Potential Migration Pathways

Potential transport pathways for the dissolved VOCs present at Site 75 include the multiple transmissive water bearing intervals beneath the site.

The regional groundwater gradient direction is generally westerly, but data from nearby sites (Figure 4) show there may be significant directional variation with depth possibly influenced by periodic pumping, saltwater intrusion mitigation, and potential localized effects due to remedial operations. Additionally, migration pathways may be different today than when groundwater was being extracted at KAYO-SB.

3.3 Potential Receptors

Human Receptors

Human receptors are relatively unlikely to be affected by the contaminant plume at this site as follows:

- Surface water and direct contact by humans is unlikely also due to the downward migration tendencies of the contaminant suite at issue.

- The only known supply well (KAYO-SB) in the vicinity has been destroyed, closing the pathway to receptors linked to agricultural supply.
- Human consumption of groundwater could however occur depending on where the contamination is and how it is migrating.

Ecological Receptors

Ecological receptors are precluded from a completed pathway at Site 75 for the following reasons:

- Ecological receptors are unlikely to come in direct contact with contaminants in this plume because of the probable downward migration characteristics of the chlorinated solvents comprising the plume. Surface water is unlikely to be affected.
- The only known supply well in the vicinity has been abandoned, closing the pathway to ecological receptors that may come in contact and or consume irrigation water or agricultural produce.

4.0 TECHNICAL APPROACH

A brief summary of the technical approach for this investigation is presented in this section. A detailed description of the sampling program and an expanded description of the supporting DQOs are presented in the attached SAP (Appendix A).

Based upon the Problem Definition (SAP Worksheet #10, Appendix A) and DQOs (SAP Worksheet #11, Appendix A), the following sections summarize the technical approach proposed for the investigation.

4.1 Well Installation

The scope of work included in this work plan consists of installation of an array of seven monitoring wells designed to sample transmissive strata of interest. One monitoring well will be installed near the location of former well KAYO-SB. Pairs of monitoring wells (targeting two depths) will be installed at three other locations. The completed wells will yield groundwater elevation data and groundwater laboratory analytical results. These data will be used to address the main investigative objective concerning the source of the groundwater contamination at IR Site 75.

The strategy for installation of the wells includes sonic drilling next to former KAYO-SB to a depth of 310 feet. Based on the KAYO-SB driller's log, this depth should penetrate 10 feet into the first transmissive unit of the Beta Aquifer. The upper 5 feet of each borehole will be cleared for underground utilities by hand-augering or equivalent. The VOC screening will commence in the first undisturbed soil beneath the hand-augered interval, approximately 6 feet below ground surface." The continuous core will be logged by a Professional Geologist and field screened approximately every 2 feet for VOCs using DSITMS (EPA Method 8265). Draft field results will be sent to the project team on a daily basis. Following logging, a 3-inch-diameter groundwater monitoring well will be installed in boring SB75-MW01 at the depth where contaminant screening shows the highest concentrations. It is estimated that it will take 3 days to drill and install the well.

The geologic and VOC logs will be examined to identify the two water-bearing units with the highest VOC screening concentrations. These two water bearing units will be proposed to be the targets of well pairs at three additional locations, shown on Figure 5. The well pairs will be bored separately, although as close together as practical. The deeper well will be drilled first, and the continuous core will be logged by a California Registered Professional Geologist and field screened approximately every 2 feet for VOCs using EPA Method 8265. This data will be used to confirm that the target well depths intersect the targeted water bearing units. The shallower well will be drilled second, using the geologic and VOC logs from the deeper well to confirm the planned depth. If only one VOC-bearing zone is identified by field screening, that zone will be targeted for monitoring well design. The DQO team will examine the lithology log to identify a depth/location for the second paired well.

In this dynamic manner, the design of the wells, including final depth, screened intervals, and seal placement will be based on germane geologic and VOC screening data prior to well

installation. This method should yield a better end result because of the appropriate information to guide field decisions and the opportunity for stakeholder concurrence prior to well installation.

Following well installations, each well will be developed using a well development rig. The well installations and development will be completed in accordance with the OCHD requirements, the OCHCA Environmental Health Division, and the California Department of Water resources Monitoring Well Standards Bulletin 74-90.

4.2 Survey

All seven wells will be professionally surveyed for elevation by a California Licensed Surveyor. The surveyor will permanently mark the survey point on the well casing to index subsequent groundwater measurements.

For groundwater gradient information, groundwater elevation will be measured using the surveyor's index mark on the well casing following well installation and development. Stabilized groundwater elevation will be confirmed by equal consecutive groundwater depth measurements separated by at least one hour.

4.3 Investigational Derived Waste

The driller will handle investigational derived waste (IDW) from drilling activities under the management of AMJV personnel. A roll-off bin or equivalent will be located at one reasonably accessible location as directed by base personnel. A secondary containment structure will be in place for all IDW. The driller will transport drilling waste including water and soil cuttings to the single waste storage area pending characterization and disposal. All IDW waste manifests will be reviewed and signed by base personnel prior to the waste being transported to an offsite facility.

4.4 Sampling

The seven wells will be sampled using low-flow methodology and analyzed by a fixed-based laboratory for VOCs by U.S. EPA Method 8260B. The wells will have dedicated well pumps installed with intakes at the middle of the screened interval, which will be determined from the above hydrogeology and VOC gradient data.

The available data strongly suggests that the proposed borings are not at source areas where soil contamination is expected; therefore no soil sampling is planned.

The VOC screening by 8265 will be performed on total matrix samples (soil plus pore water) from the sonic drilling cores, and the results can be used to evaluate the presence of residual NAPL or soil contamination. Considering screening technology, data requirements, and time frame, a vertical sampling interval of approximately two feet (optimized based on lithologic logging) is proposed as an appropriate sampling density to optimize the design of monitoring wells. This screening technique has been used successfully at other sites to screen for VOCs in soil and pore water (i.e. groundwater).

4.5 Quality Assurance and Quality Control

The QA/QC program detailed in the SAP (Appendix A) involves the monitoring, testing, evaluation, and augmentation of data-generating components of the investigation.

The QA-specific procedures in place for this field investigation include systematic monitoring and evaluation of procedural compliance on a daily basis. These QA elements consist of an initial readiness review, technical systems audits (TSAs), daily review of field logs with corrective action, sampling oversight, data management protocol, and data validation.

The QC program focuses on the testing of investigational processes that ultimately affect data quality. The SAP describes the frequency, acceptance limits, and other specifics pertaining to the QC sampling protocol. Specifically for this well installation phase of the investigation, QC testing will focus on chemical analysis conducted at a fixed-base laboratory and the DSITMS screening conducted on-site. These fixed laboratory QC tests include method blanks, surrogates, laboratory control samples, and matrix spikes. QC tests documented for DSITMS screening include continuing calibration check standards, performance evaluation standards, blanks, and duplicate analyses. QC testing coordinated in the field include equipment rinsate, field duplicates, source water blanks, trip blanks, and temperature blanks. A summary of the quality assurance/quality control (QA/QC) protocols that will be implemented throughout the investigation is provided in detail in the SAP (Appendix A).

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5.0 PROPOSED SCHEDULE

The following schedule is planned for the execution of proposed investigation at Site 75:

- April 20, 2011 – Submittal of Draft Work Plan and SAP for Agency review.
- April 20 through June 24, 2011 – Agency Review of Draft Work Plan and SAP and resolution of Agency comments.
- June 30, 2011 – Submittal of Final Work Plan and Work Plan and SAP.
- June 20, 2011 – Site preparation for field activities.
- July 6, 2011 – Begin drilling.
- August 3, 2011 – Demobilize drilling crew from field.
- August, 2011 – First groundwater sampling event.
- November, 2011 – Second groundwater sampling event.

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6.0 REFERENCES

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Haley & Aldrich, Inc., 2009c, Report on Groundwater Assessment Investigation Alpha and Beta Aquifers, Boeing Huntington Beach Facility, Huntington Beach, California. 24 November

Tetra Tech EC, Inc., 2007. Final Well Decommissioning Report, Naval Weapons Station Seal Beach, Seal Beach, California. 12 February

FIGURES

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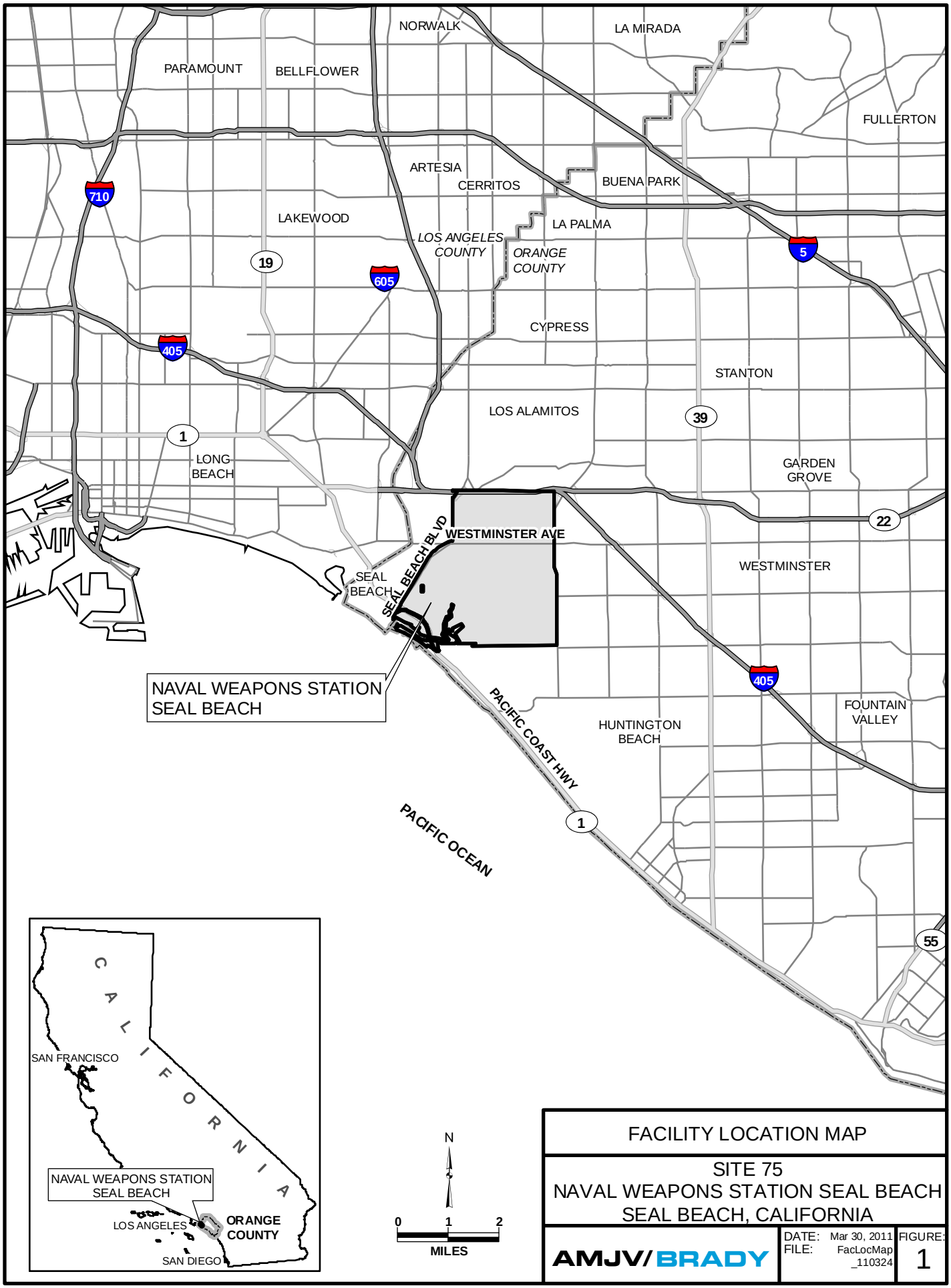

FACILITY LOCATION MAP

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: FacLocMap _110324

FIGURE: 1

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SITE LOCATION MAP

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: SiteLocMap _110324

FIGURE: 2

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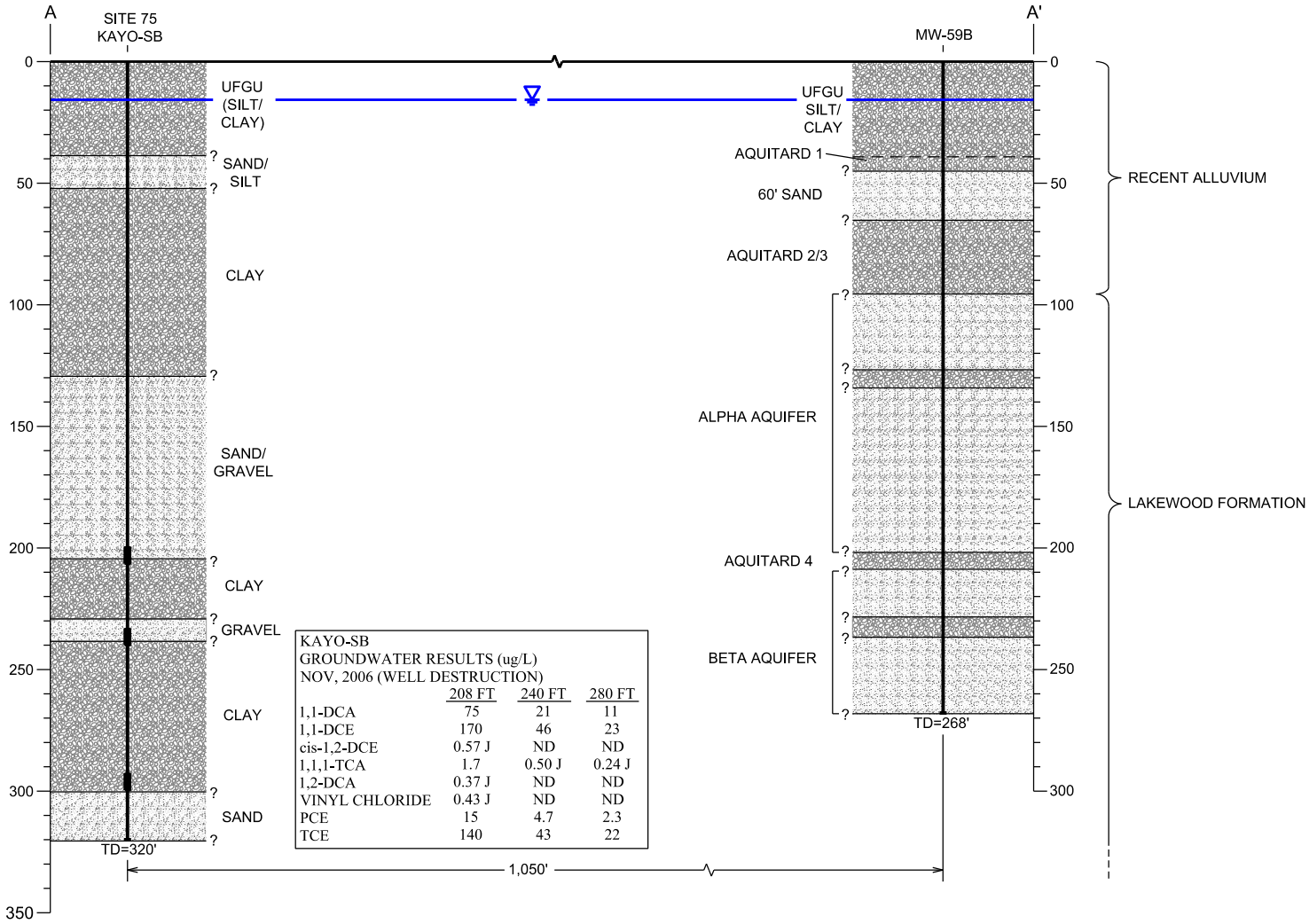
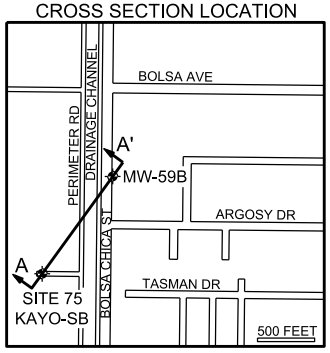
GENERAL CSM CROSS SECTION
LITHOLOGIC REPRESENTATION AT
FORMER WELL KAYO-SB AND WELL MW-59B



KAYO-SB
GROUNDWATER RESULTS (ug/L)
NOV, 2006 (WELL DESTRUCTION)

	208 FT	240 FT	280 FT
1,1-DCA	75	21	11
1,1-DCE	170	46	23
cis-1,2-DCE	0.57 J	ND	ND
1,1,1-TCA	1.7	0.50 J	0.24 J
1,2-DCA	0.37 J	ND	ND
VINYL CHLORIDE	0.43 J	ND	ND
PCE	15	4.7	2.3
TCE	140	43	22

CROSS SECTION LOCATION



REFERENCE:
Haley & Aldrich, Inc., 2009c, Report on Groundwater Assessment Investigation Alpha and Beta Aquifers

NOTES:
1. THE WELL LOGS DO NOT SHOW THE PRESENCE OF THE 45' SAND AND THE 95' SAND IN THE AREAS SHOWN.

UFGU = UPPER FINED GRAIN UNIT
TD = TOTAL DEPTH
ug/L = MICROGRAMS PER LITER

APPROXIMATE GROUNDWATER ELEVATION

GENERAL CSM CROSS SECTION
SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

Date: Mar 30, 2011
File: XSECTA.dgn

FIGURE 3

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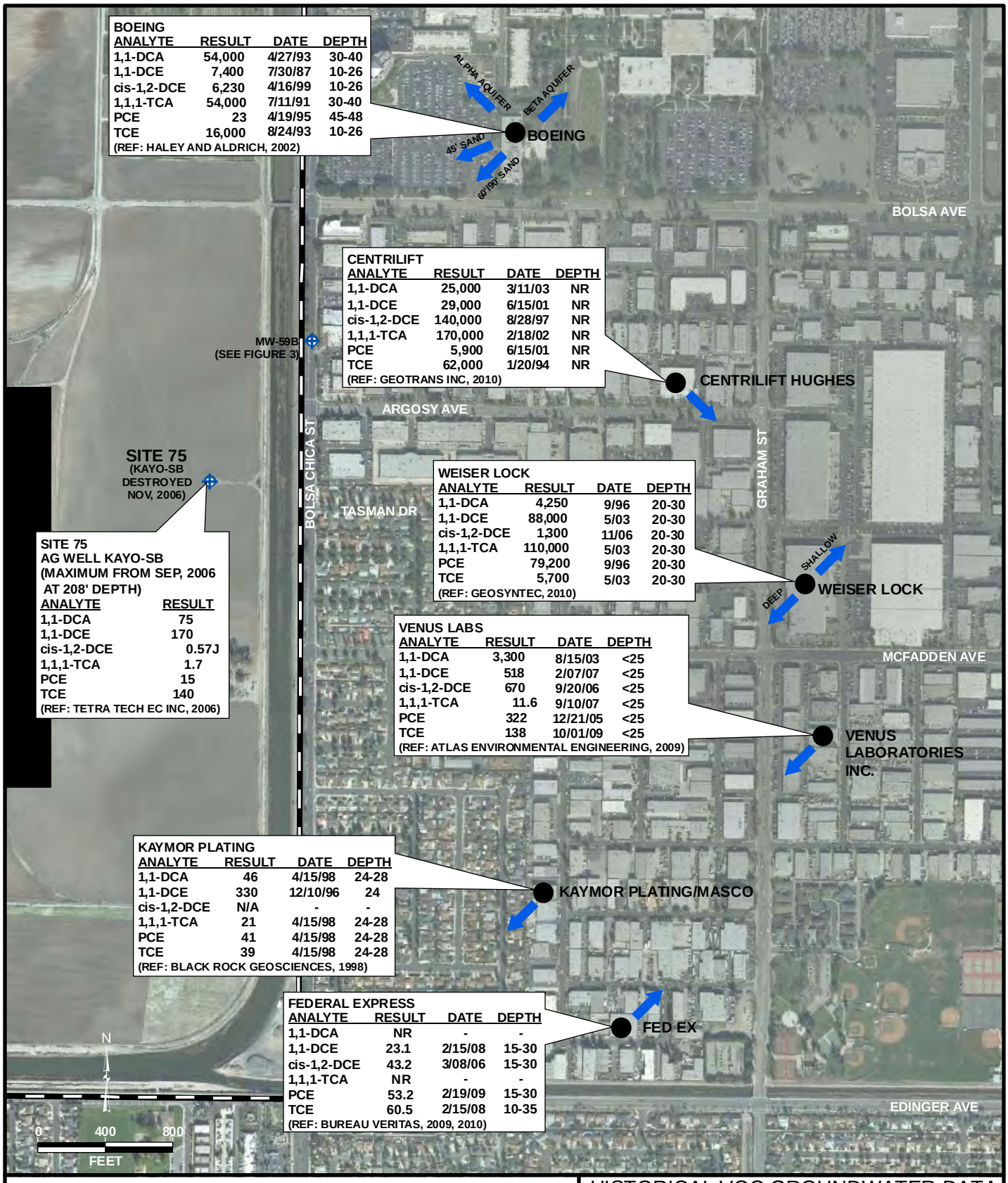

LEGEND

- SITE 75, FORMER AGRICULTURAL WELL KAYO-SB
- NON-NAVY SITE NEARBY SITE 75
  NOTE: DOES NOT INDICATE LOCATION OF GROUNDWATER MONITORING WELLS
- GROUNDWATER GRADIENT DIRECTION (WATER BEARING UNIT NOTED)
- BASE BOUNDARY

NOTES

1. DEPTHS ARE APPROXIMATE, BASED ON AVAILABLE INFORMATION
2. DEPTH UNITS ARE FEET
3. RESULT UNITS ARE MICROGRAMS PER LITER (µg/L)

J = ESTIMATED
N/A = NOT AVAILABLE
NR = NOT REPORTED

HISTORICAL VOC GROUNDWATER DATA AT NEARBY SITES

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: HistData _110329

FIGURE: 4

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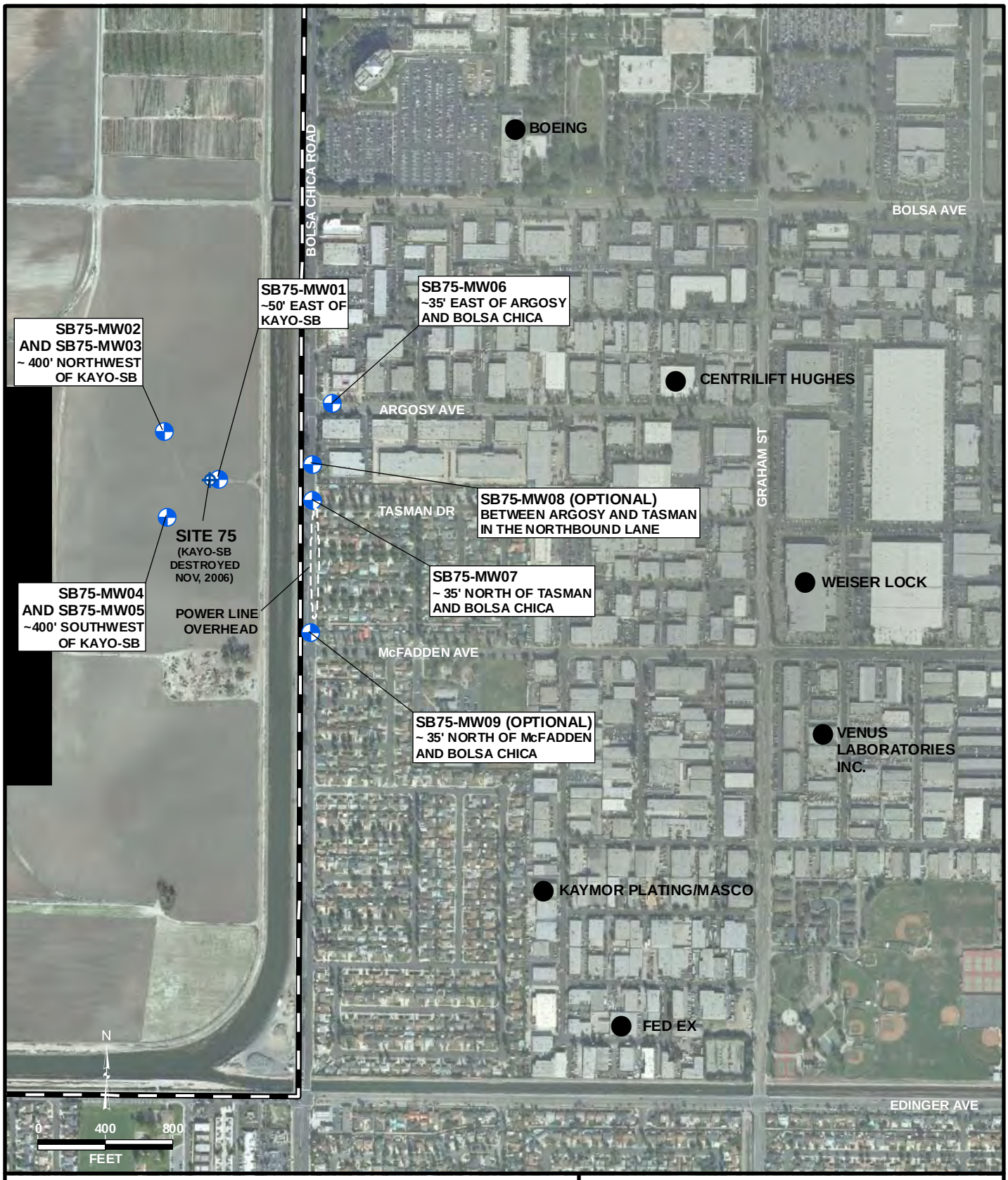

LEGEND

- PROPOSED BORING/WELL LOCATION
- SITE 75, FORMER AGRICULTURAL WELL KAYO-SB
- NON-NAVY SITE NEARBY SITE 75
  NOTE: DOES NOT INDICATE LOCATION
  OF GROUNDWATER MONITORING WELLS
- BASE BOUNDARY

PROPOSED BORING/WELL LOCATIONS

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: June 14, 2011
FILE: PropLoc _110324

FIGURE: 5

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TABLES

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TABLE 1
WELL KAYO-SB HISTORICAL ANALYTICAL DATA

KAYO-SB data	PCE µg/L	TCE µg/L	1,1-DCA µg/L	1,1-DCE µg/L	cis,1,2-DCE µg/L	1,1,1-TCA µg/L	1,2-DCA	Vinyl Chloride
State of California Maximum Contaminant Level (µg/L)	5	5	5	6	6	200	0.5	0.5
Discovery sampling event (September, 2004), OCWD[1]	1.8	25.3	13.8	30.3	Not reported	TRACE	Not reported	Not reported
Well KAYO-SB destruction sampling at 208 ft bgs (November, 2006), Navy[2]	15	140	75	170	0.57 J	1.7	0.37 J	0.43 J
Well KAYO-SB destruction sampling at 240 ft bgs (November, 2006), Navy[2]	4.7	43	21	46	ND	0.50 J	ND	ND
Well KAYO-SB destruction sampling at 280 ft bgs (November, 2006), Navy[2]	2.3	22	11	23	ND	0.24 J	ND	ND

Notes:
ND - not detected
µg/L - micrograms per liter

1 - Source: Haley & Aldrich, Inc., Report on Supplemental (Phase III) Groundwater Data Gap Assessment Investigation, Huntington Beach Facility, Huntington Beach, CA. August 2005.
2 - Source: Tetra Tech EC, Inc., Final Well Decommissioning Report, Naval Weapons Station Seal Beach, Seal Beach, California, 12 February 2007.

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APPENDIX A

SAMPLING AND ANALYSIS PLAN

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1.0 SAP WORKSHEET #1 – TITLE AND APPROVAL PAGE

FINAL
SAMPLING AND ANALYSIS PLAN
(Field Sampling Plan and Quality Assurance Project Plan)

PRELIMINARY ASSESSMENT/SITE INSPECTION INSTALLATION RESTORATION PROGRAM SITE 75 AGRICULTURAL WELL KAYO-SB NAVAL WEAPONS STATION SEAL BEACH SEAL BEACH, CALIFORNIA

June 30, 2011

Prepared for:
DEPARTMENT OF THE NAVY
Naval Facilities Engineering Command Southwest
1220 Pacific Highway, San Diego, California 92132-5190

NAVFAC Naval Facilities Engineering Command

Prepared by:

Accord MACTEC Joint Venture
1231 E Dyer Road, Suite 265, Santa Ana, CA 92705
(858) 278-3600

and

BRADY
Richard Brady and Associates
3710 Ruffin Road, San Diego, CA 92123
(858) 496-0500

Prepared under:
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Prepared by:

Date 6/16/11
Aaron Heidt
BRADY Senior Environmental Scientist

Reviewed by:

Date 06/16/11
Jesse MacNeill
BRADY Quality Assurance Manager

Reviewed by:

Date 6-16-11
Rod Reeve
AMJV Program Manager

Approved by:

Date 6/22/2011
Narciso A. Ancog
NAVFAC SW Quality Assurance Officer

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1.1 Executive Summary

This Sampling and Analysis Plan (SAP) presents a planned groundwater assessment that will be conducted to support a Preliminary Assessment (PA) and Site Inspection (SI) at Installation Restoration Program Site 75 (Site 75), Naval Weapons Station (NAVWPNSTA) Seal Beach, California. This document was prepared by the project team of the Accord MACTEC Joint Venture (AMJV), which is comprised of Accord Engineering, Inc. (AEI) and MACTEC Engineering and Consulting, Inc. (MACTEC) and Richard Brady & Associates (BRADY) for the Department of the Navy (DoN), Naval Facility Engineering Command Southwest (NAVFAC SW) under Contract Number N62473-09-D-2613, Delivery Order No. 0018.

The DoN is the lead agency on this project, with regulatory oversight by the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB) - Santa Ana Region.

The objective of this PA/SI is to evaluate whether or not volatile organic compounds (VOCs) previously discovered in groundwater from the former agricultural well, KAYO-SB, located on Navy property, originate from a source within the Navy property line. To achieve this goal, this investigation is designed to use a dynamic work strategy to screen target contaminants of potential concern (COPCs) in "real time", the data from which will be used to optimize the design of permanent groundwater monitoring wells. Additionally, this investigation will provide characterization data to refine the nature and extent of contamination, assess the exposure pathways to human health and the environment, and refine the conceptual site model (CSM) for Site 75 sufficient to determine if there is a need for further investigation or cleanup.

To achieve the goals of this investigation, up to nine permanent wells will be designed and installed based on site lithology and proposed screening data obtained from continuous-cored soil borings. It is anticipated that the first proposed boring will be advanced to approximately 310 feet below ground surface (bgs), adjacent to the former agricultural well KAYO-SB. The lithology will be logged by a Professional Geologist and VOC concentration screening measurements will be collected approximately every 2 lineal feet using direct sampling ion trap mass spectrometry (DSITMS) by EPA Method 8265. While performing the VOC screening on the continuous geologic cores, if the geologist observes stains, odors, or a PID reading in the soil core that is interpreted as residual soil contamination or NAPL, a confirmation soil sample may be collected and analyzed for target VOCs by a fixed-base analytical laboratory. The results of the detailed geologic and VOC log will be used to identify the depth and water-bearing unit(s) through which VOCs are migrating, and will preliminarily guide the boring depths and subsequent monitoring well designs at the other proposed locations. The depths of the additional wells will be adjusted based on the detailed geologic logs and targeted VOC screening performed during advancement of each proposed boring.

After completion and development, groundwater samples will be collected from the newly installed wells using low-flow methodology and analyzed for target VOCs by a fixed-base analytical laboratory. Two consecutive quarterly groundwater monitoring events are planned. Analytical data will be validated by an independent third party reviewer.

The overall quality of tasks performed for this assessment will be assured by conformance to protocols established for sample collection, analytical procedures, and data management. A summary of the quality assurance/quality control (QA/QC) protocols that will be implemented throughout the investigation is provided in detail in this SAP. QA objectives and detail regarding data management, verification, and validation are also provided in this SAP. Data collected for this assessment will be compiled and the multiple lines of evidence will be reviewed to determine whether previously detected target VOCs in groundwater originate from a Navy or non-Navy source.

SAP WORKSHEETS

TABLES

FIGURES

ATTACHMENTS

ACRONYMS / ABBREVIATIONS

AEI	Accord Engineering, Inc.
AMJV	Accord MACTEC Joint Venture
APP	Accident Prevention Plan
AR	Administrative Record
bgs	below ground surface
BRADY	Richard Brady and Associates
°C	degrees Celsius
CA	Corrective Action
CAS	Chemical Abstracts Service
CCC	criteria continuing concentration
CCV	continuing calibration verification
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
COC	Chain of Custody
COD	coefficient of determination
COPCs	chemicals of potential concern
CPR	cardiopulmonary resuscitation
CSM	conceptual site model
1,1-DCA	1,1-dichloroethane
1,2-DCA	1,2-dichloroethane
DCC	daily calibration check
1,1-DCE	1,1-dichloroethene
DCN	document control number
cis-1,2-DCE	cis-1,2-dichloroethylene
DI	de-ionized
DO	dissolved oxygen
DoD	Department of Defense
DoN	Department of the Navy
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSITMS	direct sampling ion trap mass spectrometry
DTSC	Department of Toxic Substance Control
EDD	electronic data deliverable
EDR	Environmental Data Resources
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
EWI	Environmental Work Instruction
FCN	Field Change Notice
ft	feet
ft/ft	foot vertical/foot horizontal
GC	gas chromatograph
GC/MS	gas chromatograph/mass spectrometer
GeoTracker	geographical environmental information management system

HAZWOPER	Hazardous Waste Operations and Emergency Response
HCl	hydrochloric acid
HSO	Health and Safety Officer
IATA	International Air Transportation Association
ICAL	initial calibration
ICV	initial calibration verification
ID	identification
IR	Installation Restoration
IRP	Installation Restoration Program
LCS	laboratory control sample
LDC	Laboratory Data Consultants Inc.
LQAP	Laboratory Quality Assurance Program
MACTEC	MACTEC Engineering and Consulting, Inc.
ug/L	micrograms per liter
MDL	method detection limit
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
MSL	mean sea level
mV	millivolts
N/A	not applicable
NA	not available
NAPL	non-aqueous phase liquid
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVWPNSTA	Naval Weapons Station
NEDD	Navy Electronic Data Deliverable
NFESC	Naval Facilities Engineering Service Center
NIRIS	Naval Installation Restoration Information Solution
NTU	nephelometric turbidity units
OCHCA	Orange County Health Care Agency
ORP	oxidation reduction potential
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PCE	tetrachloroethylene
pH	potential of hydrogen
PID	photoionization detector
PM	Program Manager
POC	Point of Contact
PPE	personal protective equipment
PT	proficiency testing (previously known as performance evaluation sample)
PVC	polyvinyl chloride
QA	Quality Assurance
QAO	Quality Assurance Officer
QAM	Quality Assurance Manager
QAPP	Quality Assurance Project Plan
QC	Quality Control
QL	quantitation limit

QSM	Quality Systems Manual
RPD	relative percent difference
RPM	Remedial Project Manager
RTM	Remedial Technical Manager
%RSD	percent relative standard deviation
RSD	relative standard deviation
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SI	Site Inspection
Site 75	Installation Restoration Program Site 75
SOP	standard operating procedure
SPCC	system performance check compound
SSHP	site safety and health plan
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethylene
TPH	total petroleum hydrocarbon; quantified as diesel (-d), motor oil (-mo), and gasoline (-g)
TSA	technical systems audit
UFGU	upper fine grained unit
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plans
U.S. EPA	United States Environmental Protection Agency
VC	vinyl chloride
VOA	volatile organic analytes
VOC	volatile organic compounds
WP	Work Plan

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2.0 SAP WORKSHEET #2 – SAP IDENTIFYING INFORMATION

Site Name/Number: Site 75, Naval Weapons Station (NAVWPNSTA) Seal Beach, Seal Beach, California

Operable Unit: N/A

Contractor Name: Accord MACTEC Joint Venture (AMJV)

Contract Number: N62473-09-D-2613

Contract Title: Indefinite Delivery, Indefinite Quantity Architect/Engineering Contract for storm water, incidental potable water, ground water, and waste water environmental compliance at Naval and Marine Corps installations at various locations in CA, AZ, NV, NM, UT, CO and other Federal and Department of Defense installations nationwide.

Work Assignment Number (optional): Delivery Order No. 0018

Document Control Number: AMJV-2613-0018-0002

2.1 Reference Documents

This SAP was prepared in accordance with the requirements of the *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)* (U.S. Environmental Protection Agency [EPA], 2005) and *EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5, QAMS* (EPA, 2002), and with additional guidance from:

Department of Defense Environmental Data Quality Workgroup. 2000. *Best Practices for Data Quality Oversight of Environmental Sampling and Testing Activities*. November.

_____. 2010. *Quality Systems Manual for Environmental Laboratories*, Version 4.2. October.

Department of the Navy (DoN). 2006. *Environmental Restoration Program Manual (NERP)*. August.

_____. 2009. *Navy Environmental Compliance Sampling and Field Testing Procedures Manual, Rev. 1*. NAVSEA T0300-AZ-PRO-010. August.

Navy Facilities Engineering Command Southwest (NAVFAC SW). 2001. *Environmental Work Instruction No. 1 (3EN2.1). Chemical Data Validation*. November.

_____. 2005. *Environmental Work Instruction No. 6 (EVR.6). Environmental Data Management and Required Electronic Delivery Standards*. April.

_____. 2006. *Environmental Work Instruction No. 2 (EVR.2). Review, Approval, Revision and Amendment of Sampling and Analysis Plans (SAPs)*. April.

_____. 2007. *Environmental Work Instruction No. 4 (EVR.4). Implementing and Maintaining the Comprehensive Response, Compensation and Liability Act (CERCLA) Administrative Record (AR) and Compendium at NAVFAC Southwest*. May.

_____. 2010. *Environmental Work Instruction No. 3 (EV3.3). Selecting an Environmental Laboratory That Meets Environmental Restoration Program Requirements*. August.

_____. 2011. *Environmental Work Instruction No. 2 (EV3.2). Review, Approval, Revision and Amendment of Sampling and Analysis Plans (SAPs)*. January.

Naval Facilities Engineering Service Center (NFESC). 1999. *Navy Installation Restoration (IR) Chemical Data Quality Manual (CDQM)*. September.

U.S. Environmental Protection Agency (EPA). 1988. *CERCLA Compliance with Other Laws Manual, Draft Guidance*. EPA/540/G-89/006. Office of Emergency and Remedial Response, Washington, DC. August.

_____. 1994. *Guidance for the Data Quality Objectives (DQO) Process*, EPA QA/G-4, Final, September 1994.

_____. 2000. *Guidance for the DQOs Process.* Office of Environmental Information, EPA/600/R-96/055. EPA QC/G-4. August.

_____. 2002. *Guidance for Quality Assurance Project Plans*, EPA QA/G-5. December.

_____. 2004. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA 540/R-94/012. February.

_____. 2005. *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)*, EPA-505-B-04-900A. March.

_____. 2006. *Guidance on Systematic Planning Using the DQO Process.* EPA QA/G-4. Office of Environmental Information EPA/240/B-06/001. February.

_____. 2007. *Test Methods for Evaluation of Solid Wastes*, SW-846, Update IV.

_____. 2008. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, June.

2.2 Regulatory Program

The Navy conducts site investigations at NAVWPNSTA Seal Beach under the Installation Restoration (IR) Program, in accordance with Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act. The lead federal agency is the Department of the Navy (DoN). The California Environmental Protection Agency Department of Toxic Substance Control (DTSC) and the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) are the lead regulatory agencies providing project support and oversight.

2.3 Type of SAP

This is a Project-Specific SAP.

2.4 Scoping Sessions

Scoping Session	Date
Project Kickoff Meeting	October 12, 2010
Partnering Meeting to Resolve Comments	June 1, 2011

2.5 Relevant SAP

List dates and titles of any SAP documents written for previous site work that are relevant to the current assessment.

Title	Date
No Previous SAP Applicable	

2.6 Project Stakeholders

Primary stakeholders in this project include the DoN, RWQCB and DTSC. Additional stakeholders may be identified during the course of this assessment.

2.7 Lead organization

As lead agency, NAVFAC SW will be responsible for ensuring the collection of representative media samples, accurate analysis of samples, verification and independent third-party validation of data, and archival and reporting of data in accordance with this SAP (see Worksheet #7 for detailed list of data users).

2.8 Omitted SAP Elements

SAP elements or required information that has been omitted because they are either not applicable to this project or are provided elsewhere, are listed below:

No special training is required for this SAP (Worksheet #8).

2.9 Not Applicable SAP Worksheets

SAP elements and required information that are not applicable to the project are noted below. Further explanation is provided on the previous page and in the appropriate SAP worksheet(s).

UFP-QAPP Worksheet #	Required Information	Crosswalk to Related Information
A. Project Management		
Documentation		
1	Title and Approval Page	
2	Table of Contents SAP Identifying Information	
3	Distribution List	
4	Project Personnel Sign-Off Sheet	
Project Organization		
5	Project Organizational Chart	
6	Communication Pathways	
7	Personnel Responsibilities and Qualifications Table	
8	Special Personnel Training Requirements Table	Worksheet #2, Subsection 2.8
Project Planning/ Problem Definition		
9	Project Planning Session Documentation (including Data Needs tables) Project Scoping Session Participants Sheet	
10	Problem Definition, Site History, and Background. Site Maps (historical and present)	
11	Site-Specific Project Quality Objectives	
12	Measurement Performance Criteria Table	
13	Sources of Secondary Data and Information Secondary Data Criteria and Limitations Table	
14	Summary of Project Tasks	
15	Reference Limits and Evaluation Table	
16	Project Schedule/Timeline Table	
B. Measurement Data Acquisition		
Sampling Tasks		
17	Sampling Design and Rationale	
18	Sampling Locations and Methods/ SOP Requirements Table Sample Location Map(s)	
19	Analytical Methods/SOP Requirements Table	
20	Field QC Sample Summary Table	
21	Project Sampling SOP References Table Sampling SOPs	
22	Field Equipment Calibration, Maintenance, Testing, and Inspection Table	

Table Continues

TABLE 2.9 CONTINUED

UFP-QAPP Worksheet #	Required Information	Crosswalk to Related Information
Analytical Tasks		
23	Analytical SOPs Analytical SOP References Table	
24	Analytical Instrument Calibration Table	
25	Analytical Instrument and Equipment Maintenance, Testing, and Inspection Table	
Sample Collection		
26	Sample Handling System, Documentation Collection, Tracking, Archiving and Disposal Sample Handling Flow Diagram	
27	Sample Custody Requirements, Procedures/SOPs Sample Container Identification Example COC Form and Seal	
QC Samples		
28	QC Samples Table Screening/Confirmatory Analysis Decision Tree	
Data Management Tasks		
29	Project Documents and Records Table	
30	Analytical Services Table Analytical and Data Management SOPs	
C. Assessment Oversight		
31	Planned Project Assessments Table Audit Checklists	
32	Assessment Findings and CA Responses Table	
33	QA Management Reports Table	
D. Data Review		
34	Verification (Step I) Process Table	
35	Validation (Steps IIa and IIb) Process Table	
36	Validation (Steps IIa and IIb) Summary Table	
37	Usability Assessment	

Acronyms:

CA	Corrective Action
COC	Chain of Custody
SOP	Standard Operating Procedure
QA	Quality Assurance
QC	Quality Control

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3.0 SAP WORKSHEET #3 – DISTRIBUTION LIST

Name of SAP Recipients	Title/Role	Organization	Telephone Number (Optional)	E-mail Address or Mailing Address
Ms. Brenda Reese	Project RPM	NAVFAC SW	619.532.4209	brenda.reese@navy.mil 1220 Pacific Highway Bldg. 128, Mail Room San Diego, CA 92132 Attn: Code JE30.BR
Ms. Pei-Fen Tamashiro	IRP Coordinator	NAVFAC SW	562.626.7897	pei-fen.tamashiro@navy.mil 800 Seal Beach Boulevard, Building 230 Seal Beach, CA 90740 Attn: Code N45W
Mr. John Broderick	Agency Representative	RWQCB	951.782.4494	jbroderick@waterboards.ca.gov 3737 Main St., Suite 500 Riverside, CA 92501-3348
Mr. Stephen Niou	Agency Representative	DTSC	714.484.5458	SNiou@dtsc.gov 5796 Corporate Avenue Cypress, CA 90630-4732
Mr. Narciso Ancog	QAO	NAVFAC SW	619.532.3046	narciso.ancog@navy.mil 1220 Pacific Highway Bldg. 128, Mail Room San Diego, CA 92132 Attn: Code EVR.NA
Ms. Diane Silva	Administrative Records	NAVFAC SW	619.532.3676	diane.silva@navy.mil 1220 Pacific Highway Bldg. 128, Mail Room San Diego, CA 92132 ATTN.: Code EVR.DS FISC Bldg. 1, 3rd Floor

Table Continues

SAP WORKSHEET #3 - DISTRIBUTION LIST – CONTINUED

Name of SAP Recipients	Title/Role	Organization	Telephone Number (Optional)	E-mail Address and/or Mailing Address
Mr. Qihai Chen	Project Manager	AMJV	858.771.3559	qchen@accordeng.com 6050 Santo Road, Suite 175 San Diego, CA 92124
Mr. Rod Reeve	Program Manager	AMJV	858.771.3537	rreeve@accordeng.com 6050 Santo Road, Suite 175 San Diego, CA 92124
Mr. Tim Shields	Program Manager	BRADY	858.634.4514	tshields@rbrady.net 3710 Ruffin Road San Diego, CA 92123
Mr. Jesse MacNeill	QAM	BRADY	858.634.4549	jmacneill@rbrady.net 3710 Ruffin Road San Diego, CA 92123
Mr. Ye Myint	Project Manager	EMAX Laboratories, Inc.	310.618.8889	ymyint@emaxlabs.com 1835 W 205th. St. Torrance, CA 90501
Ms. Linda Rauto	Operations Manger	LDC, Inc.	760.634.0437	lrauto@lab-data.com 7750 El Camino Real, Ste 2L Carlsbad, CA 92009

Acronyms:

AR	Administrative Record	POC	Point of Contact
AMJV	Accord MACTEC Joint Venture	QAM	Quality Assurance Manager
BRADY	Richard Brady & Associates	QAO	Quality Assurance Officer
DTSC	Department of Toxic Substances Control	RPM	Remedial Project Manager
IRP	Installation Restoration Program	RTM	Remedial Technical Manager
LDC	Laboratory Data Consultants, Inc.	RWQCB	Regional Water Quality Control Board Santa Ana Region
NAVFAC SW	Naval Facilities Engineering Command Southwest		
PM	Project Manager	SAP	Sampling and Analysis Plan

4.0 SAP WORKSHEET #4 – PROJECT PERSONNEL SIGN-OFF SHEET

Key personnel will sign this sheet as part of the readiness review conducted prior to field work.

Name	Organization/Title/Role	Telephone Number (optional)	Signature/E-mail receipt	SAP Section Reviewed	Date SAP Read
Mr. James Albright	AMJV Site HSO	714.241.7200		All Worksheets	
Mr. Fred Essig	BRADY Project Manager	858.634.4552		All Worksheets	
Mr. Ye Myint	EMAX Laboratories, Inc. Project Manager	310.618.8889		Worksheets 12, 15,19, 20, 22, 23, 24, 25, 26, 27, 28, 30, 34, 35	
Ms. Linda Rauto	LDC, Inc. Operations Manger	760.634.0437		Worksheets 12, 15, 20, 22, 23, 24, 25, 28, 30, 34, 35, 36	

Acronyms:
AMJV Accord-MACTEC Joint Venture
BRADY Richard Brady & Associates
HSO Health and Safety Officer
LDC Laboratory Data Consultants Inc.

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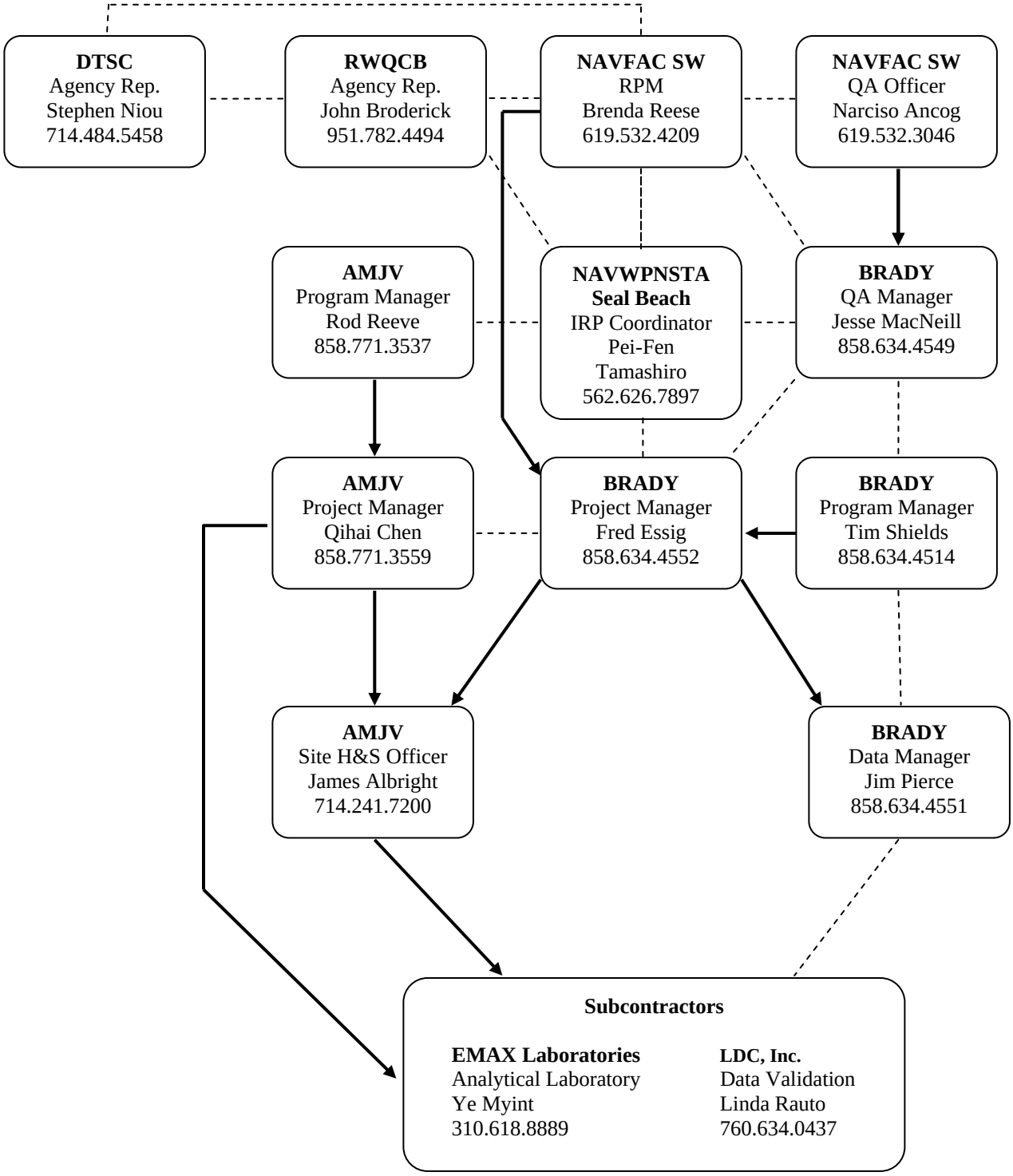
5.0 SAP WORKSHEET #5 – PROJECT ORGANIZATIONAL CHART

Lines of Authority ——— Lines of Communication .....



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6.0 SAP WORKSHEET #6 – COMMUNICATION PATHWAYS

Communication Drivers	Responsible Affiliation	Name	Phone Number and/or E-mail	Procedure
FCN	BRADY PM	Fred Essig	858.634.4552 fessig@rbrady.net	The field team leader will document any deviation from the SAP, including minor changes, major changes, or significant changes, by notifying the Project Team QAM and PM by phone and e-mail within 24 hours and will submit a FCN within 48 hours. All completed FCNs will be included as an appendix in the final report. The Project Team QAM will inform the NAVFAC SW QAO of any major or significant changes formalized in an FCN.
	AMJV PM	Qihai Chen	858.771.3559 qchen@accordeng.com	
Field Audit	BRADY QAM	Jesse MacNeill	858.634.4549 jmacneill@rbrady.net	The Project Team QAM may conduct a field audit during project fieldwork. Audit results are maintained in Project Team's project and QA files. Any issues requiring corrective action will be documented and assigned an appropriate response period.
Stop Work	BRADY QAM	Jesse MacNeill	858.634.4549 jmacneill@rbrady.net	The Project Team's QAM, PM, HSO, NAVFAC SW RPM, or NAVFAC SW QAO may stop work in response to any serious quality or safety related issue, if warranted. In this case, the issue and proposed corrective action will be documented with planned timing for implementation. The Stop Work Notice will be submitted to the NAVFAC SW QAO and RPM by e-mail within 24 hours.
	BRADY PM	Fred Essig	858.634.4552 fessig@rbrady.net	
	AMJV PM	Qihai Chen	858.771.3559 qchen@accordeng.com	
	AMJV HSO	James Albright	714.241.7200 JAlbright@accordeng.com	
	NAVFAC SW RPM	Brenda Reese	619.532.4209 brenda.reese@navy.mil	
	NAVFAC SW POC	Pei-Fen Tamashiro	562.626.7897 pei-fen.tamashiro@navy.mil	
	NAVFAC SW QAO	Narciso Ancog	619.532.3046 narciso.ancog@navy.mil	

Table Continues

Communication Drivers	Responsible Affiliation	Name	Phone Number and/or E-mail	Procedure
Notification of Non-Usable Analytical Data	Program Chemist	Jesse MacNeill	858.634.4549 jmacneill@rbrady.net	If significant problems are identified by the laboratory or the project team that impact the usability of the data (i.e. the data is rejected or the data quality objectives are not met), the Program Chemist will notify the NAVFACSW RPM and the NAVFACSW QAO within 24 hours or the next business day.

Acronyms:

AMJV	Accord MACTEC Joint Venture		
BRADY	Richard Brady & Associates	QA	Quality Assurance
FCN	Field Change Notice	QAM	Quality Assurance Manager
HSO	Health and Safety Officer	QAO	Quality Assurance Officer
NAVFAC SW	Naval Facilities Engineering Command Southwest	RPM	Remedial Project Manager
PM	Project Manager	SAP	Sampling and Analysis Plan

7.0 SAP WORKSHEET #7 – PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE

Name	Title/Role	Organizational Affiliation	Responsibilities
Qihai Chen	Project Manager	AMJV	Responsible for implementing all activities specified in the Delivery Order. Supervises preparation of the WP and SAP by the Project Team. Responsible for ensuring AMJV's field team compliance with WP, SAP, SSHP and APP. Responsible for maintaining effective and timely communication between field team and AMJV management.
Jesse MacNeill	QA Manager	BRADY	Responsible for ensuring the Project Team's programmatic and project-specific compliance with QA policies generally, and this SAP specifically. Ensures SAP conforms to current NAVFAC SW and UFP-QAPP requirements. Ensures the Project Team maintains proper training, certification and experience to execute project-specified tasking. Responsible for Project Team's environmental quality, including oversight to ensure compliance with Federal, State and local regulatory requirements and with Department of Navy policy; development of project plans; review of project-specific requirements as outlined in SAP; and support to Project Team.
Jim Pierce	Database Manager	BRADY	Responsible for developing, monitoring and maintaining the project database under guidance of Project Team PM and QAM. Ensures timely and accurate upload of project data to NEDD/NIRIS. Works with the QAM to resolve sample identification issues and geospatial data issues during fieldwork execution.
James Albright	H&S Manager/ On-Site Health & Safety Officer	AMJV	Responsible for implementing the Health and Safety Plan, determining appropriate site control measures, and identifying personal protection levels. Leads daily safety briefings for the Project Team, subcontractor personnel and site visitors.
Fred Essig	Project Manager	BRADY	Responsible for ensuring BRADY's field team compliance with WP, SAP, SSHP and APP. Responsible for maintaining effective and timely communication between field team and BRADY management.
Tim Shields	Environmental Program Manager	BRADY	Responsible for assigning appropriately trained and qualified staffing resources to project and for providing technical direction and field oversight to BRADY staff during SAP development and in execution of fieldwork. Responsible for ensuring effective and timely communication between Project Team and NAVFAC customer(s) and NAVWPNSTA Seal Beach facility representatives.
Narciso Ancog	QAO	NAVFAC SW	The QAO provides government oversight of the QA program, including review and approval of SAPs. The QAO has the authority to suspend affected projects or site activities if NAVFAC SW-approved quality requirements are not maintained.

Table Continues

SAP WORKSHEET # 7 - PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE – CONTINUED

Name	Title/Role	Organizational Affiliation	Responsibilities
Brenda Reese	Remedial Project Manager	NAVFAC SW	The RPM is the Navy manager directly responsible for project execution and coordination with base representatives, regulatory agencies and the NAVFAC SW management team.
Pei-Fen Tamashiro	Installation Restoration Program Coordinator	NAVFAC SW	Primary NAVWPNSTA Seal Beach point of contact for all project activities occurring on or near the facility. Ensures that project work is performed in accordance with NAVWPNSTA Seal Beach policies and procedures. The NAVWPNSTA Seal Beach POC has stop work authority.
Ye Myint	Project Manger	EMAX Laboratories, Inc.	Responsible for delivering analytical services that meet the requirements of this SAP. Reviews and understands all analytical requirements of this SAP. Works with the Project Team's QAM to confirm sample delivery schedules and ensure performance according to specifications. Reviews the laboratory data package before it is delivered to the Project Team QAM.
Erlinda Rauto	Operations Manager	LDC, Inc.	Conducts independent third-party validation of analytical data received from laboratory. Assures the data end user of known and documented data quality.
Andrew Hillstrand	Driller	Boart Longyear Environmental & Infrastructure Drilling Services	Responsible for ensuring that subcontractor activities are performed in accordance with state regulations and standards.

Acronyms:

AMJV	Accord MACTEC Joint Venture	PM	Project Manager
APP	Accident Prevention Plan	QA	Quality Assurance
BRADY	Richard Brady & Associates	QAO	Quality Assurance Officer
H&S	Health and Safety	RPM	Remedial Project Manager
LDS	Laboratory Data Consultants, Inc.	SAP	Sampling and Analysis Plan
NAVFAC SW	Facilities Engineering Command Southwest	SSHP	Site Specific Health and Safety Plan
NAVWPNSTA	Naval Weapons Station	UFP-QAPP	Uniform Policy for Quality Assurance Project Plans
NEDD/NIRIS	Navy Electronic Data Deliverable/Naval Installation Restoration Information Solution	WP	Work Plan

8.0 SAP WORKSHEET #8 – SPECIAL PERSONNEL TRAINING REQUIREMENTS TABLE

No specialized training is required for this project.

The Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements, as described in Title 29 Code of Federal Regulations (CFR) §1910.120, apply to those persons conducting field work. The regulation states that all personnel involved in characterization or remediation of an uncontrolled hazardous waste site shall be required to have 40 hours of certified training and three days of supervised field experience. In compliance with Title 29 CFR §1910.120, "general site workers," those individuals performing field activities such as collecting media samples, will have completed the appropriate OSHA HAZWOPER training course.

Personnel who are on site to perform occasional inspection and sampling activities and are unlikely to experience exposure over the permissible exposure limit and published exposure limits may be considered "workers on site only occasionally for a specific limited task." These workers must have 24 hours of training and one day of actual field experience. Employees who have minimal (low risk) exposure or low probability of exposure to hazardous substances are covered by other OSHA standards, such as the Hazard Communication standard, Title 29 CFR §1910.120.

All Project Team site workers will be 40-hour trained and will meet the minimum standard for supervised field experience. In compliance with regulatory procedures related to training, at least one supervisor having received the OSHA 8-hr Hazardous Waste Supervisor training will be on-site at all times. At least two Project Team personnel, properly trained and certified in adult first aid and CPR and trained in the blood borne pathogens, will be assigned and on-site at all times work is being performed.

All drilling and sampling activities will be supervised by a professional geologist licensed in California. Drilling will be conducted by a C-57 licensed driller.

Geophysical and surveying equipment will be operated in accordance with manufacturer's instructions by qualified personnel. Permanent monitoring well locations and elevations will be surveyed by a Professional Land Surveyor.

9.0 SAP WORKSHEET #9 – PROJECT SCOPING SESSION PARTICIPANTS SHEET

9.1 Internal Project Kickoff Meeting with NAVFAC SW, NAVWPNSTA Seal Beach and Contractor Team

Project Name: Site 75 PA/SI **Projected Date(s) of Sampling: 2011**			**Site Name: Site 75** **Site Location: NAVWPNSTA Seal Beach, California** **NAVFAC SW RPM: Brenda Reese**		
Date of Session: October 12, 2010 **Scoping Session Purpose: Internal Project Kickoff Meeting with NAVFAC SW and Contractor Team**					
Name	**Title**	**Affiliation**	**Phone #**	**E-mail Address**	**Project Role**
Brenda Reese	RPM	NAVFAC SW	619.532.4209	brenda.reese@navy.mil	RPM
Stephen Banister	Intern	NAVFAC SW	NA	stephen.banister@navy.mil	RPM Support
Scott Kehe	FEAD POC	NAVFAC SW	949.726.2506	scott.kehe@navy.mil	FEAD POC
Pei-Fen Tamashiro	IRP Coordinator	NAVWPNSTA Seal Beach	562.626.7897	pei-fen.tamashiro@navy.mil	POC
Jay Chesser	Vice President	AMJV	619.402.4084	jchesser@accordeng.com	Program Manager
Tim Shields	Program Manager	BRADY	858.634.4514	tshields@rbrady.net	Program Manager
Tara Lieberman	Environmental Scientist	BRADY	858.634.4558	tlieberman@rbrady.net	Project Support

Acronyms:

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady & Associates
FEAD	Facility Engineering and Accusations Division
IRP	Installation Restoration Program
NA	not available
NAVFAC SW	Naval Facilities Engineering Command Southwest
POC	Point of Contact
RPM	Remedial Project Manager

9.1.1 Comments/Decisions

Team discussed project roles and responsibilities and developed preliminary technical strategy for project and discussed baseline project schedule.

9.1.2 Action Items

Continue development of the technical strategy and proceed with development of the Preliminary Draft Work Plan and Sampling and Analysis Plan.

9.2 Partnering Meeting to Resolve Comments on Draft Work Plan/SAP

Project Name: Site 75 PA/SI **Projected Date(s) of Sampling: Begin July 2011**			**Site Name: Site 75** **Site Location: NAVWPNSTA Seal Beach, California** **NAVFAC SW RPM: Brenda Reese**		
Date of Session: June 1, 2011 **Scoping Session Purpose: Discuss and resolve agency comments on Draft Work Plan**					
Name	**Title**	**Affiliation**	**Phone #**	**E-mail Address**	**Project Role**
Brenda Reese	RPM	NAVFAC SW	619.532.4209	brenda.reese@navy.mil	RPM
Pei-Fen Tamashiro	IRP Coordinator	NAVWPNSTA Seal Beach	562.626.7897	pei-fen.tamashiro@navy.mil	POC
Stephen Niou	Agency Rep.	DTSC	714.484.5458	sniou@dtsc.ca.go	POC
John Broderick		RWQCB	951.782.4494	jbroderick@waterboards.ca.gov	POC
Qihai Chen	Project Manager	AMJV	858.771.3559	qchen@accordeng.com	Project Manager
Tim Shields	Program Manager	BRADY	858.634.4514	tshields@rbrady.net	Program Manager
Rain Yu Zeng	QQ Mgr.	AMJV	858.771.3518	YZeng@accordeng.com	POC

Acronyms:

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady & Associates
DTSC	Department of Toxic Substance Control
IRP	Installation Restoration Program
NAVFAC SW	Naval Facilities Engineering Command Southwest
POC	Point of Contact
RPM	Remedial Project Manager
RWQCB	Regional Water Quality Control Board

9.2.1 Comments/Decisions

- Remove the words “and up-gradient” from Worksheet 11 Step 5, Decision Rule 1.
- The first boring will be located approximately 50 feet east of former KAYO-SB. It will be drilled to approximately 310 feet bgs. A 3-inch-diameter well will be installed in the borehole at the depth where contaminant screening shows the highest concentrations.
- Well pairs will be installed at two other locations within the Navy fence line, approximately 400 feet to the northwest and southwest of former KAYO-SB, planned to target two depths with highest concentrations.
- Single wells will be installed at two locations outside the fence line, planned to target depth with highest concentrations.
- Depths and distribution of wells will be optimized and finalized based on real-time screening data.
- If budget permits, 4-inch-diameter wells will be installed instead of 3-inch-diameter.

9.2.2 Action Items

Revise Work Plan and SAP according to decisions from this meeting.

10.0 SAP WORKSHEET #10 – PROBLEM DEFINITION

This worksheet provides the first of seven steps of the data quality objective (DQO) process as detailed by the United States Environmental Protection Agency (U.S. EPA) (U.S. EPA, 2006). The DQO process is designed to define the project objectives and assure that the quality of data collected supports the objectives. The main objective of this project is to conduct a PA/SI to update and refine the conceptual site model (CSM); with primary focus on resolving the source(s) of VOCs in groundwater, and the associated potential responsible parties (PRPs). Data collected during this investigation will be employed to support these objectives.

Inherent in the development of DQOs is a systematic and logical approach intended to yield an efficient sampling design based on accepted levels of potential decision errors. The CSM is the basis for Step 1 of the DQO process. The following subsections provide a site description of Site 75 developed to formulate the CSM presented in the work plan (WP) and summarized in Section 10.2.

Project DQOs for Site 75 were developed in general accordance with the seven-step DQO process presented in EPA guidance documents (EPA, 1994 and 2000). These steps are identified below.

Step 1. State the problem. Clearly describe the problem(s) to be studied.

Step 2. Identify decisions. Identify the questions the study will attempt to resolve and what actions may result.

Step 3. Identify decision inputs. Identify data inputs (e.g., analytical results) and guidance inputs (e.g., regulatory screening levels) required to make the decisions identified in Step 2.

Step 4. Define study boundaries. Define the spatial and temporal boundaries of the problem(s).

Step 5. Develop decision rules. Identify the logical basis for choosing among decision statements.

Step 6. Specify tolerance limits on decision errors. Define the variability related to sample collection, identification of contaminated areas, and risk assessment.

Step 7. Optimize the sampling design. Define the sampling program for collection of data.

Step 1 of the DQO process for Site 75 is detailed in the following subsections. Steps 2 through 7 are described on SAP Worksheet 11. To provide context for Step 1, the problem statement, the following background information is provided.

10.1 Site Description and History

The NAVWPNSTA Seal Beach is located in the northwest corner of Orange County, California, in the City of Seal Beach, approximately 20 miles south of Los Angeles (Figure 1). Nearby communities include the Cites of Huntington Beach, Westminster, Los Alamitos, and Garden

Grove. Comprised of 5,256 acres, NAVWPNSTA Seal Beach is a weapons and munitions loading, storage, and maintenance facility which has been operated by the Navy and its contractors since its inception in 1944. NAVWPNSTA Seal Beach consists of 230 buildings and 128 ammunition magazines providing over 500,000 square feet of ammunition storage space.

Agricultural well KAYO-SB was located on NAVWPNSTA Seal Beach, approximately 1,300 feet south of Bolsa Avenue and approximately 800 feet west of Bolsa Chica Road (Figure 2). The agricultural well was used as an irrigation source for a portion of NAVWPNSTA Seal Beach that is currently leased out for crop production. The well was drilled in 1926 to 320 feet below ground surface (bgs) and was cased to 299 feet bgs, with perforations in three intervals: 203-208, 233-240, and 297-299 feet bgs. According to a 1994 video log report, the well was originally constructed with 16-inch-diameter steel casing from ground surface to 200 ft bgs, and 14-inch-diameter steel casing below 200 ft bgs. After the video log was complete, a 12-inch-diameter steel inner casing was installed in the well and the annular space between the inner and the outer casing was backfilled with pea gravel. The inner casing was perforated beginning at approximately 200 feet bgs (Tetra Tech, 2007).

The well was destroyed in 2006. The pump motor, pump, and approximately 240 feet of 6-inch-diameter steel discharge pipe were removed. The pipe segments contained an oily residue that was likely present due to past application of lubricating oil. The day after the pump and pipe were removed, the well was tested for the presence of oil on the groundwater surface. None was detected. A video log was performed, showing that the inner casing was screened from 208.6 ft bgs to refusal on silt and sediments at 286.7 feet bgs. After the video log was completed, three groundwater samples were collected from depths of approximately 208, 240, and 280 feet bgs using low-flow sampling and analyzed by EPA Method 8260B for VOCs and by EPA Method 8015M for total petroleum hydrocarbons quantified (TPH) quantified as diesel (-d), motor oil (-mo), and gasoline (-g). The detected VOCs were: 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC). The results are summarized in the following table:

Analyte	**Units**	**208 ft bgs**	**240 ft bgs**	**280 ft bgs**
1,1,1-TCA	µg/L	1.7	0.50J	0.24J
1,1-DCA	µg/L	75	21	11
1,1-DCE	µg/L	170	46	23
1,2-DCA	µg/L	0.37J	ND	ND
cis-1,2-DCE	µg/L	0.57J	ND	ND
PCE	µg/L	15	4.7	2.3
TCE	µg/L	140	43	22
VC	µg/L	0.43J	ND	ND

Notes:
µg/L – micrograms per liter; J – estimated value; ND – not detected

It was determined that the thickness of the steel well casing precluded the use of a tearing device to destroy the well casing in advance of grouting. With Orange County Health Care Agency (OCHCA) concurrence, the decision was made to delete the perforation of the well casing from the destruction process, and to proceed with grouting the well. An estimated total of 9.5 cubic yards of grout was pumped into the well using the tremie method (Tetra Tech, 2007).

The source of the VOCs detected in the well is unknown.

10.2 Land Use

Agricultural well KAYO-SB was located on NAVWPNSTA Seal Beach, approximately 1,300 feet south of Bolsa Avenue and approximately 800 feet west of Bolsa Chica Road (Figure 2). The area to the east of Bolsa Chica Road and NAVWPNSTA Seal Beach is mixed residential and industrial use, including the Boeing Huntington Beach facility that has experienced a VOC release to groundwater. The investigation at the Boeing facility has reported several aquifers with different gradients, with most aquifers (upper sands and Alpha) flowing generally towards the west and the deepest (Beta) aquifer flowing generally towards the east.

10.3 Conceptual Site Model

The initial CSM for Site 75 was compiled from historical research, site visits, and from available hydrogeological and chemical data from previous investigations described in Worksheet #2. A more refined CSM will be developed based on the results of this investigation. The initial CSM is presented in the following sections.

10.3.1 Potential Sources and Contaminants

Site 75 is associated with a former agricultural well KAYO-SB located near the eastern boundary of NAVWPNSTA Seal Beach in an unimproved area of the base. Well KAYO-SB was used as an irrigation source for a portion of NAVWPNSTA Seal Beach leased out for crop production. Research conducted for this investigation did not reveal any prior site history associated with chemical storage, disposal, release, or generation at Site 75 in connection with the chemicals of potential concern (COPCs) detected in groundwater collected from KAYO-SB.

Numerous potential off-site sources are also under consideration. An environmental data records search obtained from Environmental FirstSearch Network for this project identified 233 sites within a 1-mile radius of the location of former agricultural well KAYO-SB (Work Plan Appendix C). Identified off-site sites include waste streams and/or releases of chlorinated petroleum hydrocarbons, several of which have the potential for transport to the site based upon current identified groundwater conditions.

The Environmental FirstSearch report was designed to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) and the American Society for Testing and Materials Standard Practice for Environmental Site Assessments (E 1527-05). Several agency files for operations within this 1-mile radius which had target VOCs reported in soil or groundwater investigations were reviewed by the Project Team. Due to schedule constraints, all agency files were not available at the time of this Work Plan submittal.

Applicable file review results will be incorporated into an updated CSM and presented in the SI Summary Report.

10.3.2 Geology

The site is located in the Los Angeles sedimentary basin within the Bolsa-Sunset Gap, a 2 to 3 mile wide topographic low formed between the Bolsa Chica Mesa to the southeast and Landing Hill to the northwest. Current topography in the area is reflective of the late Pliocene and Pleistocene movement along the northwest-trending Newport-Inglewood structural zone.

The late Pliocene and Pleistocene sediment deposition in the vicinity of the site was derived from erosion of uplifting mountain ranges followed by sediment transport and ultimate deposition in the area as interbedded sands, silts, and clays in a marine embayment of moderate to shallow depths.

For the purposes of this investigation, two geologic units are discussed, the Recent Alluvium and the upper Pleistocene Lakewood Formation.

Historical Boeing site investigations are referenced in this section due to the extensive Boeing investigation footprint adjacent the site to the northeast, the areal extent of the Boeing data, the large number of wells and borings, and the depth compatibility with former well KAYO-SB. This soil and groundwater study is designed to investigate to approximately 310 feet bgs essentially matching the total depth of well KAYO-SB.

Geological investigation of the Boeing site immediately to the north of Site 75 (Halley & Aldrich, 2009c), revealed as many as four shallow, water-bearing intervals. These four water bearing intervals are separated by finer grained aquitard zones and all lie within the Recent Alluvium extending variably from the surface to approximately 130 feet bgs. The four water bearing zones, are referred to as the upper fine grained unit (UFGU) (silt/clay 0 – 45 feet bgs), the 45-foot sand (45 – 55 feet bgs), the 60-foot sand (60 – 80 feet bgs), and the intermittent 90-foot sand (90 – 95 feet bgs). The grain size distribution within these water bearing intervals ranges from the silt and clay of the UFGU to medium grained sands and gravels of the 60-foot sand. Separating the four water bearing units are aquitard one, aquitard two, and aquitard three composed primarily of interbedded clays and silts (Figure 3).

The upper Pleistocene Lakewood Formation lies beneath the Recent Alluvium reportedly extending beyond 500 feet below grade. Within the Lakewood Formation, the Alpha Aquifer, composed primarily of poorly graded, fine to medium sand and gravels extends from approximately 130 to 200 feet bgs. Aquitard 4, composed of interbedded silts and clays, separates the Alpha Aquifer from the underlying Beta Aquifer. The Beta Aquifer, composed of poorly graded medium to coarse sand and gravel and minor lenses of silt and clay, extends from approximately 230 feet to approximately 300 feet where the interbedded clay and silt of aquitard 5 begins.

10.3.3 Hydrogeology

The data from the Boeing site indicates there are four shallow water-bearing intervals identified beneath the nearby Boeing site referred to collectively as the shallow water-bearing zones. Individually, these zones are identified as the UFGU, 45-foot sand, 60-foot sand, and the 90-foot sand/silt.

The Upper Fine Grained Unit

Groundwater elevations measured in the UFGU show groundwater elevations ranging from 8.70 to 12.43 feet above MSL. Within the UFGU, the groundwater gradient direction is westerly at 0.002 to 0.004 foot vertical/foot horizontal (ft/ft) reportedly subject to localized influence from remedial activities.

The 45-Foot Sand

Groundwater elevations measured in the 45-foot sand show groundwater elevations ranging from 8.33 to 11.58 feet above MSL. The approximate groundwater gradient within the 45-foot sand is westerly to southwesterly at 0.002 ft/ft.

The 60-Foot Sand

Groundwater elevations measured in the 60-foot sand show groundwater elevations ranging from 6.44 to 11.05 feet above MSL. The approximate groundwater gradient within the 45-foot sand is southwesterly at 0.001ft/ft.

The 90-Foot Sand

Cross sections through the Boeing site terminating closest to Site 75 suggest the 90-foot sand, although observed to the north of the site, may not exist in the area of well KAYO-SB. According to historical data, the horizontal groundwater head gradient is 0.002 ft/ft and the flow direction is to the south-southwest in the 90-foot sand where present. Groundwater measurements from Boeing site wells screened in the 90-foot sand show groundwater elevations from 8 to 10 feet above MSL to -1.5 feet below MSL.

Historical groundwater elevation measurements do not show strong evidence of downward vertical migration from the 90-foot sand to the underlying Alpha Aquifer. In general however, the other shallow water bearing zones do show evidence of downward vertical migration.

Underlying the shallow, water-bearing units are the Alpha Aquifer and Beta Aquifer of the Lakewood Formation. Reportedly, the Alpha and Beta Aquifers are pumped periodically for irrigation from NAVWPNSTA Seal Beach wells. The aquifers are also subject to pumping by the City of Huntington Beach from production wells located to the north and northeast of the Site as part of the City's water supply (Haley & Aldrich, 2009c).

Alpha Aquifer

Groundwater gradient in the Alpha Aquifer is reportedly influenced by the pumping of the City of Huntington Beach production wells located north and northeast of the site. Groundwater gradient ranges from 0.0002 to 0.0006 ft/ft, with a predominantly flowing eastward direction but, the groundwater flow direction will vary from northeast to west in response to pumping from supply wells.

Beta Aquifer

As with the Alpha Aquifer, water levels and groundwater flow directions in the Beta Aquifer are influenced by the pumping of the City of Huntington Beach production wells located north and northeast of the Boeing site. Historical monitoring data show groundwater elevation changes ranging from -15.03 to -40.53 feet MSL. The beta gradient was reported at 0.002 ft/ft, with groundwater flowing to the northeast and east northeast (Haley & Aldrich, 2009c).

10.3.4 Potential Migration Pathways

Potential transport pathways for the dissolved volatile organic compounds (VOCs) present at Site 75 include the multiple transmissive intervals made up of the more permeable water bearing intervals beneath the site (Figure 3).

The regional groundwater gradient direction is generally westerly, but data from nearby sites show there may be significant directional variation with depth possibly influenced by periodic pumping, saltwater intrusion mitigation, and potential localized effects due to remedial operations (Figure 4).

10.3.5 Potential Receptors

NAVWPNSTA Seal Beach is a weapons and munitions loading, storage, and maintenance facility which has been operated by the Navy and its contractors since its inception in 1944. In addition to industrial facilities NAVWPNSTA Seal Beach has wetlands, RV parks, housing and office spaces. The Navy's proposed future use for the entire facility will remain essentially the same as it is now, with controlled access restricted to badged personnel. There are currently no plans for redevelopment into residential land use.

Human receptors are relatively unlikely to be affected by the contaminant plume at this site as follows:

- Surface water and direct contact by humans is unlikely also due to the downward migration tendencies of the contaminant suite at issue.
- The only known supply well (KAYO-SB) in the vicinity has been destroyed, closing the pathway to receptors linked to agricultural supply.

However, human consumption of groundwater could occur depending on where the contamination is and how it is migrating.

Ecological receptors

Ecological receptors are precluded from a completed pathway at Site 75 for the following reasons:

- Ecological receptors are unlikely to come in direct contact with contaminants in this plume because of the probable downward migration characteristics of the chlorinated solvents comprising the plume. Surface water is unlikely to be affected.
- The only known supply well in the vicinity has been abandoned, closing the pathway to ecological receptors that may come in contact and or consume irrigation water or agricultural produce.

10.4 Step 1 – State the Problem

Dissolved-phase VOCs (1,1,1-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCA, cis-1,2-DCE, PCE, TCE and VC) were identified in samples taken in September 2006 from agricultural well KAYO-SB. The source of the VOCs is unknown.

The location of former agricultural Well KAYO-SB is near the property line in the southeastern portion of the facility; which is adjacent to an active industrial area in the City of Huntington Beach (Figure 4). An environmental data records report obtained for this project identified numerous potential off-site sources within a 1-mile radius of the former agricultural Well KAYO-SB (Work Plan Appendix C). Identified non-Navy sites include chemical releases of VOCs which have the potential to impact groundwater in the vicinity of the facility property line.

The objectives of this investigation are listed below along with related problem statements.

Objective: Evaluate whether or not the PCE, TCE, DCE, TCA, DCA, and/or VC previously discovered in groundwater from a former agricultural well located on Navy property originate from a source within the Navy property line.

Problem Statement:

- There is insufficient existing data to determine whether or not target VOCs detected in former agricultural Well KAYO-SB originate from a Navy or non-Navy source.

10.4.1 Members of the DQO Planning Team

The DQO planning team identified to address the problems at the site includes the NAVFAC RPM and QAO, NAVWPNSTA Seal Beach Point of Contact (POC), regulatory agency partners from DTSC and RWQCB, and technical support from the Project Team.

10.4.2 Available Resources

The Department of the Navy (DoN) has allocated the budget that is required for this assessment. The project is planned for an approximate 21-month duration. This timeframe includes preparation and review of this SAP, field investigation, data validation and interpretation, and preparation of the final PA/SI report**.**

11.0 SAP WORKSHEET #11 – PROJECT QUALITY OBJECTIVES/ SYSTEMATIC PLANNING PROCESS STATEMENTS

This worksheet provides Steps 2 through 7 of the DQO process as detailed by the U.S. EPA (U.S. EPA, 2006). The process is used to determine the type, quantity, and quality of the data necessary to support decision-making regarding current site conditions and future site management decisions.

Inherent in the development of DQOs is a systematic and logical approach intended to yield an efficient sampling design based on accepted levels of potential decision errors. The following subsections provide the primary study goal of the proposed assessment, the information inputs and analytical approach that will be used to achieve the study goal, as well as the performance criteria that will be used to assure that the data used to make project decisions is of sufficient quality.

11.1 Step 2 – Identify the Goals of the Study

Primary Goal: Evaluate whether or not the PCE, TCE, DCE, TCA, DCA, and/or VC previously discovered in groundwater from a former agricultural well located on Navy property originate from a source within the Navy property line.

The primary goal will be achieved by answering the following decision question:

1. Are target VOC concentrations increasing in an off-property direction from former Well KAYO-SB?

11.2 Step 3 – Identify Information Inputs

The purpose of this step is to identify sources of additional data to support project decisions. Inputs to project decisions include regulatory data, existing hydrogeologic data, and new data to be collected under this SAP.

Existing data inputs include:

- November 2010 Environmental FirstSearch report (Work Plan, Appendix C)
- Decisions made in stakeholder planning meetings (Worksheet #9)
- Historical air photos documenting site use since the 1930s
- Hydrogeologic data from the Final Well Decommissioning Report, Naval Weapons Station Seal Beach, California. (Tetra Tech, 2007)
- Information from the California RWQCB geographical environmental information management system (GeoTracker) database.

New data inputs will consist of:

- Lithologic data produced during continuous coring. Detailed geologic logs will identify transmissive water-bearing units that are potential pathways for dissolved VOC migration.

- Validated soil data to confirm residual soil contamination or non-aqueous phase liquid (NAPL), if present, that is logged by the project geologist.
- Screening data collected using field screening EPA Method 8265 to obtain a log of concentrations of VOC constituents. A detailed log of VOC concentrations will be produced by collecting samples of the continuous core approximately every 2 feet and analyzing them onsite with the direct sampling ion trap mass spectrometry (DSITMS). The VOC screening data and geologic logs will be used to optimize the design of up to nine permanent groundwater monitoring wells so that they target water-bearing units with the highest VOC concentrations.
- Validated groundwater data collected from up to nine permanent monitoring wells in the vicinity of former agricultural well KAYO-SB. Wells designs will be optimized dynamically based on geologic and VOC screening data. Groundwater samples will be collected during two monitoring events and analyzed for target VOCs using EPA Method 8260B. The purpose of this data is to assess the migration direction of target VOCs in groundwater.
- Groundwater elevation data collected from up to nine permanent monitoring wells to evaluate groundwater elevation and flow gradient in up to two separate water-bearing units with the highest VOC screening concentrations.

11.3 Step 4 – Define the Boundaries of the Study

The preliminary horizontal boundary for this investigation has been chosen based on hydrogeologic and chemical data provided by the Navy and during agency file reviews. Proposed well locations are displayed on Figure 5. The actual horizontal boundary may be adjusted based on hydraulic and VOC concentration gradients identified during the field investigation.

The planned vertical boundary for this investigation is 310 feet bgs; which is approximately 10 feet below were the Beta Aquifer was encountered in former Well KAYO-SB. This is the maximum total depth that monitoring wells are anticipated to be set. The actual vertical boundary will be adjusted dynamically based on geologic logs and VOC screening data generated during the field investigation.

The temporal boundary of the field investigation is defined by the completion of the second proposed groundwater sampling event, currently planned for November 2011.

11.4 Step 5 – Develop the Analytical Approach

EPA Method 8265 will be used to screen for target VOC constituents (including PCE, TCE, DCE, TCA, DCA, and VC). A detailed log of VOC screening concentrations will be produced by making a measurement of the continuous core approximately every 2 feet to a depth of 310 feet bgs adjacent to former Well KAYO-SB. If the geologist observes stains, odors, or a photoionization detector (PID) reading in the soil core that is interpreted as residual soil contamination or NAPL, a soil sample will be collected for fixed base laboratory analysis by EPA Method 8260B.

The geologic and VOC logs will be examined to identify the two transmissive units with the highest VOC screening concentrations. These two water bearing units will be proposed to be the targets of wells at other locations shown on Figure 5. Paired wells will be bored separately, although as close together as practical. The deeper well will be drilled first, and the continuous core will be logged by a Professional Geologist and field screened approximately every 2 feet for VOCs using EPA Method 8265. This data will be used to confirm that the target well depths intersect the targeted water bearing units. The shallower well will be drilled second, using the geologic and VOC logs from the deeper well to confirm the planned depth. Groundwater samples will be collected from permanent monitoring wells for two consecutive quarters and analyzed for target VOCs by EPA Method 8260B; in accordance with Worksheets #14 and #18 of this SAP. Because the resulting data set will likely be at or below the minimum number of observations (8 to 10 per population) recommended for statistical two-sample hypothesis testing, point-by-point comparisons and graphical presentation methods will be the primary method used to evaluate whether or not concentrations are increasing in a particular spatial direction. Statistical two-sample hypothesis testing using ProUCL computer software will be used as a secondary comparison method, subject to qualification due to the potential constraints of the data set.

Based on the analytical approach, the following decision rules are proposed:

1. **Are PCE, TCE, DCE, TCA, DCA, and/or VC concentrations increasing in an off-property direction?**

   Yes: Conclude that target VOCs in groundwater are migrating from an upgradient non-Navy source. Based on the updated CSM resulting from the sampling and the file reviews, evaluate the need for additional sampling to resolve data gaps.

   No: Conclude that the Navy is the likely source of target VOCs identified in groundwater in the vicinity of former agricultural well KAYO-SB. Plan appropriate future actions.

2. **Are PCE, TCE, DCE, TCA, DCA, and/or VC present at concentrations greater than 100 mg/kg (Westinghouse, 2001), thereby indicating potential residual soil contamination (NAPL)?**

   Yes: Conclude that the residual soil contamination (NAPL) is located near a source area, evaluate whether or not the source area is within Navy property.

   No: Conclude that residual soil contamination (NAPL) was not encountered during the investigation. Refer to decision rule #1 to evaluate source.

11.5 Step 6 – Specify Performance or Acceptance Criteria

There are two types of decision errors: sampling design errors and measurement errors. Sampling design errors are a function of the selection of sample locations or analytical methods used to

characterize the site to be studied. Measurement errors are a function of the procedures used to collect and analyze the samples.

In sampling designs that use a statistical approach to evaluate the data using decision rules, numerical limits on allowable error can be set and controlled by the sampling design (e.g., the number of samples). The use of classical statistics for this project would require a significant number of sampling locations to systematically examine the area potentially affected by the identified release. A random statistically defined sample grid would not meet the DQOs established for this project. This proposed investigation is focused on evaluating if target VOCs are migrating onto NAVWPNSTA Seal Beach from an offsite source, not on identifying the complete distribution of chemicals for which the source may or may not be originating from the facility. Although this project is planned using a judgmental approach, the sampling design proposed in this SAP will yield an adequate data set to address the DQOs established for this investigation.

Measurement errors that arise during the various steps of the sample-measurement process (e.g., sample collection, sample handling, sample preparation, sample analysis, data reduction, and data handling) are possible regardless of the sampling design. Neither measurement errors nor variability can be eliminated, but they can be controlled by selecting appropriate procedures and using properly trained personnel. Measurement error will be minimized by using a trained and experienced field team under the guidance of the Project Team's QAM. Each field sampler will be familiar with SAP DQOs and sampling requirements.

Measurement error is further managed by using Standard Operating Procedures (SOPs) and data quality management. Attachment 1 of this SAP presents SOPs that will be followed to minimize and control measurement error. The analytical methods and method reporting limits for groundwater samples are listed in Worksheet #15.

Decision uncertainty is managed by increasing the density of sampling points, especially in areas where there is high uncertainty about the correctness of a decision. This is cost-effectively accomplished by using field screening methods such as EPA Method 8265 to build a detailed CSM in near real-time. By collecting and analyzing data in near real-time, critical data gaps are identified and filled, an accurate and complete CSM is developed, and field mobilizations and work plan cycles are reduced.

The following table presents possible decision errors, identifies associated consequences, and addresses related uncertainties. The most severe error in judgmental sampling would be to conclude that action is not required when, in reality, an unacceptable risk to human-health and/or the environment exists. The judgmental sampling approach is designed to limit the probability of this error.

Possible Decision Errors

Possible Error	Associated Consequences	Uncertainty
Concluding that target VOCs are present in groundwater when not present.	Incorrectly identifying groundwater as contaminated and improperly determining that target VOCs are originating from NAVWPNSTA Seal Beach, or migrating onto the facility from an offsite source.	Low: Conclusions will be based on permanent monitoring wells sampled in accordance with SOPs that follow NAVFAC requirements, samples will be analyzed by an approved fixed base laboratory, and laboratory data validated by a third party. See Decision Rules.
Concluding that target VOCs are not present in groundwater when in fact they are present.	Failing to identify groundwater as contaminated and consequently failing to correctly identify whether target VOCs originate from the facility or an offsite source.	Low: Conclusions will be based on permanent monitoring wells sampled in accordance with SOPs that follow NAVFAC requirements, samples analyzed by an approved fixed base laboratory, and laboratory data validated by a third party. See Decision Rules.

Decision uncertainty will be managed by specific targeting of initial screening points, especially in areas where there is high uncertainty about the correctness of a decision. This is cost-effectively accomplished by targeting appropriate and discrete intervals and screening analytical methods, and building out a detailed CSM during the field deployment. By compiling and modeling data while still in the field, critical data gaps will be identified and filled, an accurate preliminary CSM developed based on geologic and VOC screening data, and all critical data required to optimize the design of permanent monitoring wells that will answer the data quality objectives will be collected within one Work Plan/field sampling/reporting cycle.

11.6 Step 7 – Develop the Detailed Plan for Obtaining Data

This investigation was designed using chemical and hydrogeologic data from previous investigations in the study area, information from a current EDR report, limited review of agency files, and discussions with Navy and regulatory agency representatives. This investigation involves the collection of groundwater samples for chemical analysis to determine whether target VOCs in groundwater in the vicinity of former agricultural Well KAYO-SB originate from a Navy or non-Navy source. The data collected during this investigation, along with existing data from previous investigations, will be used to make this determination.

During this investigation, sonic drilling technology; or equivalent, will be used to collect continuous core samples at predetermined boring locations (Figure 5). The borings will subsequently be used to install permanent groundwater monitoring wells. The proposed boring locations were selected based on the preliminary CSM (Figures 3 and 4). The first proposed boring (SB75-MW01; Figure 5) will be advanced to approximately 310 feet bgs, adjacent to former Well KAYO-SB. The lithology will be logged by a Professional Geologist and VOC concentration measurements will be collected approximately every 2 lineal feet using DSITMS by EPA Method 8265. Since soil impact is not expected, DSITMS will be used to screen pore water captured within the sediment column. Following logging, a 3-inch-diameter groundwater

monitoring well will be installed in boring SB75-MW01 at the depth where contaminant screening shows the highest concentrations.

The results of the detailed geologic and VOC log of boring SB75-MW01 will be used to identify the depth and water-bearing unit(s) through which VOCs are migrating, and will preliminarily guide the boring depths and subsequent monitoring well designs and casing diameter at other proposed locations (Figure 5). The depths of the additional wells will be adjusted based on the detailed geologic logs and targeted VOC screening performed during advancement of each proposed boring.

Permanent groundwater wells will be constructed with Schedule 80 polyvinyl chloride (PVC) casing with 0.010 slotted well screen, or equivalent. The first well will have 3-inch diameter casing, subsequent wells will be constructed with 4-inch diameter casing if it can be done with the project budget. After completion and development, representative groundwater samples will be collected from each permanent monitoring well using low-flow methods described in Worksheet #14 and Accord Engineering, Inc. (AEI) SOP F30-002 (Attachment 1). Groundwater samples will be collected for two consecutive quarterly monitoring events and analyzed for target VOCs by a fixed-base analytical laboratory. All groundwater samples for off-site analysis will be handled in accordance with Worksheet #27.

12.0 SAP WORKSHEET #12 – MEASUREMENT PERFORMANCE CRITERIA

12.1 Measurement Performance Criteria Table – Field QC Samples (Soil)

QC Sample	Analytical Group	Frequency	DQIs	Measurement Performance Criteria	QC Sample Assesses Error for Sampling (S), Analytical (A) or both (S&A)
Equipment Rinsate (Equipment Blank) (Rinsate Blank)	VOCs	One per day	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Source Water Blank (Field Blank)	VOCs	One per sampling event or source of water used for the final decontamination rinse	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Trip Blank	VOCs	One per shipping container containing samples for VOCs	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Temperature Blank	VOCs	One per shipping container	Representativeness	4 ˚C (± 2 ˚C)	S

Acronyms:

˚C	degrees Celsius
DQI	data quality indicator
QC	quality control
QL	quantitation limit
RPD	relative percent difference
VOC	volatile organic compound

12.2 Measurement Performance Criteria Table – Field QC Samples (Water)

QC Sample	Analytical Group	Frequency	DQIs	Measurement Performance Criteria	QC Sample Assesses Error for Sampling (S), Analytical (A) or both (S&A)
Equipment Rinsate (Equipment Blank) (Rinsate Blank)	VOCs	One per day	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Field Duplicate	VOCs	One per every 10 samples	Precision	RPD (Table 1)	S
Source Water Blank (Field Blank)	VOCs	One per sampling event or source of water used for the final decontamination rinse	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Trip Blank	VOCs	One per shipping container containing samples for VOCs	Sensitivity/ Contamination (Accuracy/Bias)	Detections < QLs (Worksheet #15)	S
Temperature Blank	VOCs	One per shipping container	Representativeness	4 ˚C (± 2 ˚C)	S

Acronyms:

˚C	degrees Celsius
DQI	data quality indicator
QC	quality control
QL	quantitation limit
RPD	relative percent difference
VOC	volatile organic compound

13.0 SAP WORKSHEET #13 – SECONDARY DATA CRITERIA AND LIMITATIONS TABLE

Secondary Data	Data Source (originating organization, report title and date)	Data Generator(s) (originating organization, data types, data generation / collection dates)	How Data Will Be Used	Limitations on Data Use
Agricultural well KAYO-SB analytical results	Tetra Tech EC, Inc., *Final Well Decommissioning Report, Naval Weapons Station Seal Beach, CA.* February 12, 2007	Groundwater analytical data collected from agricultural well KAYO-SB by Tetra Tech EC, Inc. during well decommissioning activities in September 2006.	To compare with current concentrations for target VOCs within the study area.	No data validation documentation provided.

Acronyms:
VOC volatile organic compound

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14.0 SAP WORKSHEET #14 – SUMMARY OF PROJECT TASKS

The scope of work for this project includes installing and sampling up to seven permanent groundwater monitoring wells, based on screening data. EPA Method 8265 will be used to screen for target VOC constituents (including PCE, TCE, DCE, TCA, DCA, and VC).

The strategy for installation of the wells includes sonic drilling next to former KAYO-SB to a depth of 310 feet. Based on the KAYO-SB driller's log, this depth should penetrate 10 feet into the first transmissive unit of the Beta Aquifer. The continuous core will be logged by a Professional Geologist and field screened approximately every 2 feet for VOCs using DSITMS (EPA Method 8265). Draft field results will be sent to the project team on a daily basis. A well will be installed in this boring to collect VOC concentration data from the Beta Aquifer. It is estimated that it will take 3 days to drill and install the well.

The geologic and VOC logs will be examined to identify the two transmissive units with the highest VOC screening concentrations. These two water bearing units will be proposed to be the targets of wells at other locations (Figure 5). Paired wells will be bored separately, although as close together as practical. The deeper well will be drilled first, and the continuous core will be logged by a Professional Geologist and field screened approximately every 2 feet for VOCs using EPA Method 8265. This data will be used to confirm that the target well depths intersect the targeted water bearing units. The shallower well will be drilled second, using the geologic and VOC logs from the deeper well to confirm the planned depth.

Soil and groundwater samples will be collected in accordance with the methods described in Worksheets #14 and #18 of this SAP.

This worksheet summarizes the tasks that will be performed as part of this groundwater assessment. SOPs for pertinent tasks are presented in Attachment 1.

14.1 Permitting and Notification

The DoN is conducting this project with Environmental Response, Navy appropriation, under CERCLA. CERCLA Section 121(e) [42 USC 9621] and 40 CFR 300.400(e) provides exemption from Federal, State, and local permit fees for CERCLA response actions. The Project Team will submit a courtesy drilling permit application to the Orange County Health Care Agency. Fieldwork will not proceed until Orange County acknowledgement of the permit application is received.

14.2 Utility Clearance

Prior to intrusive drilling activities, NAVWPNSTA Seal Beach Public Works Utilities Department will be contacted for issuance of a Digging Permit for utility clearance at each intrusive location on the Facility. Underground utility clearance will be completed within a 6-foot radius of each proposed location using the following protocol:

- Mark the proposed boring locations and the utility lines in the immediate vicinity using conventionally color-coded surveyor paint.
- Coordinate utility-locating activities with the utility locator service.
- Coordinate utility-locating activities with Underground Service Alert.
- Use geophysical equipment and pipe locating procedures to ensure underground obstruction clearance.

Whenever possible, a transmitter/receiver unit will be attached to the exposed pipe or utility to trace metallic pipes or utilities that are either indicated on base utility maps or where obvious via surface expression. The location of the utility will be marked on the ground using color-coded surveyor paint.

If a utility is identified within a 3-foot radius of the proposed sampling location, the sampling point will be moved and the clearance procedures will be repeated.

Prior to drilling activities, each boring location will be cleared with a non-intrusive method (i.e air-knife, hand-auger) to a depth of approximately 5 ft bgs (or to the maximum depth practicable) to ensure clearance from subsurface utilities.

14.3 Soil Boring

Continuous geologic cores will be collected at four proposed boring locations using sonic drilling technology (Figure 5). A sonic drilling rig will be used to advance a core barrel by vibration, rotation, and downward force to collect continuous soil cores. Once the core barrel is at the desired depth, an outer secondary casing will be advanced down to the same depth to keep the borehole from collapsing while the core barrel is removed. The use of multiple secondary casings with decreasing diameters may be used to telescope the borehole through separate confining units. Once the core barrel is removed, the soil core will be pushed out of the core barrel through the use of vibration and either air or water pressure, into disposable plastic sleeves. If the integrity of the soil core is of concern during drilling, acetate liners may be used to keep the core intact within the core barrel. To minimize friction and absorb heat, potable water may be added between the core barrel and secondary casing during advancement. If water is added, a source blank will be collected and the additional volume of water will be extracted during well development activities.

The data collected from the continuous cores is discussed in the following sections. The data will be used to refine the preliminary CSM and aid in designing the proposed permanent groundwater monitoring well network; which will be used to assess target VOCs in groundwater at the site.

14.3.1 Geologic Logging

All continuous cores will be logged by a California Professional Geologist (PG), using lithologic descriptions in general accordance with the Unified Soils Classification System (USCS). Descriptions of any visible evidence of soil contamination (i.e., staining) and odor will also be recorded on the location specific boring log and in the field notebook.

14.3.2 VOC Screening by EPA Method 8265

Soil subsamples will be collected from the continuous geologic cores and screened in the field using DSITMS by EPA Method 8265. This method will be used to provide semi-quantitative data for assessing target VOCs. The available data strongly suggests that the proposed borings are not at source areas where soil contamination is expected. The VOC screening by 8265 will be performed on total matrix samples (soil plus pore water) from the sonic drilling cores, and the results can be used to evaluate the presence of residual NAPL or soil contamination. Beginning at approximately 6 feet below grade, the continuous core will be logged by a PG and field screened approximately every 2 feet. Temperature of the soil core will be logged using a non-contact thermometer gun or equivalent. This screening technique has been used successfully at other sites to screen for VOCs in pore water (i.e. groundwater). It is anticipated that screening samples will be collected approximately every 2 lineal feet in proposed boring SB75-MW01. Based on the results, VOC screening will be performed approximately every 2 lineal feet at the three additional proposed boring locations. The field staff will use their judgment to adjust the sampling depths or collect additional screening samples based on field observations of potential VOC impacts (mechanical, visual and/or olfactory) or changes in lithology. Samples will be screened in accordance with BRADY SOP T-009 and T-010.

14.3.3 Soil Sampling

While performing the VOC screening on the continuous geologic cores, if the geologist observes stains, odors, or a PID reading in the soil core that is interpreted as residual soil contamination or NAPL, a confirmation soil sample will be collected for fixed-base laboratory analysis by EPA Method 8260B. The soil samples will be collected from the continuous cores in accordance with BRADY SOP T-003 and T-006.

14.4 Monitoring Well Installations

Sonic drilling technology; or equivalent, will be used to install up to nine permanent groundwater monitoring wells. It is anticipated that the groundwater monitoring wells will be completed using manufacturer cleaned and wrapped flush-threaded 3-inch diameter Schedule 80 PVC casing with approximately 10 feet of 0.010-inch slotted screen, and designed in general accordance with the California Department of Water Resources Bulletins 74-81 and 74-90, and Orange County Environmental Health Division requirements. The filter pack will consist of #2/16 sand, or equivalent. The annular space above the filter pack will be sealed with hydrated bentonite chips and grout, and finished with a concrete sealed wellhead. A secured traffic rated flush-mount well box set in a raised concrete well pad will be installed at ground surface at each well location for well head protection. Final well depths will be based on site lithology and groundwater depth within the water-bearing unit of interest, but are projected to be set at a maximum depth of 310 feet bgs.

Each well will be installed under the supervision of a Professional Geologist registered in the State of California. Preliminary well construction logs will be completed in the field and well installation and sampling activities will be recorded in the field logbook in accordance with AEI SOP F10-001 (Attachment 1).

All fluids and tools introduced into the subsurface will be free of petroleum-based materials, including fuels, oils, grease, and/or solvents. A surface seal will be used as needed to prevent precipitation run-off or other materials from entering the borehole. Non-disposable field equipment will be decontaminated between sampling locations in accordance with AEI SOP F10-003.

14.5 Well Development

Following placement of the filter pack, but prior to placement of the bentonite transition seal and concrete surface seal, each groundwater monitoring well will be partially developed to ensure the filter pack level has stabilized. A surge block attached to the drill rig cable will be slowly raised and lowered within the screened interval to promote hydraulic communication between the geologic formation and well.

Full development will proceed after the concrete surface seal has hardened (normally within 72 hours of installation). Each well will then be purged with a submersible pump until a turbidity of less than 5 nephlometric turbidity units (NTUs) is observed, or at least three borehole volumes are removed. If potable water has been added during drilling, then the volume of water added will be removed in addition to the development water. Purge water will be stored on-site in 55-gallon drums until groundwater sample analytical results are received.

Following well development activities, each well will be allowed to stabilize for at least 72 hours prior to sampling.

14.6 Groundwater Sampling

Following installation and development activities, the newly installed permanent groundwater monitoring wells will be equipped with dedicated low-flow bladder pumps (Geotech Environmental Equipment, Inc. Model #GEO 1.66SS18; or equivalent). The wells will be micro-purged and sampled for target VOC analysis by EPA Method 8260B using low-flow sampling technology, as described below. Two consecutive quarterly groundwater monitoring events are planned. If possible, the sampling will be coordinated with the Huntington Beach production wells to coincide with a pumping cycle and a non-pumping period.

14.6.1 Water Level Measurement

Prior to purging each permanent monitoring well, the depth to free product (if detected), depth to groundwater, and total well depth will be measured using an interface meter in 0.01-foot increments in accordance with AEI SOP F40-001. Measurements will be taken relative to a permanently marked survey point located at the top of the well casing. These measurements will be recorded on the Well Sampling form (Attachment 2). The interface meter will be decontaminated between wells in accordance with AEI SOP F10-003 (Attachment 1).

14.6.2 Well Purging Activities

All permanent wells will be purged in accordance with AEI SOP F30-002 for low-flow sampling (Attachment 1). Following the recording of water level measurements, groundwater monitoring wells will be micro-purged with the dedicated low-flow pumps controlled by a Geotech

Geocontroller 2, or equivalent. To assess stabilization, the groundwater depth, temperature, conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP) and pH levels will be monitored at 5 minute intervals. The temperature, conductivity, DO, ORP, and pH parameters will be measured using a multi-parameter meter with flow-through cell, or equivalent. Water level measurements for stabilization will be taken using a 0.01-foot resolution interface meter. All wells will be purged until groundwater parameters stabilize, the well pumps dry, or three well volumes have been removed. Stabilization parameters will be recorded on the Well Sampling form (Attachment 2) and in the field logbook. All down-hole purge equipment will be decontaminated between wells using AEI SOP F10-003 (Attachment 1).

In accordance with AEI SOP F30-002 (Attachment 1), stabilization is achieved after all indicator parameters have met the following criteria:

- pH – Three successive readings within ±0.1 units.
- Temperature – Three successive readings within ±1degrees Celsius (°C).
- Specific conductance – Three successive readings within ±3%.
- Redox Potential or ORP – Three successive readings within ±10 millivolts (mV).
- Dissolved Oxygen – Three successive readings within ±0.3 milligrams per liter (mg/L).

All down-hole sampling equipment will be decontaminated between wells in accordance with AEI SOP F10-003 (Attachment 1).

14.6.3 Groundwater Sample Collection

Following stabilization of monitoring parameters as described above, groundwater samples will be collected from the groundwater monitoring wells in accordance with AEI SOP F30-002 for low-flow sampling (Attachment 1). All wells will be sampled with the dedicated low-flow pump after the well has been adequately purged. Groundwater samples will be collected by directing the discharge from the sampling pump into the appropriate laboratory prepared and preserved sample containers. After sample collection, the containers will be labeled, prepared for shipment, placed in an insulated cooler with wet ice (double-bagged in re-sealable plastic bags), and transported under COC to the fixed-base laboratory.

If the samples are to be delivered to the laboratory in the custody of a third-party shipment or courier service, custody seals will be used on each ice chest to provide tampering detection. The signed and dated custody seals will be placed on the front right and back left of the shipping container, and will be covered with wide, clear tape.

14.7 Quality Control Requirements

Quality assurance (QA) is an integrated system of activities in the area of quality planning, assessment, and improvement to provide the project with a measurable assurance that the established standards of quality are met. QC checks, including both field and laboratory, are specific operational techniques and activities used to fulfill the QA requirements. Worksheets

#12 and #28 summarize the collection frequencies for the various field and laboratory QC samples, respectively.

14.7.1 Field Quality Control

The field QC samples will be assigned unique sample numbers and will be submitted blind to the analytical laboratory. If abnormalities are detected in field QC samples, the data associated with the QC samples will be flagged and appropriate actions will be taken to rectify issues.

14.7.2 Field Duplicate Samples

Field duplicate/replicate samples will be collected at a rate of 10% of the total number of field samples. For all water samples, duplicate samples will be collected by retaining consecutive samples from the sampling device.

14.7.3 Equipment Rinsate Blanks

Equipment rinsate blanks will be collected daily during sampling to ensure that non-dedicated sampling devices have been decontaminated effectively. Equipment rinsate blanks will consist of the DI water used in the final rinse step of the sampling equipment decontamination procedure. Rinsate samples will be collected at a frequency of one per day during sampling events. Rinsate samples may be collected more frequently if required to meet the project DQOs. If a rinsate sample has already been collected, and if either the decontamination procedure comes into question or if a subsequent well produces a sample which has a questionable odor or color, an additional rinsate sample may be warranted after the next equipment decontamination procedure.

14.7.4 Trip Blanks

Trip blanks are hydrochloric acid (HCl)-preserved organic-free water prepared by the fixed-base laboratory in 40-milliliter (mL) volatile organic analysis (VOA) vials that will be carried into the field, stored with the samples, and returned to the laboratory for VOC analysis. Trip blanks will be used to determine whether samples have been cross-contaminated with VOCs during sample collection and transportation. Since trip blanks pertain only to VOCs, the vial must be free of any headspace. Trip blanks will be provided in each cooler and analyzed for VOCs for each shipment of samples sent to the fixed-base laboratory.

14.7.5 Source Blanks

Source blanks are collected to ensure that water used during decontamination is not a source of contamination. Source blank samples will be collected at a frequency of one for each source of water used for equipment rinsate blanks (for the duration of the sampling). If the source for decontamination water changes, additional source blank samples will be collected. To prepare source blanks, the sample containers will be filled with source water at the same time that it is used for decontamination.

14.7.6 Temperature Blanks

Temperature blank samples will accompany each cooler that contains samples with a temperature preservative requirement. The temperature blank will be prepared either by the

analytical laboratory or the field sampling crew by filling VOA vials with de-ionized (DI) water. The temperature of the samples will be verified upon arrival at the analytical laboratory using the temperature blank.

14.7.7 Laboratory Quality Control

Laboratory QC is addressed through the analysis of laboratory QC samples, documented internal and external laboratory QC practices, and laboratory audits. The types of laboratory QC samples will be project/chemical specific, but may include laboratory control samples (LCSs), laboratory duplicates, MSs, surrogate standards, internal standards, method blanks, and instrument blanks. MSs, MSDs, and LCSs are analyzed for every batch of up to 20 samples and serve as a measure of analytical accuracy. Surrogate standards are added to all samples, blanks, MSs, MSDs, and LCSs which are analyzed for organic compounds in order to evaluate the method's accuracy and to help determine matrix interferences. Definitions of each type of laboratory QC sample are listed in the following subsections. For laboratory measurements, if any of the QC checks are outside the acceptance criteria, corrective actions will be taken based on procedures in the Laboratory Quality Assurance Program (LQAP).

14.7.8 Laboratory Control Samples

LCSs include blank spikes and blank spike duplicates. Blank spike samples are designed to check the accuracy of the laboratory analytical procedures by measuring a known concentration of an analyte in the blank spike samples. Blank spike duplicate samples are designed to check laboratory accuracy and precision of the analytical procedures by measuring a known concentration of an analyte in the blank spike duplicate sample. Blank spike and blank spike duplicate samples are prepared by the laboratory using clean laboratory matrices spiked with the same spiking compounds used for MSs at levels approximately 10 times greater than the method detection limit (MDL). LCSs will be processed with each analytical batch consisting of 20 samples or less.

14.7.9 Laboratory Duplicates

Laboratory duplicates are two aliquots of a sample taken from the same sample container under laboratory conditions and analyzed independently. The analysis of laboratory duplicates allows the laboratory to measure the precision associated with laboratory procedures. Laboratory duplicate samples will be processed with each analytical batch consisting of 20 samples or less.

14.7.10 Matrix Spikes

MS and MSD samples are designed to check the precision and accuracy of the analytical methods through the analysis of a field sample with a known amount of analyte added. Additional sample volume for MS and MSD samples is collected in the field in the same manner as field duplicate samples. In the laboratory, two portions of the sample are spiked with a standard solution of target analytes. MS and MSD samples are analyzed for the same parameters as the field samples, and analytical results will be evaluated for precision and accuracy of the laboratory process and effects of the sample matrix. A minimum of one MS/MSD will be analyzed per 20 field samples.

14.7.11 Surrogate Standards

Surrogates are chemical compounds with properties that mimic analytes of interest, but that are unlikely to be found in environmental samples. Surrogates will be added to all field and QC samples analyzed for volatiles, to assess the recovery of the laboratory process, and to detect QC problems. The concentration and type of the surrogates used will be based on the LQAP.

14.7.12 Internal Standards

Like the surrogate standard, an internal standard is a chemical compound, unlikely to be found in environmental samples, that is added as a reference compound for sample quantification. Internal standard procedures are used for the analysis of volatile organics and extractable organics using gas chromatograph/mass spectrometer (GC/MS) and also can be used for other GC and high-performance liquid chromatography analytical methods. The concentration and type of the internal standards used will be based on the LQAP.

14.7.13 Method Blanks

Method blanks are designed to detect contamination of field samples that may occur in the laboratory. Method blanks verify that method interference caused by contaminants in solvents, reagents, glassware, and other sample processing hardware are known and minimized. Method blanks are deionized water for aqueous samples. A minimum of one method blank will be analyzed each day that field samples are analyzed, at the rate of 1 per 20 field samples. A method blank must be analyzed daily. The concentration of the target compounds in the method blank sample must be less than five times the MDL. If the blank is not under the specified limit, the source contamination is to be identified and corrective actions taken.

14.8 Equipment Decontamination

Decontamination of non-disposable sampling equipment will be performed to prevent the introduction of extraneous material into samples and to prevent cross-contamination between samples. Equipment will be decontaminated in accordance with AEI SOP F10-003 (Attachment 1).

In summary, decontamination of small non-disposable sample equipment will be conducted in the following steps:

1. Scrub the equipment with a brush, using laboratory grade detergent, such as Liquinox, and potable water solution, rinse with potable water, and rinse again with DI water. The equipment will be scrubbed and rinsed in three separate five-gallon buckets.
2. Reassemble the equipment and place it in a clean area on plastic or aluminum foil. If aluminum foil is used, wrap the equipment with the dull side toward the equipment.
3. Equipment rinsates will be collected from decontaminated equipment daily to provide a QC check on the decontamination procedure above. At least one field blank (source water used in the decontamination procedure) will be collected in the beginning of the assessment and analyzed for all target compounds.

14.9 Investigation Derived Waste Disposal

Wastes that are anticipated to be generated during the fieldwork include potentially VOC-impacted soil and groundwater, decontamination water, and personal protective equipment (PPE). VOC impacted soil and water will be containerized on-site and stored temporarily in 55-gallon drums or other suitable containers for future disposal. The PVC well materials and PPE will be disposed in an NAVWPNSTA Seal Beach facility dumpster or equivalent. Drums will be labeled and securely stored with spill control in accordance with AEI SOP F10-006 (Attachment 1).

Disposal of soil and groundwater wastes will be determined based on the analytical results of the media in question. Contaminated wastes will be transported to an authorized disposal facility within 90 days of generation under appropriate manifest.

14.10 Data Management

All field observations and laboratory results will be linked to a unique sample location through the use of the sample identification (ID) system (Worksheets #14 and 27). In accordance with AEI SOP F10-001 (Attachment 1), field observations and measurement data will be recorded on the field forms and in a field logbook to provide a permanent record of field activities. All data that are hand-entered will be subjected to a review by a second person to minimize data entry errors. A check for completeness of field records (logbooks, field forms, databases, electronic spreadsheets) will ensure that all requirements for field activities have been fulfilled, complete records exist for each activity, and the procedures specified in this SAP have been implemented. Field documentation will ensure sample integrity and provide sufficient technical information to recreate each field event.

Hard copies of the data reports received from the laboratories will be filed chronologically and will be stored separately from the electronic files. Hard copies of data signed by a representative of the analytical laboratory will be compared to any electronic versions of the data to confirm that the conversion process has not modified the reported results. Any additional reporting formats will be completed and electronic and hard copies will be stored in different locations at the Project Team facilities.

Following the data review process, the Project Team will enter the sample results into an electronic database. This electronic database will be submitted to NAVFAC SW in the NEDD format in accordance with the most current version of the NAVFAC SW Environmental Work Instruction (EWI) #6. Data will be compiled with spatial and temporal qualifiers (location ID and sample date) so that it will be possible to rapidly plot or review changes in the concentration of target analytes at each sampling point over time.

14.11 Third Party Data Validation

Data generated for this project will be reviewed and verified by the Project Team's QAM and validated by an independent outside reviewer. Data verification involves the process of generating qualitative and quantitative sample information through observations, field procedures, analytical measurements and calculations. The data verification and reporting

process for the field data involves ensuring that blank samples and field duplicates defined in this SAP are within the acceptance criteria. The verification process for the laboratory data involves ensuring that the holding times, precision, accuracy, laboratory blanks, and detection limits are within the acceptance criteria outlined in this SAP.

The field and laboratory personnel will provide the Project Team QAM with all the data. The Project Team's QAM will be responsible for the overall review of the data verification results for compliance with the specified DQOs. Data verification tasks include confirmation that laboratory sample receipt forms match COC documentation and logbook entries. The sampling data will be validated by an independent third-party in accordance with NAVFAC SW EWI #1 (Chemical Data Validation). For this project, a 10% Level-IV and 90% Level-III data validation strategy will be implemented.

Field screening results for VOCs by EPA Method 8265 will be used immediately to optimize the design of monitoring wells; therefore the screening data will not undergo third party data validation. The data from the confirmation soil samples and the monitoring well samples will undergo the third party data validation described above.

14.12 Level-III Validation

Level-III begins the process of data validation and includes an assessment of all the results reported in the standard data package. Qualifiers are issued at Level III and above. For level III data validation, the data values for routine and QC samples are generally assumed to be correctly reported by the laboratory. Data quality will be assessed by comparing the QC parameters to the appropriate criteria (or limits) as specified in this SAP, by CLP requirements, or by method-specific requirements (e.g., CLP, SW-846). If calculations for quantitation are verified, it is done on a limited basis and may require raw data in addition to the standard data forms normally present in a data package.

14.13 Level-IV Validation

Level-IV data validation constitutes the most extensive and exhaustive review and includes requantification of reported QC and field sample values using the raw data files. Level-IV data validation follows the EPA protocols and CLP criteria set forth in the functional guidelines for evaluating organic analyses (U.S. EPA, 1999). These guidelines apply to analytical data packages that include the raw data (e.g., spectra and chromatograms) and backup documentation for calibration standards, analysis run logs, LCS, dilution factors, and other types of information. This additional information is utilized in the Level-IV data validation process for checking calculations of quantified analytical data. Calculations are checked for lab QC samples (e.g., MS/MSD and LCS data) and routine field samples (including field duplicates, field and equipment rinsate blanks, and VOC trip blanks). To ensure that detection limits and data values are accurate and appropriate, an evaluation is made of instrument performance, calibration methods, and the original data for calibration standards.

Analytical data may be qualified based on data validation reviews. Qualifiers will be consistent with the applicable EPA functional guidelines and will be used to provide data users with an estimate of the level of uncertainty associated with the "flagged" result.

Data validation results will be evaluated with respect to the attached qualifiers to determine data usability issues, if any. The following qualifiers may be assigned during the validation process:

- J – estimated concentration
- R – rejected value (unusable)
- U – not detected (e.g., not present based on blank contamination)
- UJ – sample detection limit is estimated.

For any instances where the validation qualifiers impact the overall data interpretation and project recommendations, the Data Quality Assessment will discuss the issue and the necessary corrective action.

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15.0 SAP WORKSHEET #15 – REFERENCE LIMITS AND EVALUATION TABLES

15.1 VOCs by EPA Method 8260B – Matrix: Soil

Analyte	CAS Number	Project Screening Level (ug/kg)	Project Screening Level Reference[a]	Project Quantitation Limit Goal (ug/kg)	Laboratory-specific	
					QLs (ug/kg)	MDLs (ug/kg)
1,1,1-Trichloroethane	71-55-6	100,000	Westinghouse	5	5	1
1,1-Dichloroethane	75-34-3	100,000	Westinghouse	5	5	1
1,1-Dichloroethene	75-35-4	100,000	Westinghouse	5	5	1
1,2-Dichloroethane	107-06-2	100,000	Westinghouse	5	5	1
cis-1,2-Dichloroethene	156-59-2	100,000	Westinghouse	5	5	1
Tetrachloroethene (PCE)	127-18-4	100,000	Westinghouse	5	5	1
Trichloroethene (TCE)	79-01-6	100,000	Westinghouse	5	5	1
Vinyl Chloride	75-01-4	100,000	Westinghouse	5	5	1

Notes and Acronyms:

CAS	Chemical Abstracts Service	ug/kg	micrograms per kilogram
MDL	method detection limit	QL	Quantitation Limit

[a] Evaluating DNAPL Source and Migration Zones: M-Area Settling Basin and the Western Sector of A/M Area, Savannah River Site (U). Prepared for the United States Department of Energy. Westinghouse Savannah River Company (Westinghouse). 2001.

Surrogate parameters for this analytical method and associated QC limits are available in Table 1.

15.2 VOCs by EPA Method 8260B – Matrix: Water

Analyte	CAS Number	Project Screening Level (ug/L)	Project Screening Level Reference[a]	Project Quantitation Limit Goal (ug/L)	Laboratory-specific	
					QLs (ug/L)	MDLs (ug/L)
1,1,1-Trichloroethane	71-55-6	200	MCL	1	1	0.2
1,1-Dichloroethane	75-34-3	5.0	MCL	1	1	0.2
1,1-Dichloroethene	75-35-4	6.0	MCL	1	1	0.2
1,2-Dichloroethane	107-06-2	0.5[b]	MCL	1	1	0.2
cis-1,2-Dichloroethene	156-59-2	6.0	MCL	1	1	0.2
Tetrachloroethene (PCE)	127-18-4	5.0	MCL	1	1	0.2
Trichloroethene (TCE)	79-01-6	5.0	MCL	1	1	0.2
Vinyl Chloride	75-01-4	0.5[b]	MCL	1	1	0.2

CAS	Chemical Abstracts Service	ug/L	micrograms per liter
MCL	Maximum Contaminant Level	QL	Quantitation Limit
MDL	method detection limit		

[a] The State of California MCLs for drinking water (November, 2008) were selected as project screening levels for this investigation.

[b] The analytical method selected provides the lowest reporting limits available using routinely accepted methodology. Since the Project Screening Level is less than the laboratory-specific QL, this analyte will be reported to the MDL.

Surrogate parameters for this analytical method and associated QC limits are available in Table 1.

16.0 SAP WORKSHEET #16 – PROJECT SCHEDULE / TIMELINE TABLE

Activities	Organization	Dates		Deliverable	Deliverable Due Date
		Anticipated Date of Initiation	Anticipated Date of Completion		
Sample Collection	AMJV/BRADY	7/5/11	7/31/11	None	See Work Plan Schedule
Analysis of Samples by Analytical Laboratory	EMAX	After receipt of samples	14 - 21 days after receipt of samples	Level 3 or 4 lab report (depending on sampling activity)	21 Days
Data Validation	LDC	After receipt of electronic and hardcopy data from laboratory	14 - 21 days after receipt of lab data	Data Validation Report	21 Days
Data Review	BRADY	After receipt of electronic and hardcopy data from laboratory	30 days after receipt of lab data	None	None
NIRIS Upload	BRADY	After receipt and review of electronic data from LDC	30 days after completion of data validation	NIRIS Upload	30 days after completed data validation

Acronyms:

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady and Associates
LDC	Laboratory Data Consultants, Inc.
NIRIS	Naval Installation Restoration Information Solution

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17.0 SAP WORKSHEET #17 – SAMPLING DESIGN AND RATIONALE

This investigation was designed using chemical and hydrogeologic data from previous investigations in the study area, information from a current environmental data records search obtained from Environmental FirstSearch Network, limited review of agency files, and discussions with Navy representatives. This investigation involves the collection of groundwater samples for chemical analysis to evaluate whether or not target VOCs in groundwater in the vicinity of former agricultural well KAYO-SB, originate from within the Navy property line. The data collected during this investigation, along with existing data from previous investigations, will be used to make this determination.

During this investigation, sonic drilling technology; or equivalent, will be used to collect continuous core samples at predetermined boring locations (Figure 5). The borings will subsequently be used to install permanent groundwater monitoring wells. The proposed boring locations were selected based on the preliminary CSM (Figures 3 and 4), and were determined to be adequate to address the DQOs established for this investigation (Worksheet #11).

The first proposed boring (SB75-MW01; Figure 5) will be advanced to approximately 310 feet bgs, adjacent to former well KAYO-SB. Based on the KAYO-SB driller's log, this depth should penetrate 10 feet into the first transmissive unit of the Beta Aquifer. The lithology will be logged by a Professional Geologist and VOC screening concentration measurements will be collected approximately every 2 lineal feet using DSITMS by EPA Method 8265. Since soil impact is not expected, DSITMS will be used to screen pore water captured within the sediment column. If the geologist observes stains, odors, or a PID reading in the soil core that is interpreted as residual soil contamination or NAPL, a soil sample will be collected in accordance with BRADY SOP T-003 and T-006 (Attachment 1) for fixed base laboratory analysis by EPA Method 8260B. Following logging, a groundwater monitoring well will be installed in boring SB75-MW01 at the depth where contaminant screening shows the highest concentrations.

The geologic and VOC logs will be examined to identify the two water-bearing units with the highest VOC screening concentrations. These two water bearing units will be proposed to be the targets of wells at other locations (Figure 5). Paired wells will be bored separately, although as close together as practical. The deeper well will be drilled first, and the continuous core will be logged by a California Registered Professional Geologist and field screened approximately every 2 feet for VOCs using EPA Method 8265. This data will be used to confirm that the target well depths intersect the targeted water bearing units. The shallower well will be drilled second, using the geologic and VOC logs from the deeper well to confirm the planned depth. If only one VOC-bearing zone is identified by field screening, that zone will be targeted for monitoring well design. The DQO team will examine the lithology log to identify a depth/location for the second paired well. If the geologist observes stains, odors, or a PID reading in the soil core that is interpreted as residual soil contamination (NAPL), a soil sample will be collected in accordance with BRADY SOP T-003 and T-006 (Attachment 1) for fixed base laboratory analysis by EPA Method 8260B. Analytical results from the fixed base laboratory will be evaluated according to decision rule #2 (Worksheet #11).

The purpose of the proposed well network is to assess target VOC concentrations in groundwater in the vicinity of former agricultural well KAYO-SB, to determine if previously detected constituents originate from a Navy or non-Navy source.

Groundwater samples from up to nine permanent groundwater monitoring wells will be analyzed for target VOCs using EPA Method 8260B by a DoD ELAP-accredited, fixed-base laboratory. The laboratory data will be validated by an independent third-party. Groundwater samples will be collected using low-flow protocol in accordance with AEI SOP F30-002 (Attachment 1).

Following receipt of the validated analytical data, a PA/SI summary report will be prepared which will summarize the results of this proposed investigation. The SI summary report will also include a revised CSM; which will incorporate data generated during the groundwater investigation.

18.0 SAP WORKSHEET #18 – SAMPLING LOCATIONS AND METHODS/SOP REQUIREMENTS TABLE

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
Screening Sampling[2]					
SB75MW01-SCRXXX	Pore Water	6 – 310[3]	VOCs	153	BRADY T-009 BRADY T-010
SB75MW02-SCRXXX	Pore Water	6 – 310[3]	VOCs	153	BRADY T-009 BRADY T-010
SB75MW03-SCRXXX	Pore Water	6 – 310[3]	VOCs	153	BRADY T-009 BRADY T-010
SB75MW04-SCRXXX	Pore Water	6 – 310[3]	VOCs	153	BRADY T-009 BRADY T-010
Confirmation Soil Sampling[4]					
SB75MW01-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW01-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW01-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW01-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
SB75MW01-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW02-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW02-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW02-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW02-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW02-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW03-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW03-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW03-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW03-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
SB75MW03-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW04-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW04-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW04-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW04-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW04-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW05-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW05-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW05-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW05-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
SB75MW05-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW06-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW06-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW06-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW06-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW06-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW07-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW07-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW07-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
SB75MW07-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
SB75MW07-S-XXX	Soil	Field Determination[4]	VOCs	1	BRADY T-003 BRADY T-006
Permanent Groundwater Monitoring Well Sampling (1st Event)					
SB75MW01-Q311-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW02-Q311-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW03-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW04-Q311-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW05-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW06-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW07-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW08-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW09-Q311-01	Groundwater	200[5]	VOCs	1	AEI F30-002
Permanent Groundwater Monitoring Well Sampling (2nd Event)					
SB75MW01-Q411-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW02-Q411-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW03-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW04-Q411-01	Groundwater	310[5]	VOCs	1	AEI F30-002
SB75MW05-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002

Sampling Location / ID Number	Matrix	Depth (ft bgs)	Analytical Group	Number of Samples	Sampling SOP Reference[1]
SB75MW06-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW07-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW08-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002
SB75MW09-Q411-01	Groundwater	200[5]	VOCs	1	AEI F30-002

SAP WORKSHEET # 18 – SAMPLING LOCATIONS AND METHODS/SOP REQUIREMENTS TABLE – CONTINUED

Notes and Acronyms:
[1] SOPs are available in Attachment 1.
[2] Screening sample identifications will include the sample depth as described in WS #27.
[3] Screening samples will be collected approximately every 2 feet to a maximum depth of 310 feet bgs. Prior to drilling activities, each boring location will be cleared with a non-intrusive method (i.e air-knife, hand-auger) to a depth of approximately 5 ft bgs.
[4] Confirmatory soil samples may be collected for fixed-base laboratory analysis if the geologist observes stains, odors, or PID readings in the soil core that are interpreted as residual soil contamination or NAPL. Soil sample identifications will include the sample depth as described in WS #27.
[5] This depth represents the anticipated maximum depth of the well. The groundwater monitoring well designs will be optimized in the field based on lithologic and screening data as described in WS #17. The sample depth for all groundwater samples will be based on the placement of the pump intake. The pump intake is anticipated to be placed at or near the mid-point of the well screen.

bgs	below ground surface
SOP	Standard Operating Procedure
VOC	volatile organic compound
WS	worksheet

19.0 SAP WORKSHEET #19 – ANALYTICAL SOP REQUIREMENTS TABLE

19.1 Matrix: Soil

Matrix	Analytical Group	Analytical and Preparation Method / SOP Reference[1]	Containers (number, size, and type)	Sample Volume[2] (units)	Preservation Requirements (chemical, temperature, light protected)	Maximum Holding Time[3] (preparation /analysis)
Soil	VOCs	8260B/5035/ EMAX-8260	3 x 5g EnCore Samplers	15 grams	4°C (±2°C)	48 Hr. (7 Days[4]) 14 days

Notes and Acronyms:

[1] Analytical SOP Reference from Worksheet #23. A copy of this SOP will be provided in Attachment 3 of the final version of the SAP (CD-ROM). The field copy will have Attachment 3 as a hard copy.

[2] Laboratory sample volume requirements.

[3] Maximum holding time is calculated from the time the sample is collected to the time the sample is prepared/extracted.

[4] Holding time for preparation of EnCore samplers can be 7 days if samples are frozen.

SOP standard operating procedures
VOCs volatile organic compounds

19.2 Matrix: Water

Matrix	Analytical Group	Analytical and Preparation Method / SOP Reference[1]	Containers (number, size, and type)	Sample Volume[2] (units)	Preservation Requirements (chemical, temperature, light protected)	Maximum Holding Time[3] (preparation /analysis)
Water	VOCs	8260B/5030B/ EMAX-8260	3 x 40 mL VOA vials	120 mL	HCl, pH < 2 ≤ 4°C	14 days

Notes and Acronyms:

[1] Analytical SOP Reference from Worksheet #23. A copy of this SOP will be provided in Attachment 3 of the final version of the SAP (CD-ROM). The field copy will have Attachment 3 as a hard copy.

[2] Laboratory sample volume requirements.

[3] Maximum holding time is calculated from the time the sample is collected to the time the sample is prepared/extracted.

HCL	hydrochloric acid
mL	milliliter
pH	potential of hydrogen
SOP	standard operating procedures
VOA	volatile organic analytes
VOCs	volatile organic compounds

20.0 SAP WORKSHEET #20 – FIELD QUALITY CONTROL SAMPLE SUMMARY TABLE

Matrix	Analytical Group	No. of Sampling Locations	No. of Field Duplicates	No. of MS/MSDs	No. of Field Blanks	No. of Equip. Blanks	No. of Trip Blanks	No. of PT Samples[1]	Total No. of Samples to Lab
Soil	VOCs	35	0[2]	2/2	1	3	1	0	44
Water	VOCs	7[3]	1	1/1	1	3	1	0	15

Notes and Acronyms:
[1] PT samples will not be collected during this project.
[2] Soil duplicate samples will not be collected as part of the sampling efforts since assessment of spatial heterogeneity is not an objective of this project.
[3] The number of groundwater sampling locations and field quality control samples listed in the table represent ***one sampling event***. Up to two sampling events are planned, so ***this is the number of water samples that should be collected during each sampling event***.

MS/MSD matrix spike/matrix spike duplicate
PT proficiency testing
VOCs volatile organic compounds

21.0 SAP WORKSHEET #21 – PROJECT SAMPLING SOP REFERENCES TABLE

Reference Number	Title, Revision Date and/or Number	Originating Organization of Sampling SOP	Equipment Type	Modified for Project Work? (Y/N)	Comments
AEI F10-002	Instrument Calibration and Use, 4/16/10	AEI	Multi-parameter meter, turbidity meter	N	
AEI F10-003	Decontamination of Equipment, 4/16/10	AEI	Non disposable drilling and sampling equipment	N	
AEI F20-003	Monitoring Well Design, Installation, and Development, 4/16/10	AEI	Drill Rig, Sonic or equivalent	N	
AEI F30-002	Groundwater Sampling, 4/16/10	AEI	Dedicated pump, in-line flow-through cell, multi-parameter meter	N	
AEI F40-001	Water and Free Product Level Measurement in Wells, 4/16/10	AEI	Interface meter	N	
BRADY T-003	Soil Sampling Procedure for Volatile Organics Using the EnCore® Sampler, 9/30/09	BRADY	EnCore® Sampler T-Handle, Disposable EnCore® Sampler	N	
BRADY T-006	Environmental Soil Sampling, 9/30/09	BRADY	Soil Sampling Equipment	N	
BRADY T-009	Sampling and Analysis of VOCs in Soil using Direct Push Sampling and Direct Sampling Ion Trap Mass Spectrometry, 4/6/10	BRADY	Mass Spectrometer	N	
BRADY T-010	Sampling and Analysis of VOCs in Water using Direct Push Sampling and Direct Sampling Ion Trap Mass Spectrometry, 9/30/09	BRADY	Mass Spectrometer	N	

Notes and Acronyms:

[1] Sampling SOPs are available in Attachment 1.

AEI Accord Engineering, Inc.
AMJV Accord MACTEC Joint Venture
BRADY Richard Brady & Associates
SOP Standard Operating Procedure
VOC volatile organic compounds

22.0 SAP WORKSHEET #22 – FIELD EQUIPMENT CALIBRATION, MAINTENANCE, TESTING, AND INSPECTION TABLE

Field Equipment[1]	Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference	Comments
Interface Meter	Maintenance	As needed. Decontaminate after each use.	Operational. Depress the battery test button to test the battery and circuitry.	In house repair/ Return to manufacturer	AMJV Staff – Project Manager	AEI F40-001	Replace batteries as needed. Decontaminate after each well sampled.
Multi-parameter Meter	Maintenance	Rate of deposit build-up for anodes, cathodes, and surface of sensors. Check electrolyte solution and membrane cap every 30 Days.	Reports criteria per calibration ranges.	Return to manufacturer	AMJV Staff – Project Manager	AEI F10-002 AEI F30-002	Store probe in calibration cup filled with tap water and sealed to prevent evaporation when not in use. Replace batteries as needed.
	Calibration	At the start of each sampling event and as needed based on DCC.	Per instrument specifications. Calibration ranges vary per parameter (D.O., pH, Specific Conductivity, and ORP).	Recalibrate until in acceptable range or return to manufacture for repair.	AMJV Staff – Project Manager	AEI F10-002 AEI F30-002	Replace batteries as needed.
Low-Flow Purge Controller and Power Pack	Maintenance	Check various components (valves, regulators, gauges, and controller) daily per sampling event.	Pumping at required flow pressure and rate for sample recovery.	Return to manufacturer	AMJV Staff – Project Manager	AEI F30-002	Replace batteries as needed. Air fittings must be in good condition and not leaking.

Table Continues

SAP WORKSHEET #22 – FIELD EQUIPMENT CALIBRATION, MAINTENANCE, TESTING, AND INSPECTION TABLE – CONTINUED

Field Equipment[1]	Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference	Comments
Low-Flow Bladder Pump	Maintenance	Check bladders and gaskets daily per sampling event and decontaminate after each use.	Pumping at required flow pressure and rate for sample recovery.	In house repair/ Return to manufacturer	AMJV Staff – Project Manager	AEI F30-002	Various connecting parts and gaskets must fit and be in good working order. Inspect polyethylene tubing and bladders for leaks or wear. Decontaminate after each well sampled.
Portable Turbidity Meter	Maintenance	As Needed	Per instrument specifications	In house repair/ Return to manufacturer	AMJV Staff – Project Manager	AEI F10-002 AEI F30-002	Replace batteries as needed.
	Calibration	At the start of each sampling event and as needed based on daily calibration check.	Per instrument specifications	Recalibrate until in acceptable range or return to manufacture for repair.	AMJV Staff – Project Manager	AEI F10-002 AEI F30-002	Replace batteries as needed.

Notes and Acronyms:

[1] Field equipment related to the collection of samples for chemical analysis. Other equipment such as geophysical and surveying equipment will be operated in accordance with manufacturer's instructions by qualified personnel. Monitoring well locations and elevations will be surveyed by a Professional Land Surveyor.

AEI	Accord Engineering, Inc.
AMJV	Accord MACTEC Joint Venture
DCC	daily calibration check
DO	dissolved oxygen
pH	potential of hydrogen
ORP	oxidation-reduction potential
SOP	standard operating procedures

23.0 SAP WORKSHEET #23 – ANALYTICAL SOP REFERENCES TABLE

Lab SOP Number[1]	Title, Revision Date, and / or Number	Definitive or Screening Data	Matrix/ Analytical Group	Instrument	Organization Performing Analysis	Modified for Project Work? (Y/N)
EMAX-8260	Volatile Organics by GCMS Rev. 6	Definitive	Soil and Water / VOCs	GC/MS	EMAX Laboratories Inc.	N

Notes and Acronyms:

[1] A copy of the analytical SOP will be provided in Attachment 3 of the final version of the SAP (CD-ROM). The field copy will have Attachment 3 as a hard copy.

GC/MS gas chromatograph/mass spectrometer
VOCs volatile organic compounds

24.0 SAP WORKSHEET #24 – ANALYTICAL INSTRUMENT CALIBRATION TABLE

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference
GC/MS	ICAL	Initially; as needed	SPCCs average RF ± 0.050 and %RSD for RFs for CCCs < 30% and one option below: 1) linear- mean RSD for all analytes =/<15% 2) linear – least squares regression r =/> 0.995, when RSD >15% 3) non-linear – COD > 0.990 (6 points shall be used for second order, 7 points shall be used for third order)	Locate the source of the problem. If expected RFs are not met, check for standard degradation or perform instrument adjustment and/or maintenance to correct the problem then repeat initial calibration.	EMAX Labs Inc. Chemist	EMAX-8260
GC/MS	ICV	After every ICAL	All analytes within ±25% of expected value [* within ±35% of expected value]	Prepare fresh standard and re-analyze ICV to rule out standard degradation or inaccurate injection. If problem persist perform instrument adjustment and/or maintenance to correct the problem then repeat ICAL and ICV.	EMAX Labs Inc. Chemist	EMAX-8260
GC/MS	DCC	Every 12 hrs.	SPCCs average RF > 0.050; and CCCs < 20% difference (when using RFs)or drift (when using least squares regression or non-linear calibration)	Prepare fresh standard and re-analyze CCV to rule out standard degradation or inaccurate injection. If problem persist perform instrument adjustment and/or maintenance to correct the problem and repeat ICAL.	EMAX Labs Inc. Chemist	EMAX-8260

Acronyms:

CCC	criteria continuing concentration	ICV	initial calibration verification
COD	coefficient of determination	RF	response factor
CCV	continuing calibration verification	RPD	relative percent difference
DCC	daily calibration check	%RSD	percent relative standard deviation
GC/MS	gas chromatograph/mass spectrometer	RSD	relative standard deviation
ICAL	initial calibration	SPCC	system performance check compound

25.0 SAP WORKSHEET #25 – ANALYTICAL INSTRUMENT AND EQUIPMENT MAINTENANCE, TESTING, AND INSPECTION TABLE

Instrument/ Equipment	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference
GC/MS	Parameter Setup	Physical check	Physical check	Initially; prior to DCC	Predetermined optimum parameter settings	Reset if incorrect	EMAX Labs Inc. Chemist	EMAX-8260
GC/MS	Instrument Maintenance	Parameter Check	Based on instrument Maintenance Log: Clean Purge Port, Bake Trap, Check Column Head Pressure, Set Injector Port Temperature, Check Interface Setting	Daily, Prior to use.	Predetermined Settings	Perform corrective action to system. Document actions in Instrument Maintenance Log.	EMAX Labs Inc. Chemist	EMAX-8260

Acronyms

DCC	daily calibration check
GCMS	gas chromatography mass spectrometer

26.0 SAP WORKSHEET #26 – SAMPLE HANDLING SYSTEM

SAMPLE COLLECTION, PACKAGING, AND SHIPMENT
Sample Collection (Personnel/Organization): Field Sampling Personnel / AMJV
Sample Packaging (Personnel/Organization): Field Sampling Personnel / AMJV
Coordination of Shipment (Personnel/Organization): Quality Assurance Manager or PM / AMJV
Type of Shipment/Carrier: Commercial shipment courier or laboratory courier
SAMPLE RECEIPT AND ANALYSIS
Sample Receipt (Personnel/Organization): Sample Custodian, EMAX Laboratories Inc.
Sample Custody and Storage (Personnel/Organization): Sample Custodian, EMAX Laboratories Inc.
Sample Preparation (Personnel/Organization): Various chemists and technicians, EMAX Laboratories Inc.
Sample Determinative Analysis (Personnel/Organization): Various chemists and technicians, EMAX Laboratories Inc.
SAMPLE ARCHIVING
Field Sample Storage (No. of days from sample collection): 30 days, or as required on a project specific basis
Sample Extract/Digestate Storage (No. of days from extraction/digestion): 30 days, or as required on a project specific basis
Biological Sample Storage (No. of days from sample collection): NA
SAMPLE DISPOSAL
Personnel/Organization: Sample Custodian, EMAX Laboratories Inc.
Number of Days from Analysis: 30 days, or as required on a project specific basis

Acronyms:

AMJV	Accord MACTEC Joint Venture
NA	Not Applicable
PM	project manager

27.0 SAP WORKSHEET #27 – SAMPLE CUSTODY REQUIREMENTS

27.1 Sample Identification

To provide a method of tracking each sample through collection, analysis, data review, and data reduction, a sample identification system has been established. The sample identification systems for both screening and groundwater samples are described below.

27.1.1 Screening Sample Identification

Screening sample identification numbers will be assigned in the field according to the following identification system:

- A ten-character or less designation of the Station ID. If a Location ID has already been established in NIRIS (i.e. permanent monitoring well), then it will be used as the Station ID.
- A three character designation of the type of sample, i.e. “SCR” for screening sample.
- A three character designation of the depth that the sample is collected at the location. Leading zeros are used as needed to create three characters.

For example, sample identification number SB75MW01-SCR010 would refer to Station ID “SB75MW01” (where “SB75” refers to Naval Weapons Station Seal Beach IR Site 75 and “MW01” refers to that particular boring/monitoring well location), “SCR” refers to a screening sample, and “010” refers to the sample being collected at 10 feet bgs from that location.

27.1.2 Soil Sample Identification

Soil sample identification numbers will be assigned in the field according to the following identification system:

- A ten-character or less designation of the Station ID. If a Location ID has already been established in NIRIS (i.e. permanent monitoring well), then it will be used as the Station ID.
- A one character designation of the type of sample, i.e. “S” for soil sample.
- A three character designation of the depth that the sample is collected at the location. Leading zeros are used as needed to create three characters.

For example, sample identification number SB75MW01-S-010 would refer to Station ID “SB75MW01” (where “SB75” refers to Naval Weapons Station Seal Beach IR Site 75 and “MW01” refers to that particular boring/monitoring well location), “S” refers to a soil sample, and “010” refers to the sample being collected at 10 feet bgs from that location.

27.1.3 Groundwater Sample Identification

The sample identification system for groundwater samples is designed to be compatible with both the SWRCB GeoTracker database requirements, as well as the NEDD standard. Sample

number identification will be assigned in the field according to the following sample identification system:

- A ten-character or less designation of the Station ID. If a Location ID has already been established in NIRIS (i.e. permanent monitoring well), then it will be used as the Station ID.
- A four character designation of the quarter of the calendar year for which the groundwater sample is collected, i.e. "3Q11" for the third quarter of 2011.
- A two-character designation of the consecutive sample number collected at the monitoring well location. Leading zeros are used as needed to create two characters.

For samples collected at the permanent monitoring well locations, the format of the Station ID would also incorporate the monitoring well number. For example, Sample ID number SB75MW01-3Q11-01 refers to Station ID "SB75MW01" (where "SB75" refers to Naval Weapons Station Seal Beach Site 75, "MW01" refers to that particular monitoring well), "3Q11" refers to the third quarter of 2011, and "01" refers to the first water sample collected at that monitoring well.

Field QC samples subjected to chemical analysis, such as equipment rinsate blanks, field blanks, and trip blanks will also be named this way; sequentially numbered as collected in the field with the site characterization samples. Field QC samples will be submitted to the laboratory under blind identification. Field QC samples will *not* be identified as QC samples in the sample name or on the COC. Field QC samples will be labeled with a Sample ID comprised of the following sequential components, all separated by dashes:

- The Station ID of the preceding station sampled (i.e. the station sampled immediately prior to collecting the field QC sample).
- A four character designation of the quarter of the calendar year for which the QC sample is collected, i.e. "3Q11" for the third quarter of 2011.
- A two-character designation of the consecutive sample number collected, continuing from the preceding station. Leading zeros are used as needed to create two characters.

In the following hypothetical example, the first samples collected at the site are from the station with the Station ID SB75MW01, named in accordance with the protocol described above. In this hypothetical situation:

- One water sample is collected.
- An MS/MSD is collected with the first water sample.
- Following the sampling, an equipment blank and a field blank are collected.

The samples would be named as follows:

The water sample would be named SB75MW01-3Q11-01, referring to:

- Station ID "SB75MW01" (where "SB75" refers to Naval Weapons Station Seal Beach Site 75, and "MW01" refers to that particular permanent monitoring well.
- Collected during the third quarter of 2011 (3Q11)
- Consecutive sample "01"

The extra containers collected for the MS/MSD would also be labeled SB75MW01-3Q11-01, and the COC would identify this sample to the lab for use as an MS/MSD for lab QA/QC. The sample will be shown as a single line on the COC, with the total number of sample containers entered in the appropriate field.

The equipment blank would be named SB75MW01-3Q11-02, referring to:

- Station ID SB75MW01, representing the Field Point name of the preceding station where the sampling equipment was used.
- Collected during the third quarter of 2011 (3Q11)
- Consecutive sample "02" refers to the second water sample related to the station.

Similarly, the field blank would be named SB75MW01-3Q11-03.

Temperature blanks will be labeled as temperature blanks. Temperature blanks are not subject to chemical analysis.

Cross-reference information regarding the Station ID, the assigned sample identification number, and whether the sample is a field QC sample, will be documented in the bound field logbook.

27.2 Sample Custody

All samples will be recorded on COC forms using the sample ID described above. COCs will be completed using indelible ink and in a manner to ensure entries are legible. Any errors made by the individual completing the COC shall be crossed out with a single line, initialed, and dated. The COC serves as the legal documentation of the sample custody since it records the transfer of the samples from field personnel to the laboratory to ensure that no tampering occurs.

The COC form will be signed by the individual responsible for custody of the sample containers, and the original will accompany the samples to the laboratory. One copy of the COC form will be kept by the project manager (PM) and/or the quality assurance manager and included in the project files. Information to be recorded on the COC form should include:

- Sample matrix
- Sample collector's name
- Dates/times of sample collection
- Sample identification numbers
- Number and type of containers for each sample aliquot

- Type of preservation
- Laboratory QC sample designation
- Analysis method
- Special handling instructions
- Destination of samples
- Name, date, time, and signature of each individual releasing the shipping container.

27.3 Sample Packaging and Shipment

Sample packaging will be conducted to ensure that samples arrive at the laboratory undisturbed and in good condition. The following packaging procedures are also designed to meet EPA and Department of Transportation regulations:

- Immediately after sample collection, a sample label will be completed with indelible ink and affixed to each sample container. Each sample will be placed in a re-sealable plastic bag to keep the sample container and label dry.
- As samples are accumulated, they will be stored in a designated sample cooler and properly protected from breakage. Sufficient packing material will be used to prevent sample containers from making contact during shipment. Enough wet ice will be added (double-bagged in re-sealable plastic bags) to maintain sample temperature requirements ($\leq$ 4°C). Field samples and ice will be collectively bagged in plastic trash bags, taped shut, and placed in the shipping container, to avoid water leakage. If the shipping container used is equipped with a drain plug, the plug will be taped shut both inside and outside to further ensure that there is no water leakage.
- The COC form will be completed and signed by the Project Team's field personnel and courier (if other than the sampler) for the samples transported to the laboratory. The COC will be placed in a re-sealable plastic bag, and taped to the inside of the shipping container lid.
- The shipping container will be closed and taped shut with strapping tape (filament-type) completely around at both ends.
- If the samples are to be delivered to the laboratory using a commercial shipment courier service, custody seals will be used on each container to provide tampering detection. The signed and dated custody seals will be placed on the front right and back left of the shipping container, and will be covered with wide, clear tape.

International Air Transportation Association regulations will be adhered to when shipping samples by air courier services. The package must be scheduled for priority overnight service to ensure that the temperature preservative requirement is not exceeded. Saturday deliveries will be coordinated with the laboratory.

27.4 Laboratory Receipt and Custody

The laboratory will designate a sample custodian. Upon receipt, this individual is responsible for inspecting the sample shipment, recording the temperature of the temperature blank and verifying the correctness of the COC records. The sample custodian will accept the samples by signing the COC form and noting the condition of the samples in the space provided on the COC form and on the Sample Receipt form. In case of breakage or discrepancies between the COC form, sample identification numbers, or requested analysis, the sample custodian will notify the Project Team QAM as soon as possible. All discrepancies associated with COC forms or sample breakage will be relayed to Project Team QAM within 24-hours so corrective action can be implemented appropriately. The COC is generally considered to be a legal document and thus will be filled out legibly and as error free as possible.

Samples received by the laboratory will be entered into a sample management system, which must include:

- Laboratory sample number
- Field sample designation
- Analytical batch numbers
- List of analyses requested for each sample container.

Immediately after receipt, the samples will be stored in an appropriate secure storage area. The laboratory will maintain custody of the samples as required by the contract or until further notification by the Project Team PM or QAM. The analytical laboratory will maintain written records showing the chronology of sample handling during the analysis process by various individuals at the laboratory.

27.5 Field Documents and Records

A project-specific field logbook will be used to provide daily records of significant events, observations, and measurements during the assessment in accordance with AEI SOP F10-001 (Attachment 1). The field logbook also will be used to document all sampling activities. The logbooks will be kept in the possession of the field team leader during the on-site work and all members of the field team will have access to the logbook. The logbook will be maintained as a permanent record. Any errors found in the logbook will be verified, crossed-through, and initialed by the person discovering the error.

The field logbook is intended to provide sufficient data and observations to reconstruct events that occurred during field activities. The field logbook should be permanently bound and pre-paginated; designated forms should be used whenever possible to ensure that field records are complete. The following items are examples of information that may be included in the field logbook:

- Weather conditions, health and safety briefing
- Name, date, and time of entries

- Names and responsibilities of field crew members
- Names and titles of any site visitors
- Descriptions of field procedures, and problems encountered
- Number and amount of samples taken at each location
- Details of sampling location, including sampling coordinates
- Sample identification numbers of all samples collected
- Date and time of collection
- Sample collector
- Sample collection method
- Decontamination procedures
- Field instrument calibration and maintenance
- Field measurements (e.g., organic vapor) and general observations.

Example forms are included as Attachment 2.

28.0 SAP WORKSHEET #28 – LABORATORY QC SAMPLES TABLE

28.1 VOCs - Soil

Matrix	Soil
Analytical Group	VOCs
Analytical Method / SOP Reference	8260B EMAX-8260

QC Sample	Frequency / Number	Method / SOP QC Acceptance Limits	Corrective Action	Person(s) Responsible for Corrective Action	DQI	Measurement Performance Criteria
Method Blank	One per preparation batch	All analytes <1/2 QLs	Reprep and reanalyze blank and all samples processed with the non-conforming blank.	EMAX Labs Inc. Chemist	Accuracy/Bias - Contamination	Detections < QLs (Worksheet #15)
Surrogate	Every analytical sample	Refer to QC Limit (Table 1)	Reprep and reanalyze all samples processed with the non-conforming surrogate.	EMAX Labs Inc. Chemist	Accuracy/Bias	%R (Table 1)
LCS	One per sample preparation batch	Refer to QC Limit (Table 1)	Reprep and reanalyze LCS and all samples processed with the non-conforming LCS.	EMAX Labs Inc. Chemist	Accuracy/Bias	%R (Table 1)
MS/MSD	Project designated sample matrix QC.	Refer to QC Limit (Table 1)	If result is indicative of matrix interference, discuss in case narrative. Otherwise check for possible source of error, and extract / reanalyze the sample.	EMAX Labs Inc. Chemist	Interferences - Accuracy/Bias - Precision	%R / RPD (Table 1)

TABLE CONTINUES

SAP WORKSHEET # 28 – LABORATORY QC SAMPLE TABLE – CONTINUED

Acronyms:

DQI	data quality indicator
LCS	laboratory control sample
MS/MSD	matrix spike/matrix spike duplicate
%R	percent recovery
QL	quantitation limit
QC	quality control
RPD	relative percent difference
VOC	volatile organic compound

28.2 VOCs - Groundwater

Matrix	Groundwater
Analytical Group	VOCs
Analytical Method / SOP Reference	8260B EMAX-8260

QC Sample	Frequency / Number	Method / SOP QC Acceptance Limits	Corrective Action	Person(s) Responsible for Corrective Action	DQI	Measurement Performance Criteria
Method Blank	One per preparation batch	All analytes <1/2 QLs	Reprep and reanalyze blank and all samples processed with the non-conforming blank.	EMAX Labs Inc. Chemist	Accuracy/Bias - Contamination	Detections < QLs (Worksheet #15)
Surrogate	Every analytical sample	Refer to QC Limit (Table 1)	Reprep and reanalyze all samples processed with the non-conforming surrogate.	EMAX Labs Inc. Chemist	Accuracy/Bias	%R (Table 1)
LCS	One per sample preparation batch	Refer to QC Limit (Table 1)	Reprep and reanalyze LCS and all samples processed with the non-conforming LCS.	EMAX Labs Inc. Chemist	Accuracy/Bias	%R (Table 1)
MS/MSD	Project designated sample matrix QC.	Refer to QC Limit (Table 1)	If result is indicative of matrix interference, discuss in case narrative. Otherwise check for possible source of error, and extract / reanalyze the sample.	EMAX Labs Inc. Chemist	Interferences - Accuracy/Bias - Precision	%R / RPD (Table 1)

TABLE CONTINUES

SAP WORKSHEET # 28 – LABORATORY QC SAMPLE TABLE – CONTINUED

Acronyms:

DQI	data quality indicator
LCS	laboratory control sample
MS/MSD	matrix spike/matrix spike duplicate
%R	percent recovery
QL	quantitation limit
QC	quality control
RPD	relative percent difference
VOC	volatile organic compound

29.0 SAP WORKSHEET #29 – PROJECT DOCUMENTS AND RECORDS TABLE

Document	Where Maintained
Draft WP, SAP, APP and SSHP	AMJV project file and NAVFAC SW AR
Final WP, SAP, APP and SSHP	AMJV project file and NAVFAC SW AR
Field notes/logbook	AMJV project file
COC forms	AMJV project file
Audit checklists/reports	AMJV and laboratory project file
Corrective action forms/reports	AMJV and laboratory project file
Laboratory data package	AMJV, laboratory project file, and NAVFAC SW AR
Laboratory equipment calibration logs	Laboratory project file
Sample preparation logs	Laboratory project file
Run logs	Laboratory project file
Sample disposal records	Laboratory project file
Data validation package	AMJV, data validator project file, and NAVFAC SW AR

Acronyms:

AMJV	Accord MACTEC Joint Venture
APP	Accident Prevention Plan
AR	Administrative Record
BRADY	Richard Brady & Associates
COC	Chain of Custody
NAVFAC SW	Naval Facilities Engineering Command Southwest
SAP	Sampling and Analysis Plan
SSHP	Site Safety and Health Plan
WP	Work Plan

30.0 SAP WORKSHEET #30 – ANALYTICAL SERVICES TABLE

For this project, analytical services will be provided by EMAX Laboratories, Inc. of Torrance, CA. Turnaround times for the laboratory data package will be based on the date in which the laboratory receives the samples. The final data package will be sent in electronic format to the AMJV office in 10 days. The backup laboratory for this project is BC Laboratories, Inc. of Bakersfield, CA. Both labs are currently certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) for analysis of hazardous materials for the method specified in this SAP, and have received accreditation from a Department of Defense (DoD) ELAP accrediting body.

Matrix	Analytical Group	Sample Locations/ ID Number	Analytical Method	Data Package Turnaround Time	Laboratory[1] / Organization (name and address, contact person and telephone number)	Backup Laboratory[1] /Organization (name and address, contact person and telephone number)
Soil	VOCs	Worksheet #18 contains all sample locations and/or ID numbers	8260B[2]	10 Day (Final)	EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, CA 90501 310.618.8889 *Ye Myint*	BC Laboratories, Inc. 4100 Atlas Court Bakersfield, CA 93308 661.852.4281 *Natalie Serda*
Water	VOCs	Worksheet #18 contains all sample locations and/or ID numbers	8260B[2]	10 Day (Final)	EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, CA 90501 310.618.8889 *Ye Myint*	BC Laboratories, Inc. 4100 Atlas Court Bakersfield, CA 93308 661.852.4281 *Natalie Serda*

Notes and Acronyms:
[1] For this project, the laboratories must be certified by the State of California for EPA Method 8260B. In addition, the laboratories must have received accreditation from a DoD ELAP accrediting body for EPA Method 8260B.
[2] A copy of the analytical SOP will be provided in Attachment 3 of the final version of the SAP (CD-ROM). The field copy will have Attachment 3 as a hard copy.

VOC volatile organic compound

31.0 SAP WORKSHEET #31 – PLANNED PROJECT ASSESSMENTS TABLE

Assessment Type	Frequency	Internal or External	Organization Performing Assessment	Person(s) Responsible for Performing Assessment	Person(s) Responsible for Responding to Assessment Findings	Person(s) Responsible for Identifying and Implementing CA	Person(s) Responsible for Monitoring Effectiveness of CA
Readiness Review[1]	Prior to initiating fieldwork	Internal	AMJV / BRADY	PM[2]	Project team	PM	PM
Field Sampling TSA[1]	At start of field sampling activities	Internal	BRADY	QAM	PM	QAM	QAM PM
Field Documentation Review[1]	Daily	Internal	AMJV / BRADY	QAM PM	PM	QAM	QAM PM

Notes and Acronyms:
[1] Attachment 2 contains the examples of the review and audit forms.
[2] The BRADY project manager will preside over the meeting. Additional participating project team members may include the BRADY quality assurance manager, the site health and safety officer and field sampling personnel.

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady & Associates
CA	Corrective Action
PM	Project Manager
QA	Quality Assurance
QAM	Quality Assurance Manager
TSA	technical systems audit

32.0 SAP WORKSHEET #32 – ASSESSMENT FINDINGS AND CORRECTIVE ACTION RESPONSES

Assessment Type	Nature of Deficiencies Documentation	Individual(s) Notified of Findings	Timeframe of Notification	Nature of Corrective Action Response Documentation	Individual(s) Receiving Corrective Action Response	Timeframe for Response
Readiness Review[1]	Action Item List	Jesse MacNeill, QAM, BRADY	24 hours after review	Completed Action Item List	Jesse MacNeill, QAM, BRADY Tim Shields, Program Manager, BRADY Qihai Chen, PM, AMJV	5 days
Field Sampling TSA[1]	Audit report	Fred Essig, PM, BRADY	24 hours after audit	Corrective Action Form and/or FCN	Jesse MacNeill, QAM, BRADY Tim Shields, Program Manager, BRADY Qihai Chen, PM, AMJV Brenda Reese, RPM, NAVFAC SW (if FCN issued only)	Within 24 hours
Field Documentation Review[1]	Field Data Review Checklist	Fred Essig, PM, BRADY	Upon completion of the review	Corrective Action Form	Jesse MacNeill, QAM, BRADY	2 days

Notes and Acronyms:
[1] Attachment 2 contains the examples of the review and audit forms.

BRADY	Richard Brady & Associates
FCN	Field Change Notice
NAVFAC SW	Naval Facilities Engineering Command Southwest
PM	project manager
QA	Quality Assurance
QAM	Quality Assurance Manager
RPM	remedial project manager
TSA	technical systems audit

33.0 SAP WORKSHEET #33 – QA MANAGEMENT REPORTS TABLE

Type of Report	Frequency	Projected Delivery Date(s)	Person(s) Responsible for Report Preparation	Report Recipient(s)
Readiness Review[1]	Prior to initiating fieldwork	10 days prior to initiation of field activities	Fred Essig, PM, BRADY	Tim Shields, Program Manager, BRADY; Jesse MacNeill, QAM, BRADY Qihai Chen, PM, AMJV
Field Sampling TSA[1]	At start of field sampling activities	24 hours after initiation of audit	Jesse MacNeill, QAM, BRADY	Tim Shields, Program Manager, BRADY; Fred Essig, PM, BRADY Qihai Chen, PM, AMJV
Field Documentation Review[1]	Daily	Upon completion of the review	Jesse MacNeill, QAM, BRADY	Tim Shields, Program Manager, BRADY; Fred Essig, PM, BRADY Qihai Chen, PM, AMJV

Notes and Acronyms:
[1] Attachment 2 contains the examples of the review and audit forms.

BRADY	Richard Brady & Associates
PM	Project Manager
QA	Quality Assurance
QAM	Quality Assurance Manager
TSA	technical systems audit

34.0 SAP WORKSHEET #34 – VERIFICATION (STEP I) PROCESS TABLE

Verification Input	Description	Internal / External	Responsible for Verification
COC forms	COC forms will be reviewed internally upon their completion and verified against the packed sample containers they represent. The shipper's signature on the COC should be initialed by the reviewer, a copy of the COC retained in the project file, and the original and remaining copies taped inside the container for shipment.	Internal	Field Sampling Personnel (AMJV)
Field notes/logbook	Field notes and/or entries into the field logbook will be reviewed internally and placed in the project file upon project completion.	Internal	Field Sampling Personnel (AMJV/BRADY) Quality Assurance Manager (BRADY)
Audit reports	Upon report completion, a copy of all audit reports will be placed in the project file. If corrective actions are required, a copy of the documented corrective action taken will be attached to the appropriate audit report in the project file.	Internal	PM (BRADY) Quality Assurance Manager (BRADY)
Laboratory data	All laboratory data packages will be verified internally by the laboratory performing the work for completeness and technical accuracy prior to submittal. All received data packages will be verified externally according to the data validation procedures specified in Worksheet # 36 of this SAP.	Internal/ External	EMAX Laboratories, Inc. LDC
Electronic data deliverables	All EDDs will be verified internally by the laboratory performing the work for completeness and technical accuracy prior to submittal. All received EDDs will be verified externally against the hardcopy laboratory data packages.	Internal/ External	EMAX Laboratories, Inc. LDC

Acronyms:

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady & Associates
COC	Chain-of-Custody
EDD	Electronic Data Deliverable
LDC	Laboratory Data Consultants, Inc.
PM	Project Manager
QAM	Quality Assurance Manager
SAP	Sampling and Analysis Plan

35.0 SAP WORKSHEET #35 – VALIDATION (STEPS IIA AND IIB) PROCESS TABLE

Step IIa / IIb[1]	Validation Input	Description	Responsible for Validation
IIa	Communication	Establish that required communication procedures were followed by field or laboratory personnel.	PM (AMJV/BRADY) Quality Assurance Manager (BRADY)
IIa	Sampling Methods and Procedures	Establish that the required sampling methods were used and that any deviations were noted. Ensure that the sampling procedures and field measurements met performance criteria and that any deviations were documented.	PM (AMJV/BRADY) Quality Assurance Manager (BRADY)
IIa	Holding Times	Ensure that samples were analyzed within holding times specified in method, procedure, or contract requirements. If holding times were not met, confirm that deviations were documented, that appropriate notifications were made as stated in BRADY's Statement of Work to the laboratory.	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIa	Analytes	Ensure that required lists of analytes were reported as specified in governing documents (i.e., method, procedure, or contract).	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIa	Analytical Methods and Procedures	Establish that the required analytical methods were used and that any deviations were noted. Ensure that the QC samples met performance criteria and that any deviations were documented.	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIa	Data Qualifiers	Determine that the laboratory data qualifiers were defined in the laboratory data package and applied as specified.	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIa	Field Transcription	Authenticate transcription accuracy of sampling data (i.e., from field logbook to report).	PM (BRADY) Quality Assurance Manager (BRADY)
IIb	Sampling Plan	Determine whether the sampling plan was executed as specified (i.e., the number, location, and type of field samples were collected and analyzed as specified in the QAPP).	PM (AMJV/BRADY) Quality Assurance Manager (BRADY)
IIb	Sampling Procedures	Evaluate whether sampling procedures were followed with respect to equipment and proper sampling support (e.g., techniques, equipment, decontamination, volume, temperature, preservative, etc.).	PM (AMJV/BRADY) Quality Assurance Manager (BRADY)
IIb	Co-located Field Duplicates	Compare results of collocated field duplicates with criteria established in the QAPP (if applicable).	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIb	Project Quantitation Limits	Determine that quantitation limits were achieved, as outlined in the QAPP and that the laboratory successfully analyzed a standard at the QL.	Quality Assurance Manager (BRADY) Data Validator (LDC)
IIb	Performance Criteria	Evaluate QC data against project-specific performance criteria in the QAPP (i.e., evaluate quality parameters beyond those outlined in the methods).	Quality Assurance Manager (BRADY) Data Validator (LDC)

SAP WORKSHEET #35 – VALIDATION (STEPS IIA AND IIB) PROCESS TABLE – CONTINUED

Notes and Acronyms:

[1] IIa=compliance with methods, procedures, and contracts [see Table 20, page 117, UFP-QAPP manual, V.1, March 2005.]
IIb=comparison with measurement performance criteria in the SAP [see Table 21, page 118, UFP-QAPP manual, V.1, March 2005]

AMJV	Accord MACTEC Joint Venture
BRADY	Richard Brady & Associates
LDC	Laboratory Data Consultants, Inc.
PM	Project Manager
QC	Quality Control
QL	Quantitation Limit
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plans

36.0 SAP WORKSHEET #36 – ANALYTICAL DATA VALIDATION (STEPS IIA AND IIB) SUMMARY TABLE

Step IIa / IIb[1]	Matrix	Analytical Group	Validation Criteria[2]	Data Validator (title and organizational affiliation)
IIa	Soil & Groundwater	VOCs	In accordance with the DoD QSM v4.2, EPA Contract Lab Program National Functional Guidelines, SW-846 Methods, NAVFAC SW EWI #1, and EPA Level III and IV guidelines.	Project Manager, LDC
IIb	Soil & Groundwater	VOCs	In accordance with the DoD QSM v4.2, EPA Contract Lab Program National Functional Guidelines, SW-846 Methods, NAVFAC SW EWI #1, and EPA Level III and IV guidelines.	Project Manager, LDC

Notes and Acronyms:

[1] IIa=compliance with methods, procedures, and contracts [see Table 20, page 117, UFP-QAPP manual, V.1, March 2005.]
IIb=comparison with measurement performance criteria in the SAP [see Table 21, page 118, UFP-QAPP manual, V.1, March 2005]

[2] Validation shall also be conducted in accordance with NFESC Special Publication SP-2056-ENV, *Navy Installation Restoration Chemical Data Quality Manual*, Appendix H, Naval Facilities Engineering Command, September 1999.

DoD	Department of Defense
EPA	Environmental Protection Agency
EWI	environmental work instruction
LDC	Laboratory Data Consultants, Inc.
NAVFAC SW	Naval Facilities Engineering Command Southwest
PM	project manager
QSM	quality systems manual
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plans
VOC	volatile organic compound

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37.0 SAP WORKSHEET #37 – USABILITY ASSESSMENT

This section describes the QA/QC activities that occur after the data collection phase of the project has been completed. These activities ensure that data conform to the specified criteria and thus are useful for their intended purpose.

37.1 Usability Assessment Objectives

The data quality is a function of the sampling plan rationale and the procedures used to collect the samples, as well as the analytical methods and instrumentation used. As discussed in the following sections, data collected during this groundwater assessment will be evaluated for usability with respect to precision, accuracy, representativeness, completeness, comparability and sensitivity to determine whether the project DQOs have been met. All validated data collected for this groundwater assessment will be identified and included in a data usability assessment. The data usability assessment will be completed by BRADY personnel under the oversight of Tim Shields, BRADY Program Manager. The BRADY Project Manager, Fred Essig, will be responsible for the coordination and performance of the usability assessment.

37.2 Precision

Precision quantifies the repeatability of a given measurement. Given the limited number of field and QC samples for this project, precision will be measured by the analyses of both field and laboratory duplicate samples, including MS/MSD. The laboratory will review the QC samples to ensure that internal QC data lies within the limits of acceptability. Any suspect trends will be investigated and corrective actions taken. The findings of the usability of the data relative to precision will be included in the report, including any limitations on the data set and/or individual analytical results. Precision is estimated by calculating the relative percent difference (RPD) of the duplicate samples, as shown in the following equation:

$$RPD = \frac{|A - B|}{(A + B)/2} \quad x \quad 100$$

Where:

A = First duplicate concentration
B = Second duplicate concentration

37.3 Accuracy

Accuracy refers to the percentage of a known amount of analyte recovered from a given matrix. It measures the bias in a measurement system. A measurement is accurate when the value reported does not differ (by a specified amount) from the true value, or from the known concentration of a MS or standard. The accuracy of the analytical determinations will be evaluated based on the analyses of LCS, MS/MSD, and surrogate spikes (where applicable). The findings of the usability of the data relative to accuracy will be included in the report, including

any limitations on the data set and/or individual analytical results. Percent recoveries are estimated using the following equation:

$$Percent\ \ Recovery\ \ =\ \ \frac{S-C}{T}\ \ x\ \ 100$$

Where:

S = Measured spike sample concentration
C = Sample concentration
T = True or actual concentration of the spike

37.4 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program. Sample representativeness will be assessed in terms of adherence to established sample collection procedures, required preservation, storage, and holding times. The findings of the usability of the data relative to representativeness will be included in the report, including any limitations on the data set and/or individual analytical results.

37.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared with the amount expected to be obtained under normal conditions. Completeness is determined based on the number of valid points (data not rejected) relative to the total number of validated data. In addition to validated results, broken, spilled samples, and any other problems that may compromise sample representativeness are included in the assessment of completeness.

$$\text{Completeness}\ (\%) = \frac{\text{Number of Valid Measurements}}{\text{Total Number of Measurements}} \times 100$$

A completeness standard of 90% has been established for this project. The findings of the usability of the data relative to completeness will be included in the report, including any limitations on the data set and/or individual analytical results.

37.6 Comparability

Comparability expresses the confidence with which one data set is compared with another. This evaluation criterion is critical for use in analyzing temporal trends in constituent variations within the sampling domain. Comparability will be achieved by using standard methods for sampling and analyses, presenting data in standard units, normalizing results to standard conditions, and using standard and comprehensive reporting formats. The findings of the usability of the data relative to comparability will be included in the report, including any limitations on the data set and/or individual analytical results.

37.7 Sensitivity

Sensitivity is the ability of the analytical test method and/or instrumentation to differentiate between detector responses to varying concentrations of the target constituent. Methodology to establish sensitivity for a given analytical method or instrument includes examination of standardized blanks, instrument detection limit studies, and calibration of the QL. The findings of the usability of the data relative to sensitivity will be included in the report, including any limitations on the data set and/or individual analytical results.

37.8 Usability Findings

The findings of the usability assessment will be presented in the assessment report and will include, in addition to the criteria described above, an analysis of any discrepancies in the COC, missed holding times for analysis, modifications to the scope of work, field changes, potential matrix interferences, and potential environmental impacts due to site conditions or meteorological effects.

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SAP Tables

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TABLE 1

Precision and Accuracy Requirements for U.S. EPA Method 8260B

Analyte	Precision (RPD)	Accuracy (% Recovery)	
		MS	LCS
Volatile Organic Compounds by EPA Method 8260B	***Soil***		
1,1,1-trichloroethane (1,1,1-TCA)	50	60-130	60-130
1,1-dichloroethane (1,1-DCA)	50	70-140	70-130
1,1-dichloroethene (1,1-DCE)	50	50-140	60-130
1,2-dichloroethane (1,2-DCA)	50	60-160	60-140
cis-1,2-Dichloroethene (cis-1,2-DCE)	50	70-140	70-130
Tetrachloroethylene (PCE)	50	70-130	70-130
Trichloroethene (TCE)	50	60-140	70-130
Vinyl Chloride (VC)	50	60-150	60-150
Surrogates			
1,2-Dichloroethane -d 4	--	60-160	70-140
Toluene-d8	--	70-140	70-130
4-Bromofluorobenzene	--	70-150	70-130
Volatile Organic Compounds by EPA Method 8260B	***Water***		
1,1,1-trichloroethane (1,1,1-TCA)	30	70-130	70-130
1,1-dichloroethane (1,1-DCA)	30	70-130	70-130
1,1-dichloroethene (1,1-DCE)	30	60-140	60-130
1,2-dichloroethane (1,2-DCA)	30	70-140	70-130
cis-1,2-Dichloroethene (cis-1,2-DCE)	30	70-140	70-130
Tetrachloroethylene (PCE)	30	70-130	70-130
Trichloroethene (TCE)	30	60-140	70-130
Vinyl Chloride (VC)	30	60-160	60-150
Surrogates			
1,2-Dichloroethane -d 4	--	70-140	70-140
Toluene-d8	--	70-140	70-130
4-Bromofluorobenzene	--	70-130	70-130

Notes:

RPD	relative percent difference as calculated by the pair of analytical duplicates
% Recovery	percent recovery of spiked compounds
MS	matrix spike
LCS	laboratory control sample (blank spike)

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TABLE 2

Additional References

Author	Source
Haley & Aldridge, Inc., 2009	Report on Groundwater Assessment Investigation Alpha and Beta Aquifers, Boeing Huntington Beach Facility, Huntington Beach, California. November 24.
Tetra Tech EC, Inc., 2007	Final Well Decommissioning Report. February 12.
Westinghouse Savannah River Company (Westinghouse). 2001.	Evaluating DNAPL Source and Migration Zones: M-Area Settling Basin and the Western Sector of A/M Area, Savannah River Site (U). Prepared for the United States Department of Energy. 15 June.

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SAP Figures

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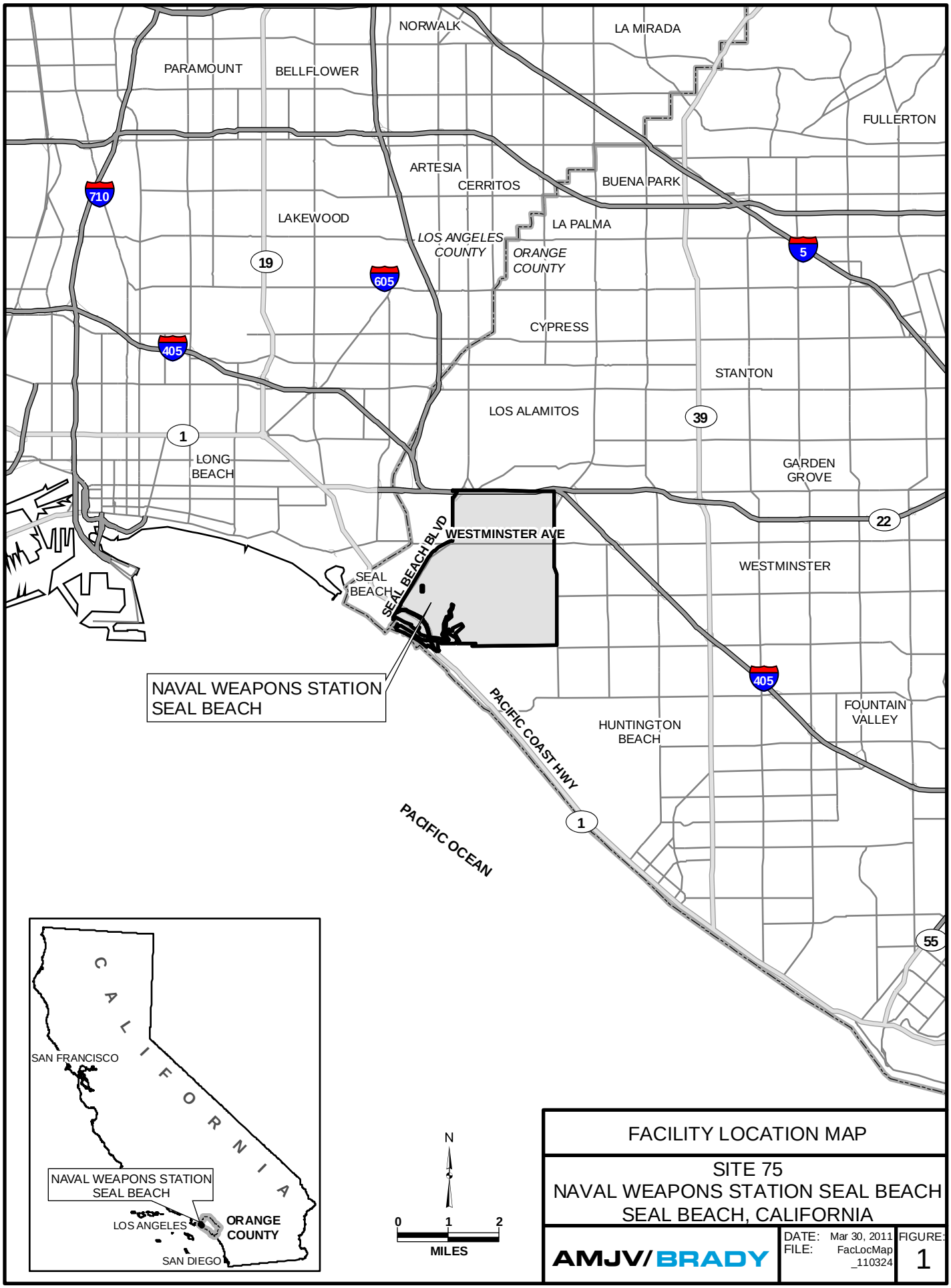

FACILITY LOCATION MAP

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: FacLocMap _110324

FIGURE: 1

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SITE LOCATION MAP

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: SiteLocMap _110324

FIGURE: 2

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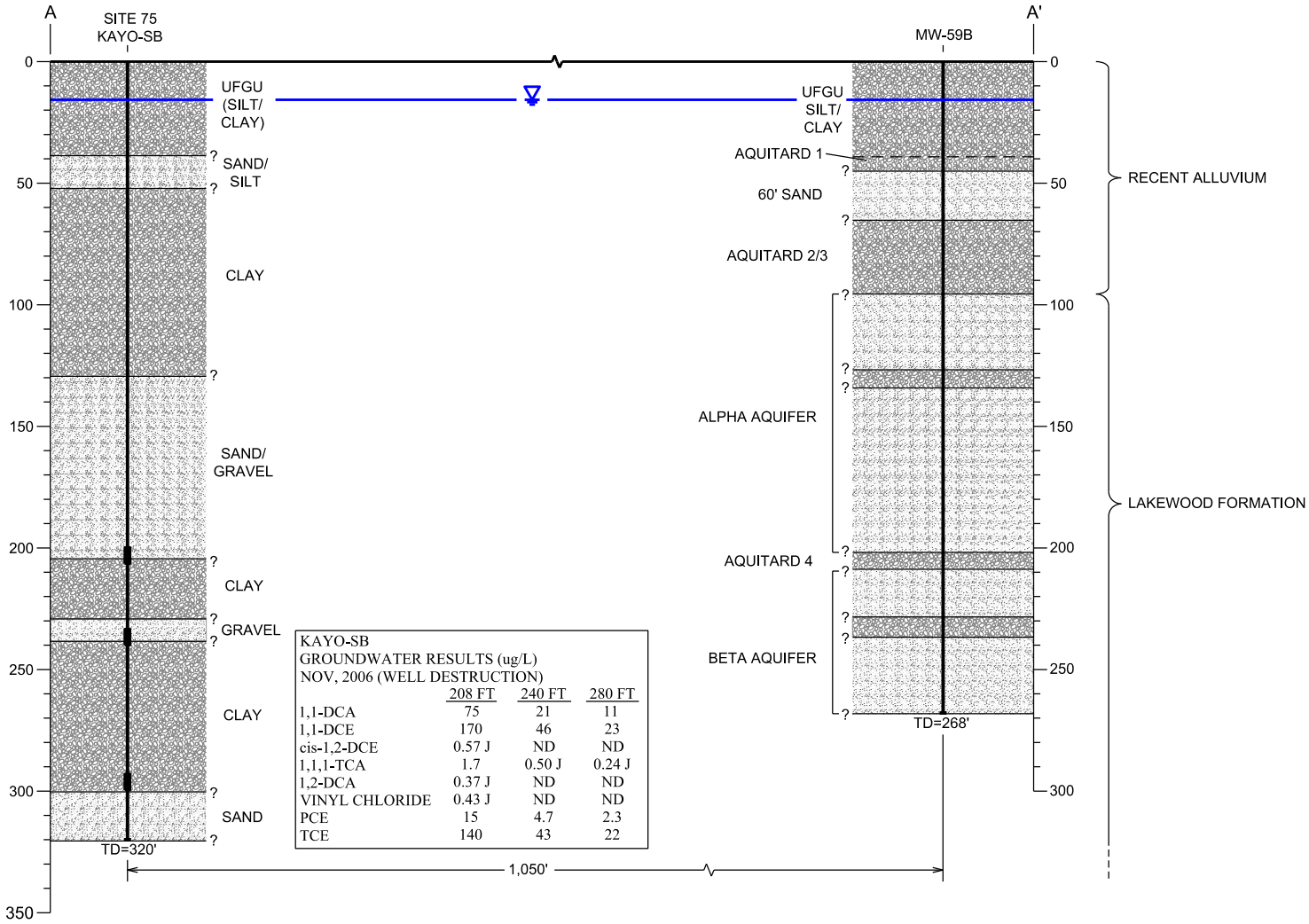
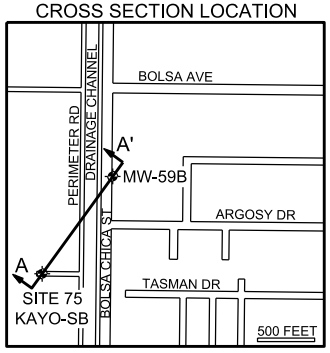
GENERAL CSM CROSS SECTION
LITHOLOGIC REPRESENTATION AT
FORMER WELL KAYO-SB AND WELL MW-59B



KAYO-SB
GROUNDWATER RESULTS (ug/L)
NOV, 2006 (WELL DESTRUCTION)

	208 FT	240 FT	280 FT
1,1-DCA	75	21	11
1,1-DCE	170	46	23
cis-1,2-DCE	0.57 J	ND	ND
1,1,1-TCA	1.7	0.50 J	0.24 J
1,2-DCA	0.37 J	ND	ND
VINYL CHLORIDE	0.43 J	ND	ND
PCE	15	4.7	2.3
TCE	140	43	22

CROSS SECTION LOCATION



REFERENCE:
Haley & Aldrich, Inc., 2009c, Report on Groundwater Assessment Investigation Alpha and Beta Aquifers

NOTES:
1. THE WELL LOGS DO NOT SHOW THE PRESENCE OF THE 45' SAND AND THE 95' SAND IN THE AREAS SHOWN.

UFGU = UPPER FINED GRAIN UNIT
TD = TOTAL DEPTH
ug/L = MICROGRAMS PER LITER

APPROXIMATE GROUNDWATER ELEVATION

GENERAL CSM CROSS SECTION
SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

Date: Mar 30, 2011
File: XSECTA.dgn

FIGURE 3

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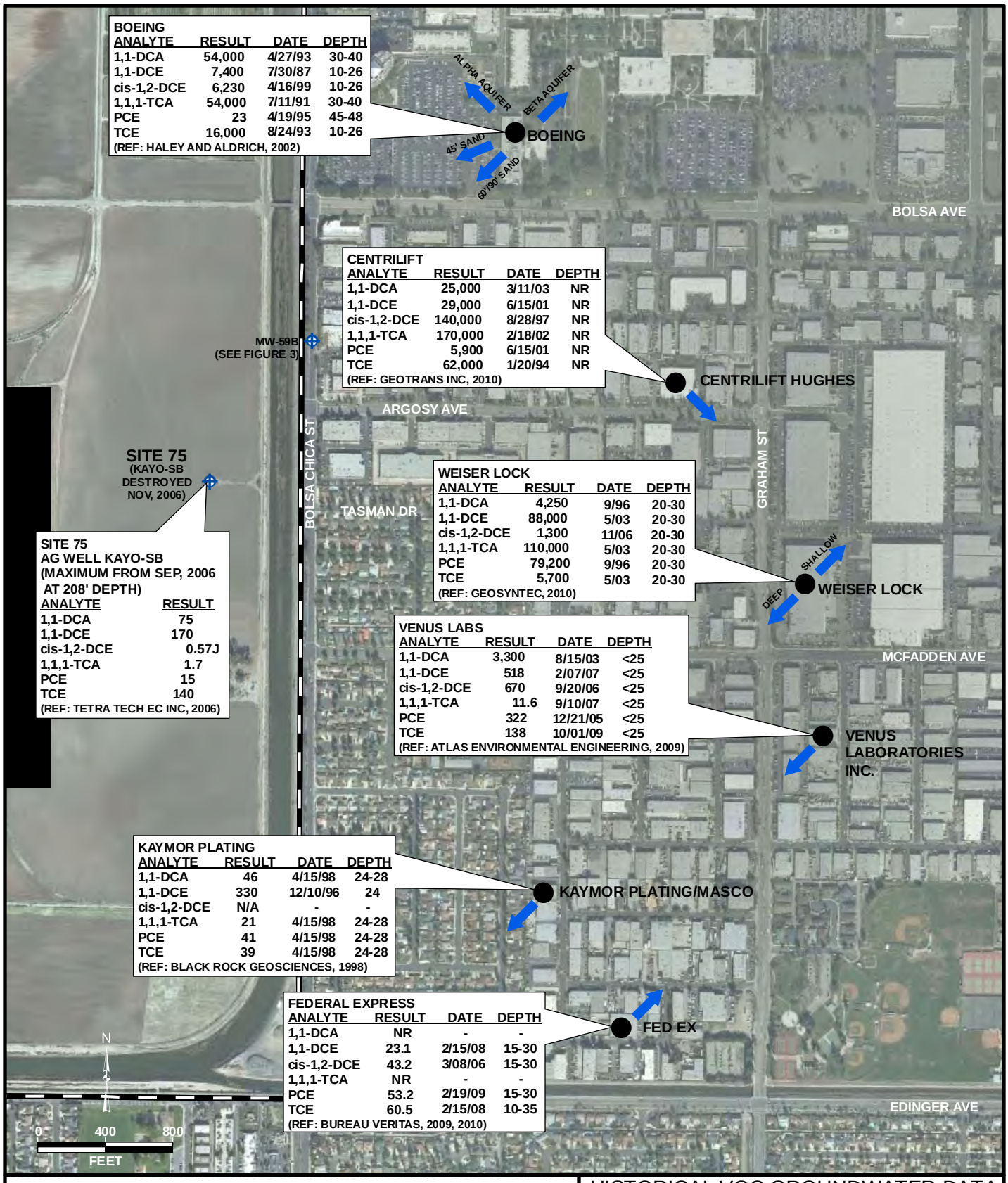

LEGEND

- SITE 75, FORMER AGRICULTURAL WELL KAYO-SB
- NON-NAVY SITE NEARBY SITE 75
  NOTE: DOES NOT INDICATE LOCATION OF GROUNDWATER MONITORING WELLS
- GROUNDWATER GRADIENT DIRECTION (WATER BEARING UNIT NOTED)
- BASE BOUNDARY

NOTES

1. DEPTHS ARE APPROXIMATE, BASED ON AVAILABLE INFORMATION
2. DEPTH UNITS ARE FEET
3. RESULT UNITS ARE MICROGRAMS PER LITER (µg/L)

J = ESTIMATED
N/A = NOT AVAILABLE
NR = NOT REPORTED

HISTORICAL VOC GROUNDWATER DATA AT NEARBY SITES

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: Mar 30, 2011
FILE: HistData _110329

FIGURE: 4

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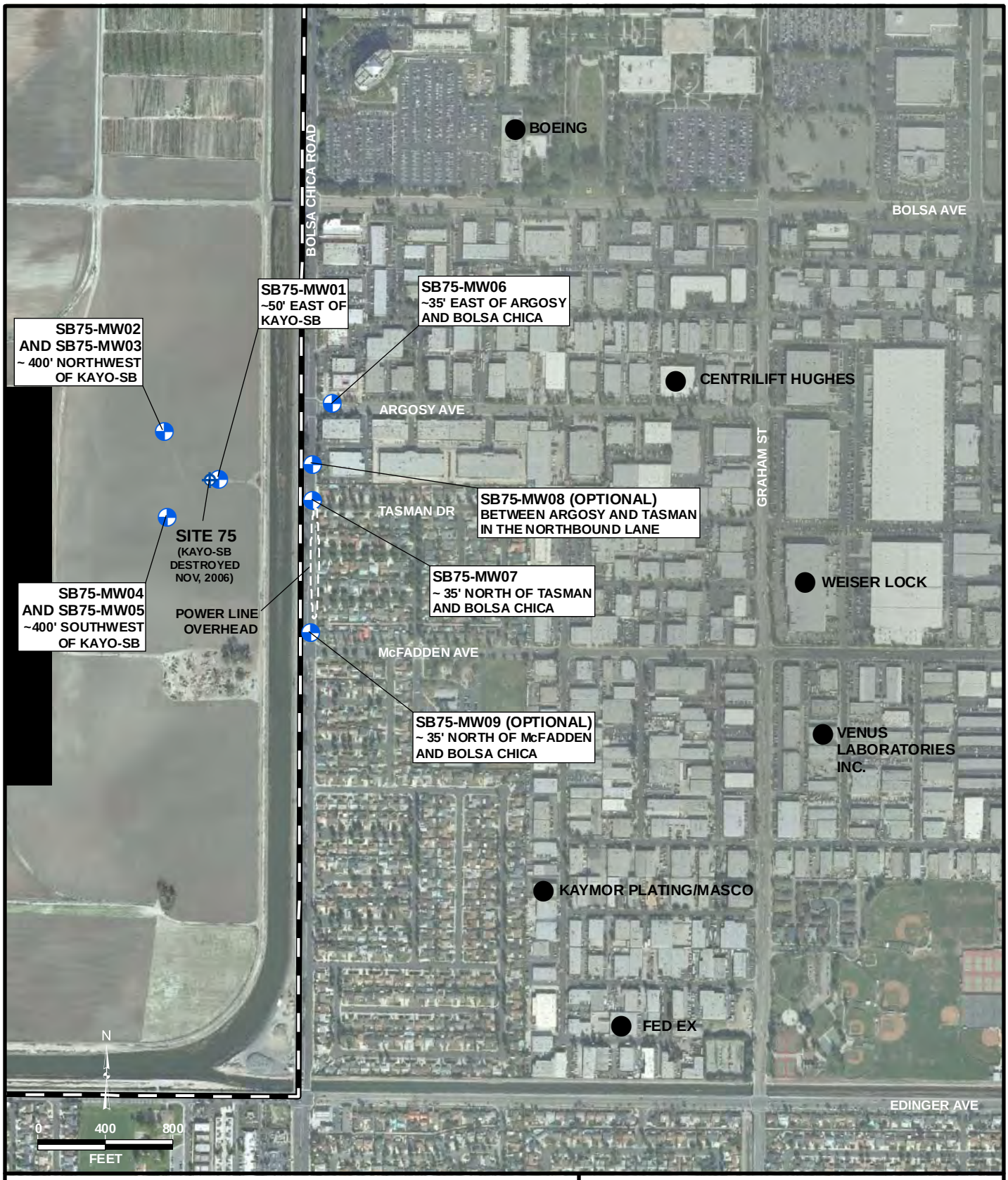

LEGEND

- PROPOSED BORING/WELL LOCATION
- SITE 75, FORMER AGRICULTURAL WELL KAYO-SB
- NON-NAVY SITE NEARBY SITE 75
  NOTE: DOES NOT INDICATE LOCATION
  OF GROUNDWATER MONITORING WELLS
- BASE BOUNDARY

PROPOSED BORING/WELL LOCATIONS

SITE 75
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

AMJV/BRADY

DATE: June 14, 2011
FILE: PropLoc _110324

FIGURE: 5

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SAP Attachment 1

Standard Operating Procedures

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ATTACHMENT 1
STANDARD OPERATING PROCEDURES

TABLE OF CONTENTS

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1.0 SIGNATURE AUTHORITY

TITLE	NAME	SIGNATURE
Quality Control Manager	Yu Zeng	
Sr. Technical Manager	Rod Reeve	
Program Manager	Max Pan	

2.0 PURPOSE

This Accord Engineering, Inc. (AEI) standard operating procedure (SOP) describes general procedures for calibration and use of instruments used to collect measurements in the field.

Such instruments produce direct field measurements used in reports to the client and field screening measurements used to make field decisions at the site.

Calibration of specific instruments commonly used is discussed in attachments to this SOP. For any instrument this procedure should be supplemented with the manufacturer's calibration and maintenance instructions.

3.0 SCOPE

This SOP addresses the need to provide instrument calibration data to meet the quality control demands of the analysis procedure for which the instrument is being used.

This SOP does not address calibration of instruments used for health and safety hazard detection, health physics, or industrial hygiene monitoring.

A data sheet for recording instrument calibration measurements and associated information is provided as Attachment A. If there are manufacturer prepared data sheets, field personnel should use them instead of the attached sheet.

4.0 REFERENCE MATERIALS

DOC. NO.	TITLE
U.S. EPA 1989	Superfund Ground Water Issue. EPA/540/4-89/00, March.
U.S. EPA 1987	A Compendium of Superfund Field Operations Methods. EPA/540/P-87/2001, December.
U.S. EPA 1987	Data Quality Objectives for Remedial Activities - Development Process, EPA/540/G-87/003, March.
U.S. EPA 1987	RCRA Groundwater Monitoring Technical Enforcement Guidance Document, September.

DOC. NO.	TITLE
NA	American Public Health Association, American Water Works Association Water, Environment Federation. 1992. Standard Methods for the Examination of Water and Wastewater, 18th Edition.
NA	American Society for Testing Materials, Annual Book of ASTM Standards, Section 2, Standard Practice for Oxidation-Reduction Potential of Water ASTM D 1498-76 (1981), 1993.

5.0 DEFINITIONS

Calibration - A procedure performed when using an instrument to determine whether the instrument is operating properly. An initial calibration can include adjustment of the instrument if it does not initially pass calibration. Calibration may involve comparing an instrument response to the response of an instrument known to be operating properly (instrument calibration by comparison to a standard instrument) or instrument measurement of a parameter whose value is known (instrument calibration by measurement of a standard).

Direct Field Measurement - A measurement of some parameter at the field site that is required to be reported by the scope of work. An example of a direct field measurement would be the measurement of water pH taken from a monitoring well during quarterly monitoring.

Field Screening Measurement - A measurement of a parameter at the field site that provides information that controls the course of a future action at the field site. For example, a field screening measurement of volatile organic compounds coming from excavated soil with a flame ionization detector (FID) or photo-ionization detector (PID) would be used to determine if the soil could be transported off-site or piled for remediation.

Standard - A material with known values for one or more of its properties. It can be used to check an instrument response. A standard usually represents a "secondary standard" that has itself been compared to a "primary standard." Standards can be manually prepared from materials of known qualities, but most standards are now purchased commercially and are traceable to primary standards. An example of a standard is a commercial pH buffer of known pH with guarantee of traceability to other primary chemical standards. Such a buffer solution can be used to calibrate pH meters. Note: A chemical standard usually has an expiration date, after which traceability is no longer guaranteed.

Standard Instrument - An instrument used in the calibration of other instruments. A standard instrument should only be used for standardization of other instruments and should not be used to measure parameters at field sites. A standard instrument usually represents a "secondary standard instrument," which has been compared to a '"primary standard instrument." An example of a standard instrument is a thermometer (secondary standard instrument) that can trace its own calibration back to a primary standard of the National Institute for Standards and Technology (NIST).

6.0 CALIBRATION FOR ANALYTICAL METHOD REQUIREMENTS

Calibration of a typical field instrument could include the following calibration steps:

1. Remove the instrument from its container, assemble it (if necessary), turn it on, and allow the instrument to warm up as necessary.
2. Clean and decontaminate the instrument (if necessary).
3. Calibrate the instrument for field use according to SOP or manufacturer's instructions. Calibration can be achieved by comparison to a standard instrument or by measurement of a standard. This first calibration is referred to as an "initial calibration." Adjustment of the instrument to obtain proper calibration is allowed during an initial calibration.
4. Following initial calibration, clean and decontaminate the instrument again (if necessary).
5. After using the instrument to make physical/chemical field measurements clean and decontaminate the instrument subsequent to each new measurement (if necessary).
6. Continue to check calibration at specific time intervals, when conditions change, or when a certain number of measurements have been taken as specified by the instrument manufacturer.
7. When measurements are completed, calibrate the instrument a final time. This final calibration is used to show that the instrument operated correctly from the time of the last continuing calibration until the time all field site measurements were completed.
8. Clean, decontaminate (if necessary), and return the instrument to its storage location.

6.1. Instrument Adjustment

Instruments may "drift" or slowly depart from a calibrated condition. Instruments that drift usually have control devices (adjustments) that can be tuned to recalibrate the instrument. The actual adjustments are described in the manufacturer manuals.

6.2. Initial Calibration

Initial calibration typically involves comparing instrument values to at least three different settings of a standard instrument or to at least three different standards. Instruments are usually designed to give linear response outputs. One comparison determines a point (nothing). Two comparisons determine only a simple line (slope). Three comparisons or more determine the shape of the curve (linearity). A three-comparison calibration is also called a "three-point" calibration.

Some instruments cannot be initially calibrated using a three-point method because of instrument limitations or lack of suitable standards. For these instruments, either a two-point calibration or a one-point calibration with a zero, ambient, or background point has to suffice. A two-point calibration should be arranged so that the two points of calibration bracket the expected measurements.

Initial calibration includes both the calibration process itself and any necessary "on-the-spot" instrument adjustments necessary for the calibration to pass. For initial calibration purposes, instrument adjustment is allowed to prevent calibration failure (Section 7.0).

6.3. Continuing and Final Calibrations

Continuing and final calibrations involve comparing instrument values to one or more different settings of a standard instrument or to one or more standards. The purpose of continuing and final calibrations is to check if instrument failure or drift has occurred since the initial calibration. Instrument adjustment is not allowed to prevent failure of a continuing or final calibration.

7.0 PASSED VERSUS FAILED CALIBRATION

Calibration compares an observed instrument response to an expected response. When agreement between an observed instrument response to an expected response is within the calibration criteria, the instrument is said to have "passed" calibration. When the observed and expected responses are farther apart than the calibration criteria, then the instrument is said to have "failed" calibration. Calibration failure is also called an "out-of-control" calibration. What constitutes the calibration criteria must be predetermined and known at the time of calibration. Calibration criteria can be found in the instrument manufacturer's manuals and in field sampling plans.

7.1. Declaration, Repair, and Recalibration After Failed Calibration

Failed initial calibrations that are not correctable with equipment adjustment, failed continuing calibrations, and failed final calibrations require declaration (Section 7.2), repair (Section 7.5), and recalibration.

7.2. Declaration of a Failed Calibration

All failed calibrations must be noted in the instrument user's logbook, instrument calibration logbook, or instrument maintenance logbook.

7.3. Instrument (and Standard) Inspection After Failed Calibration

After an instrument has failed calibration and the failure has been declared, it should be inspected to see if something is obviously wrong. Such an inspection could take a few seconds to a few minutes. At this point, it is proper to try any adjustment procedure, parts replacement, or repair to fix the instrument.

Inspection of the standard instrument or standard should not be overlooked.

7.4. Instrument is Defective

If the instrument failed calibration, cannot be adjusted, and inspection suggests it is not working, the instrument must be marked “defective" and be taken out of service.

It is improper to use an instrument that is labeled as defective.

7.5. Repair of a Defective Instrument

Sometimes defective instruments can be returned to a field service office for repairs. Replacements of batteries, probes, bulbs, fuses, chemicals, etc., can be handled in this way.

A defect requiring more than a simple part replacement should be handled by sending the defective instrument to the manufacturer or to an authorized repair shop.

A repaired instrument is not serviceable until it has passed an initial calibration.

7.6. Recording Instrument Repair and Recalibration

When an instrument is repaired after a failed calibration, the repair should be noted immediately following the declaration of calibration failure in the logbook.

Following a failed calibration and repair, the instrument should undergo an initial calibration before being used.

8.0 ATTACHMENTS

A Instrumentation Calibration Data Sheet

B Water Quality Instruments

C Field Screening Instruments

9.0 REVISION HISTORY

REVISION	SECTION/FORM	REVISION DESCRIPTION	DATE
-	-	Initial Release	

ATTACHMENT A

Instrumentation Calibration Data Sheet

INSTRUMENT CALIBRATION DATA SHEET

Task/Site Description		Serial No.
Instrument Type	Instrument Serial No.	Job No.
Originator:	Employer/Employee No.	Date
Measurement Purpose		Sheet of
		Work Location.
		Reference Attached
		Functional Check Only
Calibration Method		Procedure Reference
Calibration Standards Used	Grade (circle one) Commercial NIST Traceable	
	Calibration Standard Supplier or Certificate Reference	

Calculations

As Found Response

As Left Response

Attachments

Review		Action
Calibration By:	Date	File
Site Manager/CTOL	Date	Repair
Property Manager	Date	

ATTACHMENT B

Water Quality Instruments

1.0 INTRODUCTION

This attachment describes calibration procedures for the following water quality measurements:

TYPE OF MEASUREMENT	SECTION NUMBER
Hydrogen Ion Concentration (pH)	2
Specific Electrical Conductance (EC)	3
Temperature (°C)	4
Redox Potential (Eh)	5
Dissolved Oxygen (DO)	6
Turbidity (NTU)	7

Manufacturer instrument manuals should be referred to for proper calibration of all field analytical instruments.

Sometimes calibration depends upon the potential data uses. For example, calibration measurements of temperature, specific conductance, and hydrogen ion concentration (pH) associated with sampling for chemical analysis should be stable within 10 percent for at least three consecutive measurements.

2.0 HYDROGEN ION CONCENTRATION (PH) MEASUREMENT

This procedure applies only to field measurements of hydrogen ion concentration in aqueous media. Measurements in non-aqueous media (e.g., oil) will not be accurate and will damage the electrodes.

This measurement is determined electrometrically using a pH meter with either a glass electrode in combination with a reference electrode or a combination electrode.

Hydrogen ion concentration of a sample is given in pH units. The term "pH" is often used interchangeably with hydrogen ion concentration.

Temperature affects on the measurement of pH are controlled by using instruments having temperature compensation or by calibrating the electrode meter system at the temperature of the sample.

Samples with low specific conductance can cause fluctuations in pH readings.

The electrode shall be equilibrated by immersing the probe in the sample for a time before taking the measurement. Longer times should be allowed if the pH readings are either high or low.

Coatings of oily material or particulate matter can impair electrode response. Remove these coatings by spraying the electrode with distilled water then gently wiping the electrode with a tissue and rinsing again with distilled water.

Transport the pH meter and electrodes carefully. Both the meter and electrodes can be damaged by rough handling. Prior to field activity check the meter for mechanical and electrical failures, weak batteries, low electrode fluid levels, and cracked electrodes.

When not in use, electrode tips should be covered with a cap to prevent any liquids in the electrode from drying out.

2.1. Equipment

A portable pH meter with appropriate electrodes, secondary standard buffer solutions (pH 4, pH 7, and pH 10), and a polyethylene or Teflon beaker shall be used during the collection of pH measurements. A plastic squirt bottle of distilled water or de-ionized water is required for rinsing electrodes. A box of Kim-wipes or equivalent is useful for drying the electrodes.

2.2. Initial Calibration Procedure

Perform an initial calibration every day against standard buffer solutions before using an instrument to measure samples.

1. Rinse the electrode(s). Spraying water directly on the electrode(s) from a plastic spray bottle works best.
2. Using shaking and daubing with a Kim-wipe, remove any water droplets on the electrode(s).
3. Rinse the plastic beaker with 3 small volumes of buffer and pour in enough buffer solution to cover the tip of the electrode(s).
4. The electrode(s) are dipped in buffer solution in the plastic beaker. A reading should not be taken until the reading value stabilizes. This usually happens in 30 seconds or less. Swirling the beaker helps speed stabilization. At high or low pH, the wait may be as long as a minute.
5. If necessary, adjust the instrument to read the value of the buffer. Note and record pH value in the field notebook, along with buffer ID, date, instrument ID, and name of person taking reading,
6. Rinse and daub the electrode(s).
7. Repeat steps 1 through 5 for each buffer solution. Failure to be able to adjust the pH meter at any buffer level requires rereading and readjustment at all buffer levels. In addition, failure to be able to adjust the pH meter at all buffer levels indicates that a new electrode(s) may be required.

Calibration criteria can be found in the manufacturer's manual or in the Field Sampling Plan. As a worst case calibration, the readings should not be more than plus or minus 0.5 pH units from the readings expected for each buffer.

Having passed initial calibration, samples can now be analyzed using steps similar to those used in the initial calibration. The electrode(s) should be rinsed between samples. The beaker should be rinsed three times with sample solution. The electrode should be swirled while waiting for reading stabilization. Record the pH value in the field notebook along with sample ID, date, instrument ID and name of person taking reading.

2.3. Continuing Calibration

At specific intervals based on time or number of samples, the pH meter should be recalibrated with one or more of the buffers.

The procedure for continuing calibration is the same as for the initial calibration except that comparison to all buffers may not be required. If multiple continuing calibrations are required, buffer ranges should be alternated.

The instrument also should be recalibrated if there is a change of 5°C or greater between the sample temperature and the calibration temperature.

2.4. Final Calibration

After all samples have been measured, a single final calibration of a single buffer should be made. This final calibration is typically done using the pH 7 buffer.

Record the pH value in the field notebook along with sample ID, date, instrument .ID and name of person taking reading.

After the final calibration, the electrodes should be capped and the instrument should be replaced in its carrier.

2.5. Calibration For Only A Few Samples

In some situations, only a single sample or a small number of samples need to be measured. In such cases, only an initial calibration and a final calibration need be performed.

2.6. Reporting Limits

Readings shall be expressed in pH units. Results shall be reported to the nearest 0.1 pH unit. Duplicate field sample readings shall agree within 0.1 pH units or else they should be repeated.

3.0 CONDUCTIVITY OR SPECIFIC ELECTRICAL CONDUCTANCE (EC)

Electrical conductance, or conductivity, is the ability of a substance to conduct an electric current.

This procedure applies only to field measurements of conductivity in aqueous media. Measurements in nonaqueous media (e.g., oil) will not be accurate and may foul the electrodes.

This measurement is determined electrometrically using a conductivity meter with a pair of electrodes that are typically made of platinum.

Specific conductance, or conductivity (EC), is the ability of a substance to conduct an electric current. As such, it is the reciprocal of the resistance. The units of conductivity are reciprocal ohms, or mhos. Data are generally reported in micromhos per centimeter (µmhos/cm) at a temperature measured in degrees Celsius (°C).

Some values taken at other temperatures exist. At the time of field measurements, temperature must be determined and recorded. Field measurements can then be corrected for temperature effects.

The specific conductance of a groundwater sample is dependent upon the total dissolved solids (TDS) content of the sample. Typically, the ratio of TDS (measured in mg/L) to specific conductance (measured by mhos per cm) is between 0.6 and 0.8. Because the TDS concentration and specific conductance of a sample may be dependent upon hydrogen ion concentration, measurements of specific conductance should be accompanied by pH measurements.

Prior to field activity, check the conductivity meter for mechanical and electrical failures and/or weak batteries.

3.1. Equipment

A portable specific conductance meter shall be used. Known strength potassium chloride (KCl) solutions or other suitable solutions shall be used for standards. A polyethylene or Teflon beaker is practical for holding standards and samples for testing. A plastic squirt bottle of distilled water or de-ionized water is required for rinsing the electrodes. A box of Kimwipes is useful.

3.2. Initial Calibration Procedures

Perform an initial calibration every day against the potassium chloride using the following procedure.

1. Turn on and calibrate the instrument against known standards, usually potassium chloride (KCl). Refer to the standard documentation for temperature-to-conductance correspondence.
2. Rinse the electrode(s). The electrodes may be in a probe or contained in a cell. Squirting distilled or de-ionized water directly on the probe or into the cell from a plastic spray bottle works best.
3. Remove excess water before testing the standard solution. Rinse the probe in a beaker or cell with fresh standard three times. Refill the beaker or cell again. Swirl the probe or cell at a constant rate until the meter reading reaches equilibrium.
4. If necessary, perform any required adjustments to correlate reading value with expected value.
5. Record the EC value, in the field Logbook along with standard ID, date, instrument ID, and name of person making calibration.
6. Pour sample out of reading unit or withdraw probe from sample and prepare meter for next reading. Do not rinse probe or reading unit with distilled water in between readings.
7. Usually three separate readings of a single standard are made. The SAP should be consulted for number of standards and readings.

Having passed initial calibration, samples can now be analyzed using steps similar to those used in the initial calibration. The probe or cell should be rinsed three times between samples with the next sample solution. The probe or cell should be swirled while waiting for reading

stabilization. The EC should be recorded in field notebook along with sample ID, date, instrument ID, and name of person taking reading.

3.3. Continuing Calibration

At specific intervals based on time or number of samples, the conductivity meter should be recalibrated.

The procedure for continuing calibration is the same as for the initial calibration.

The instrument also should be recalibrated if there is a change of 5°C or greater between the sample temperature and the calibration temperature.

3.4. Final Calibration

After all samples have been measured, a final calibration should be made.

After the final calibration, turn meter off and rinse probe or cell with de-ionized water and replace the instrument in its carrier.

3.5. Calibration for only a few Samples

In some situations, only a single sample or a small number of samples need to be measured. In such cases, only an initial calibration and a final calibration need be performed.

3.6. Reporting Units

Readings shall be expressed in µmhos/cm corrected to 25°C, Results shall be reported to the nearest 10 units for readings under 1,000 µmhos/cm and the nearest 100 units for readings over 1,000 µmhos/cm. Duplicate field analyses shall agree within 10 percent or require recalibration.

4.0 TEMPERATURE

All field measurements of temperature in aqueous media should be carried out with a calibrated thermometer or thermistor.

Glass thermometers should be transported in a protective case to prevent breakage.

4.1. Equipment

A thermometer or thermistor is required for sample readings (temperature measurement probe). A temperature probe from a combination meter (i.e., pH, EC, temperature combination meter) may also be used. A beaker or other container is needed.

4.2. One-Time Calibration Procedure

Inspect the thermometer for cracks in the glass and spaces (breaks) in the mercury column.

At the field site, thoroughly rinse the temperature probe with distilled water. Prior to field activity remove excess water before immersion in sample.

Allow sample thermometers to equilibrate in a prepared sample, and check the readings against one another for calibration. Swirl the probe at a constant rate, and take the measurement when the mercury column or digital readout stabilizes.

The temperature should be recorded in field notebook, along with sample ID, date, instrument ID, and name of person taking reading. Note correction required, if any, in the field notebook.

This calibration activity need only be performed once per sampling event.

4.3. Reporting Limits

Results shall be expressed in either degrees Celsius (°C) or degrees Fahrenheit (°F) to the nearest 0.5 degree. Duplicate field analyses shall agree within 10 percent or be repeated.

5.0 OXIDATION REDUCTION POTENTIAL (ORP OR EH)

The ability of a natural environment to bring about an oxidation or reduction process is measured by a quantity called its redox potential, designated as Eh. Eh is a measure of the ability of an environment to supply electrons to an oxidizing agent or to take up electrons from a reducing agent. In any environmental system, the redox potential is a measure of the cumulative redox potentials of all the individual chemical oxidation-reduction reactions in the system.

The oxidation-reduction potential (Eh) of a solution is defined as the electro-motive force developed by an inert (noble metal) electrode immersed in the sample in reference to a standard hydrogen electrode, Because a standard hydrogen electrode is fragile and impractical for fieldwork, other reference electrodes are used. Correction to the standard hydrogen electrode potential values can be made.

It is not possible to calibrate Eh values over a range of redox potentials (as is done with pH electrodes). Instead, standard solutions that exhibit both chemical stability and known redox potentials for specific indicator electrodes are used to check electrode response at the temperature of the measurement.

In this procedure, the Eh of a solution is potentiometrically measured as a millivolt signal produced when a noble metal electrode, generally platinum, and a reference electrode (calomel, silver-silver chloride, or other constant potential) are placed in the sample. The electrodes are calibrated using standard redox solutions prior to use.

The Eh of an aqueous solution is sensitive to change in temperature, but a correction is rarely made due to its minimal effect.

The Eh of an aqueous solution is sensitive to hydrogen ion concentration (pH) changes when any chemical oxidation-reduction reaction in the system involves either hydrogen ions or hydroxyl ions.

A brightly polished noble metal electrode surface is required for accurate measurements. Any oil and grease coating of the noble metal electrode will cause erroneous readings.

Both exposure of standards and samples to the atmosphere should be minimized. Samples should be analyzed upon collection and should not be stored.

5.1. References

This procedure is based upon American Society of Testing Materials, Annual Book of ASTM Standards, Section 2, Standard Test Method for Oxidation-Reduction Potential of Water, ASTM D 1498-93, 1993.

A copy of ASTM D 1498-93 is appended to this attachment.

An alternate reference is American Public Health Association (APHA), American Water Works Association (A\JVVVA), Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, Method 2580 B (Oxidation-Reduction Potential Measurement in Clean Water), Section 2-60, 18th , Edition, 1992.

5.2. Equipment

A high-impedance millivolt (mV) meter (readable to 1 mV) is required along with a reference electrode; and an oxidation-reduction electrode. Such meters are often built into multipurpose instruments to serve multiple tasks.

Chemicals (American Chemical Society [ACS] reagent grade) required include cleaning agents used to clean the noble metal electrode (aqua regia, chromic acid, nitric acid, and detergent); reagents for buffer solutions; reagents for standards solutions; and reagents for electrode testing (dilute sodium hydroxide and dilute nitric acid). A balance, pipettes, and volumetric flasks will be required to prepare solutions.

Polyethylene or Teflon beakers are needed to hold standards and samples. A plastic squirt bottle of distilled water is required for rinsing the electrodes. A box of Kim-wipes is useful.

5.3. Standards

Ferric/ferrous and quinhydrone standards should be prepared as directed in the ASTM reference. The ferric/ferrous standard is stable for weeks if kept cool and not Exposed to light or air. The quinhydrone standard must be made up daily and should be made in separate buffers (one with pH 4 buffer solution, one with pH 7 buffer solution).

5.4. Calibration Procedure

Prior to field activity, condition and maintain Eh electrodes as recommended by the manufacturer. At the field site, wipe off the oxidation/reduction electrode with a Kim-wipe and calibrate in accordance with manufacturer's instructions.

Be sure to indicate calibration measurements, the temperature, and type of electrode system used in the field notebook.

Upon completion of the initial calibration, samples can be analyzed.

Thoroughly wash the electrodes with DIW and remove excess water.

Rinse the beaker three times with sample. Insert electrodes into the sampler while agitating the beaker.

Read mV potential and record measurement in field notebook. Withdraw probe from sample and rinse with distilled water. Store electrodes as described in the operating instructions for the meter and electrodes.

Thoroughly wash the electrodes with deionized water and remove excess water before immersion in the next sample.

5.5. Continuing Calibration

The electrode standardization may be checked periodically at two different pH values by measuring the Eh of the two redox reference quinhydrone solutions and comparing the values to those in Table 3 of the ASTM Standard D 1498-93.

5.6. Final Calibration

After all samples have been measured, a final one-point calibration reading should be made using the pH 7 quinhydrone solution.

5.7. Reporting Limits

Results shall be expressed in mV and shall be reported to the nearest 1 mV. In the absence of substances that coat or poison the electrode, the precision is approximately ± 10 mV.

6.0 DISSOLVED OXYGEN

Dissolved oxygen (DO) levels in natural and wastewaters depend on the physical, chemical and biochemical activities in the water body. The analysis for DO is a key test in water pollution and waste treatment process control.

There are two generally accepted methods for the analysis of DO in water: the Winkler, or iodometric method, and the electrometric method using membrane electrodes. The iodometric method with its variety of modifications is the most precise and reliable method for DO analysis cannot be adapted easily for continuous monitoring and is not suited for field testing.

This procedure therefore describes the membrane electrode probe method of DO measurement. Being completely submersible, membrane electrodes are suited for analysis in-situ.

The membrane electrode probe is composed of two solid metal electrodes in contact with supporting electrolyte and separated from the test solution by the membrane.

Dissolved organic materials are not known to interfere in the output from DO probes. However, dissolved inorganic salts are a factor in the performance of DO probes. Reactive gases which pass through the membrane electrode probes may interfere in the output from DO probes. For example, chlorine will depolarize the cathode, cause a high probe output, and eventually desensitize the probe.

Hydrogen sulfide will also interfere with membrane electrode probes under certain conditions. DO membrane electrode probes are temperature sensitive, and temperature compensation is normally provided by the manufacturer.

Polyethylene and fluorocarbon membranes are permeable to oxygen gas and are relatively rugged. They can be readily replaced on the probe.

The following is a general field measurement procedure for DO and will not apply to every DO meter that could be used. Please refer to the manufacturer instructions on calibration and operation for each specific meter.

6.1. References

This procedure is based upon APHA, AWVVA, WEF, Standard Methods for the Examination of Water and Wastewater, Method 4500-0 G (Membrane Electrode Method), Section 4-103, 18th Edition, 1992.

6.2. Equipment

An oxygen-sensitive membrane electrode with appropriate meter and other reagents/apparatus as specified in Standard Methods or by manufacturer's instructions.

6.3. Standards

DO instruments are usually calibrated at the "zero oxygen" point, and some other points extending to near the end of the calibration range. A two-point calibration is a minimum requirement. The zero oxygen point requires a standard containing no DO. The other point requires a standard that has been previously determined by the iodometric method. One point can be a measurement in air.

Zero oxygen point standards are usually prepared by adding excess (until some solid remains that will not dissolve) sodium sulfite and a trace of cobalt chloride to water (preferably the sample water). The container is capped and shaken. The sulfite reacts quickly (within a few minutes) with the DO.

Other standards can be solutions that have been previously determined iodometrically. Commercial standards are available. A reasonably good standard can be obtained by allowing the probe to come to equilibrium (but not dry out) in air. The nearly constant atmospheric oxygen concentration is converted to DO units.

6.4. Initial Calibration

Prior to field activity, inspect membrane for air bubbles, oily film and/or holes. If the membrane is defective, it must be replaced, and the new membrane must be soaked in distilled water before calibration.

Follow manufacturer's calibration procedure. It is usually best to start with a zero standard and alternate with the end of range standard until at least two sets of readings agree. The stirring apparatus must be operating.

Calibration in fresh water can be done in sample water or de-ionized water, whichever is more convenient. Sample water should not be used if pollutants or interfering substances are present.

Calibration in salt water or water having a constant salt concentration in excess of 1000 mg/L requires use of the sample water.

Calibration in varying salt concentrations (e.g.) requires compensation based upon chloride ion content, salinity or conductivity (see Reference).

After the initial two-point calibration, samples can be measured. Samples can be measured in the source or collected in the grab sample collection container.

Follow manufacturer's instructions for sample measurement. When making measurements, be sure that the membrane electrode stirring apparatus is working and adjust the temperature compensator. Record DO measurement in the field notebook.

Keep the probe in distilled water when it is not in use to prevent the membrane from drying out.

If the sample temperature is 5°C greater than the calibration temperature, the meter should be recalibrated to the temperature of the sample.

6.5. Continuing Calibration

One or two-point recalibration should be done frequently (at least every 10 samples or every 2 hours).

Change of membrane requires a new initial calibration.

6.6. Final Calibration

When all samples have been measured, a final reading of the end of range standard should be measured. No instrument adjustment is required.

6.7. Reporting Units

Results shall be expressed in milligrams (mg) of DO per liter (DO/L) and shall be reported to the nearest 0.1 mg DO/L. Accuracy is typically ±0.1 mg DO/L and precision is typically ±0.05 mg DO/L.

7.0 TURBIDITY

The clarity of water is a major determinant of its condition. Turbidity in water is caused by suspended matter, such as clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, plankton, and other microscopic organisms. Turbidity is an expression of the optical property that causes light to be scattered and absorbed, rather than transmitted in straight lines.

Turbidity in water is caused by the presence of suspended matter such as clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, plankton, and other microscopic organisms.

Measurements by turbidity instruments are given in terms of nephelometric turbidity units (NTU).

The measurement of turbidity can be affected by both the type of measuring instrument and by the nature of the suspension measured.

7.1. References

This procedure is based upon American Society of Testing Materials, Annual Book of ASTM Standards, Section 2, Standard Test Method for Turbidity of Water, ASTM D 1889-94, 1994.

A copy of ASTM D 1889-94 is appended to this attachment.

An alternate reference is APHA, A\NVVA, WEF, Standard Methods for the .Examination of Water and Wastewater, Method 2130 (Turbidity), Section 2-8, 18th Edition, 1992.

7.2. Equipment

ASTM D 1889-94 requires either a nephelometric or calibrated slit turbidity meter. Both instruments have ranges from 0.05 to 40 NTU. Higher sample turbidities can be measured following serial dilution of the sample to give readings in the applicable range.

Also required are sample tubes made of clear, colorless glass, which is kept extremely clean, and a grab sample collection container.

Rinsing and a zero standard require turbidity-free water. Turbidity-free water for measuring turbidity to as low as 0.02 NTU can be made by passing distilled water through a membrane filter having precision sized pores of 0.2 microns (Nucleopore Corporation, 7035 Commerce Circle, Pleasanton, CA or equivalent). Some commercial bottled demineralized or distilled waters can be used to prepare turbidity-free water.

Standards can be prepared or purchased from commercial organizations. All prepared standards (particularly low level standards) and some commercial standards have a short lifetime.

7.3. Commercial Standards

Most turbidity meters will come from the manufacturer with standards to compare and calibrate with. See manufacturers' instructions for proper procedure.

7.4. Continuing Calibration

Continuing calibration is not necessary unless a large number of samples (over 50) require measurement.

7.5. Final Calibration

When all samples have been measured, a final one-point calibration sample should be measured. No instrument adjustment is required.

7.6. Reporting Units

Results shall be reported in nephelometric turbidity units (NTU). Results shall be reported as follows:

Turbidity Range (NTU)	Report to Nearest NTU
0 – 1	0.05
1 – 10	0.1
10 – 40	1
40 – 100	5
100 – 400	10
400 – 1000	50
> 1000	100

ATTACHMENT C

Field Screening Instruments

1.0 INTRODUCTION

Field screening is an on-site test procedure that yields immediate results. These results can be used as the basis of surveys or for making field decisions. An example of field screening is the use of a flame ionization detector instrument to determine hot spots in piles of dirt contaminated by petroleum. Field screening also might be used to sample drum headspace to determine if the drums can be safely disposed. Another use is to measure well headspace to determine the appropriate method for well purging/sampling based on the level of oxygen in the well.

Field-screening measurements are usually semi-quantitative. The measurements may be used only briefly if they serve as a basis for a decision and have no further value after the decision is made.

A number of portable instruments are available for field-screening purposes.

Many of these instruments have other primary purposes (e.g., the detection of hazards as a health and safety issue).

Field-screening measurements do not usually require the full quality assurance/quality control (QA/QC) rigor of measurements reported to the client. Calibration requirements for an instrument used in field screening can often be relaxed in comparison to using of the instrument for primary purposes such as hazard assessment.

Wherever possible, this attachment will point to calibration procedures listed in other AM8AJV documents. These documents will contain the calibration procedures for the primary purpose of the instrument. Discussion will be aimed at any allowable relaxation of the primary purpose calibration procedures

This attachment describes calibration procedures for the following instruments:

1. flame ionization detector (FID);
2. gas combustion meter (lower-explosive limit [LEL] meter);
3. photoionization detector (PID); and
4. Draeger tubes.

2.0 REFERENCES

None.

3.0 FLAME IONIZATION DETECTOR (FID)

A FID samples air through a probe and passes it through a flame that breaks up molecules into ions, which are electronically detected.

This instrument detects everything except gases such as oxygen, nitrogen, water vapor, carbon monoxide, and carbon dioxide. Because of its detection range and high sensitivity, it is used wherever little is known about chemical makeup of the air sample. It is also used where few chemicals are present and a high sensitivity is required.

FIDs are frequently used to detect petroleum vapors because it is particularly sensitive to these compounds.

3.1. Calibration

Calibration of the FID can be performed using methane and isobutylene standards and then related to other chemicals through sensitivity factors. For screening work, this is seldom necessary.

A good FID calibration for field work is to zero the instrument well away from the sample area and then check for function by placing almost any kind of ink marker in front of the probe.

4.0 OXYGEN LEVEL – GAS COMBUSTION METER (O_2 – LEL)

Oxygen level-gas combustion meters are commonly used for health and safety purposes such as evaluating confined spaces. While such meters can be manufactured individually, it is much more common to find them included in an instrument capable of performing multiple tests. The oxygen-level meter reads in percent and the gas combustion meter usually reads in percent lower explosive level (LEL), but conversions can be made for particular chemicals.

For screening purposes, the oxygen-level meter is sometimes useful in testing well headspace. The gas combustion meter is useful in detecting flammable materials. As such, it is an excellent detector of hydrocarbons. It does not react to chemicals that will not burn, such as halocarbons. A FID-gas combustion meter combination can be used to determine whether a spill is a fuel (detected by both) or a solvent (only detected by the FID).

The oxygen level meter is calibrated at the factory and is usually returned annually for calibration. In ambient air, the oxygen level should read between 20.5 to 21.5 percent. A function check of the oxygen meter can be made by holding one's breath for a few seconds and slowly exhaling into the probe. Air exhaled in this manner usually has an oxygen level of 18 to 19 percent.

The gas combustion meter is usually calibrated on a single gas standard and seldom needs recalibration. A function test can be performed by exposing the meter probe to rubber cement, nail polish remover, or certain hydrocarbon solvent ink sticks. It will not respond to solvents (halocarbons).

5.0 PHOTOIONIZATION DETECTOR

The PID is very sensitive to chemical compounds that contain double or triple bonds, or aromatic substituents (benzene rings). This limitation, along with the requirement for volatility, allows PID sensitivity only to materials of environmental concern, such as benzene, toluene, ethylbenzene, xylenes (BTEX); chlorobenzene; styrene; other substituted benzenes; perchloroethylene (PCE); trichloroethylene; dichloroethylene; and vinyl chloride. It can be used to detect petroleum (but not as effectively as a FID) because petroleum contains small amounts of BTEX.

Calibration of the PID for screening purposes, the daily 100-ppm isobutylene standard check is usually not necessary. The instrument should be zeroed in an area away from the sample area. A small gasoline sample in a vial can serve as a function test.

6.0 DRAEGER TUBES

Draeger tubes contain a material that changes color when exposed to a specific chemical (or specific group of chemicals). Sample air is drawn through the tubes, and color moves up the tube in proportion to the amount of chemical in the sample. Usually 100 milliliters of air is drawn through the tube.

Draeger is a commonly used trade name. A number of companies manufacture similar tubes. Draeger tubes can be used to detect (semi-quantitatively) a variety of chemicals. They are almost always designed to detect a specific chemical or group of chemicals.

Draeger tubes are calibrated at time of manufacture and require no recalibration. The hand air pump sometimes leaks and can be checked to determine if it is pumping 100 milliliters per stroke.

1.0 SIGNATURE AUTHORITY

TITLE	NAME	SIGNATURE
Quality Control Manager	Yu Zeng	
Sr. Technical Manager	Rod Reeve	
Program Manager	Max Pan	

2.0 PURPOSE

This Accord Engineering, Inc. (AEI) Standard Operating Procedure (SOP) is applicable to the decontamination of field equipment that comes in contact with chemically contaminated or potentially contaminated materials. It is based upon guidance given in the references in Section 4.0. This SOP does not address radioactive contaminated equipment.

3.0 SCOPE

3.1. This SOP aims to prevent:

- cross contamination among environmental samples;
- risk to personnel or the environment caused by the spread of contaminants; and
- cross contamination by inaccurate decontamination of field equipment...

3.2. This SOP is general in nature. Any more stringent decontamination procedures described in site-specific Sampling and Analysis Plans (SAPs) or in Site Health and Safety Plan (SHSPs) take precedence over this SOP. .

3.3. This SOP is designed to be implemented on-site at or near the field equipment point-of-use or at the border of a contamination exclusion area. Except in emergency circumstances, transport of contaminated field equipment off-site is forbidden. In a similar manner, storage of contaminated field equipment that has not been decontaminated either on-site or off-site is not allowed.

Contamination of field equipment does not have to be proven in order for decontamination to be required. A reasonable possibility or potential for field equipment to be contaminated is sufficient requirement for decontamination. This procedure includes the minimum standards required for decontamination activities by subcontractors (Section 7.4, decontamination of drill rigs).

3.4. This procedure does not apply to field equipment that is intended for one-time use and dispose. Such equipment shall be containerized after use and kept containerized until disposal.

3.5. This procedure does not apply to personnel decontamination (body, personal protective equipment [PPE], or clothing).

4.0 REFERENCE MATERIALS

DOC. NO.	TITLE
NA	Glossary
SOP F10-002	Instrument Calibration and Use
SOP F10-006	Investigation-Derived Waste Management
SOP F20-003	Monitoring Well Design, Installation, and Development
SOP F20-004	Abandonment of Boreholes and Wells
SOP F30-001	Soil Sampling
SOP F30-002	Groundwater Sampling
SOP F40-001	Water and Free product Level Measurement in Well
U.S. EPA 1993	Preparation of a U.S. EPA Region IX Sample Plan for EPA-Lead Superfund Projects. San Francisco, California: Quality Assurance Management Section (QAMS), U.S. EPA Region IX.

5.0 DEFINITIONS

Decontamination *- The process of removing contamination from persons or objects.*

SHSR *- Site Health and Safety Representative; Person responsible for health and safety of personnel at the site.*

6.0 PROCEDURE

6.1. Preventing the Need for Decontamination

Whenever possible, field equipment should be transported or stored in containers that prevent contamination or wrapped in aluminum foil (shiny side out).

Polyethylene (PE) sheet material (Visqueen) can be used as a barrier between sources of contamination and field equipment. Note: PE can be a source of phthalates if semi-volatile analysis of rinsate is anticipated.

To minimize the potential for cross contamination, sampling activities should be planned to proceed from least contaminated locations to most contaminated locations.

"Disposable equipment" intended for one-time usedoes not have to be decontaminated following use, but shall be put into a suitable container and disposed of as investigation-derived waste (IDW).

6.2. Equipment and Materials for Field Equipment Decontamination

Prior to initiating field operations, the necessary decontamination equipment shall be acquired. The SAP shall identify the chemicals of concern and describe decontamination protocols. Typical equipment requirements may include:

- buckets or tubs to hold wash and rinse solutions;
- long-handled soft bristle brushes for scrubbing;
- nonphosphate detergent such as Alconox or Liqui-Nox;
- potable water supply or pump spray apparatus;
- Deionized (DI) Water, distilled, or American Society for Testing Materials (ASTM) Type II Water;
- nonreactive wash bottles for nitric acid solutionsand rinse water;
- towels or wipes;
- Department of Transportation (DOT) approved drums to hold waste decontamination solutions and equipment;
- visqueen for laydown in decontamination areas; and
- gloves, aprons, safety glasses, and any other PPE required in the SHSP.

A formal decontamination station may be required between a contaminated area and a contamination exclusion zone. For greatest efficiency, placement and use of such a station shall be coordinated with the sampling or other field activities.

6.3. Generic Decontamination Procedure

The four steps to decontamination of equipment are as follows:

- Remove Gross Contamination;
- Remove Residual Contamination;
- Prevent Recontamination; and
- Disposal of Contaminants.

6.3.1. Remove Gross Contamination

Gross contamination removal may be accomplished by steam or high-pressure hot water cleaning and/or vigorous brushing with a nonphosphate detergent or by soaking and brushing. The method chosen shall consider the type of equipment being decontaminated (e.g., drilling tools or electronic equipment) and the contaminating medium.

6.3.2. Remove Residual Contamination

Residual contamination removal consists of a formal set of steps based on the contaminants (present and suspected). Since the subject contaminants are often visible,

these steps must be meticulously applied to the entire surface area of each piece of equipment suspected of coming in contact with contamination.

The following generic procedure is recommended by the United States Environmental Protection Agency (U.S. EPA), Region IX for EPA-Lead Superfund Projects (U.S. EPA 1992). This constitutes a model method that may be modified for specific applications.

Liqui-Nox (or other nonphosphate-containing detergents) should be used when phosphate may be detrimental to the analysis. Alconox (or other phosphate-containing detergent) can be used if a stronger detergent action is required and phosphate will not impact target analytes. Liqui-Nox and Alconox (manufactured by Alconox, Inc.) have been used historically, but any similar detergents can be used.

Residual contamination removal steps are as follows:

- low or nonphosphate detergent wash (e.g., Alconox or Liqui-Nox solutions made up as directed by the manufacturer);
- potable water rinse;
- DI or distilled water rinse.

6.3.3. Prevent Recontamination After Decontamination

After decontamination, the equipment shall be treated in a manner that will protect it from further contamination to the extent practical. These procedures will vary considerably with the nature of the equipment and the specifics of the project. Protection measures include wrapping with oil-free aluminum foil or plastic and storing in zip-lock bags.

6.3.4. Disposal of Contaminants

Gross contamination and all washing and rinsing solutions must be considered to be IDW and managed as directed in AEI SOP F10-006. After use, gloves and other contaminated PPE must also be managed as IDW in accordance with the site specific IDW Plan.

7.0 SPECIFIC DECONTAMINATION PROCEDURES

7.1. Decontamination of Field Instruments

Field instruments such as organic vapor monitors and gas analyzers are typically not constructed to allow immersion or aggressive scrubbing. Care should be taken to minimize the exposure to solid or liquid contaminants. In environments with high potential for contamination, instruments may be operated in plastic bags, allowing only detector assemblies to be exposed. Manufacturer's instructions should be consulted, as well as AEI SOP F10-002. Probes of pH, temperature, and specific conductance meters should be thoroughly washed with deionized or distilled water, then rinsed with deionized water.

7.2. Decontamination of Soil and Sediment Sampling Equipment

Soil and sediment sampling equipment includes sample barrels, sleeves (i.e., tubes, liners), retainers, hand augers, trowels, spoons, corers, grab samplers, dredges, and any other objects that might come into contact with a soil or sediment sample in the course of its collection and handling. This equipment shall be decontaminated before each use and before departing the field. Scrubbing with nonphosphate detergent should be sufficient to remove soil deposits. The procedure detailed in Section 6.3.2 of this SOP should be followed for the chemicals of concern. Rinsing shall be thorough, since contaminants may not be visible. Decontaminated equipment shall be protected from recontamination by dust, spray, and airborne contaminants by aluminum foil and/or plastic wrap.

7.3. Decontamination of Groundwater Sampling Equipment

Groundwater sampling equipment, as specified in the SAP, includes bailers, well sounding tapes, water-level tapes, interface detectors, pumps, hoses, and wires introduced into wells, and any other objects that might come into contact with groundwater that might be sampled. Gross contamination is typically not a problem from the well unless viscous non aqueous-phase liquids (NAPLs) have accumulated. It is important to recognize that just a few drops of a NAPL could contaminate a well.

Care shall be taken on the ground surface to avoid introducing gross contaminants to wells. Tapes, hoses, and wires should not be permitted to line on the ground or on contaminated surfaces. If such items become contaminated by ground contact, they must be decontaminated prior to use.

Equipment may be protected by hose reels, plastic sheeting, or plastic tubs.

Appropriate rinses or wipes shall be conducted prior to inserting devices into wells and as they are moved between wells. Manufacturer's instructions shall be consulted for decontamination of pumps and interface probes.

7.4. Decontamination of Subcontractor Drilling Equipment

Drilling equipment decontamination shall be performed by the subcontractor, in accordance with the applicable SAP or SHSP.

Decontamination is required for equipment involved in drilling and/or sampling soil borings and monitoring wells. It is required for equipment on drilling rigs involved in developing, purging, sampling, or aquifer tests. It is also required for any other equipment (e.g., backhoes, rigs that drive points, orpenetrometer cones that might come into contact with contaminated media).

Decontamination is required for all rig components that touch or enter the ground. Decontamination may also be required to parts of the drill rig vehicle that become splattered with boring materials. Drill rig vehicle decontamination should be conducted on decontamination pads or in designated decontamination areas (typically a depression lined with visqueen) located close enough to the work site that contamination is not spread during the movement of the vehicle. Gross decontamination is removed at the work site prior to moving the vehicle to the decontamination pad.

Vehicles and downhole drilling equipment shall be decontaminated prior to moving onto the site, between each drilling location, and prior to leaving the site.

Decontamination shall consist of steam or high-pressure hot water wash, nonphosphate detergent, and a potable water rinse. Where the potential for cross contamination/transference exists, the SHSR shall approve all daily vehicle movement off-site after confirmation that the vehicle has been satisfactorily decontaminated.

The vehicle operator shall take steps to prevent contamination of the vehicle interiors. All equipment necessary for work shall be removed from the cab interior prior to start of work.

8.0 QUALITY CONTROL

The final rinse solution of equipment decontamination can be collected and analyzed. Such samples are referred to as rinsate samples. The number, frequency, and method of collection of rinsate samples will be described in the SAP.

9.0 DECONTAMINATION SAFETY AND HEALTH ASPECTS

Material Safety Data Sheets are required for all chemical decontamination agents (except water) brought on-site. Use of acids, solvents, etc., other than specified in this procedure requires the approval of the AEI Health and Safety Manager.

Requirements for PPE decontamination are established in the SHSP and enforced by the SHSR.

AEI personnel shall not operate subcontractor decontamination equipment unless that equipment is provided specifically for their use and personnel have been trained in the use of that equipment.

10.0 DOCUMENTATION

Decontamination of field equipment, including drilling equipment, shall be documented in a field logbook. Typical decontamination of field equipment can be documented with a single entry. All deviations and reasons for deviations from normal decontamination procedures shall be noted and initialed in the field logbook.

11.0 REVISION HISTORY

REVISION	SECTION/FORM	REVISION DESCRIPTION	DATE
-	-	Initial Release	

1.0 SIGNATURE AUTHORITY

TITLE	NAME	SIGNATURE
Quality Control Manager	Yu Zeng	
Sr. Technical Manager	Rod Reeve	
Program Manager	Max Pan	

2.0 PURPOSE

This Accord Engineering, Inc. (AEI) standard operating procedure (SOP) is to provide a standardized method for the design, installation, and development of a vertical monitoring well intended to serve as access to a specific hydrogeologic unit for the measurement of water levels, free product and/or the collection of groundwater samples.

3.0 SCOPE

This SOP is intended for use by geologists/engineers for general guidance in the design, construction, and development of monitoring wells to be installed during site investigations. This SOP does not include borehole drilling and logging procedures, design of a monitoring well network, or well construction details that may be necessitated by site- specific conditions.

4.0 REFERENCE MATERIALS

DOC. NO.	TITLE
NA	Glossary
SOP F10-003	Decontamination of Equipment
Aller, et al. 1989.	Aller, L., T.W. Bennet, G. Hacket, R.J. Petty, J.H. Lehr, H. Sedoris, D.M. Nielsen, and J.E. Denne. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells. Dublin, OH: National Water Well Association RC-EPA/600/4-89/034.
Cal- EPA 1994	Cal- EPA, DTSC. Monitoring Well Design and Construction for Hydrogeologic Characterization: Guidance Manual for Ground Water Investigations. Interim Final.
Driscoll, F .G. 1989	Groundwater and Wells. St. Paul, MN: Johnson Division.
Fetter, C. W. 1988	Applied Hydrogeology. Second Edition. New York, NY. Macmillan Publishing Co.
CDWR 1991	California Department of Water Resources (CDWR). Standards, Bulletin 74-90. June.

DOC. NO.	TITLE
CDWR 1981	California Department of Water Resources (CDWR). Water Well Standards, Bulletin 74-81.
NA	American Society for Testing and Materials. 1990. Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers. October.

5.0 DEFINITIONS

Annular space: Annulus - the space between well casing and the borehole wall.

Aquitard - A fine-grained geologic unit of relatively low permeability material that is stratigraphically adjacent to one or more aquifers or water-bearing zones.

Bailer - A pipe with a check valve at the bottom used to collect groundwater from a well.

Bridge - An obstruction within the annulus of a well that may hinder proper emplacement of the filter pack and annular sealing materials.

Casing – A series of pipes connected by joints that can be fitted together and used either temporarily or permanently to advance a borehole, counteract caving, isolate a zone to be monitored, provide a conduit to the well screen interval, or a combination thereof.

Protective cap - Is placed over the top of well casing to prevent damage and unauthorized entry.

Surface casing - Is used to stabilize a borehole near the surface during drilling.

Conductor casing - Generally refers to casing used to stabilize a section of the borehole and/or to isolate a contaminated zone from the zone to be monitored.

Centralizer - A device used to keep casing centered inside a borehole or another casing.

Confined aquifer - A subsurface water-bearing zone that is overlain and underlain by relatively impermeable, fine-grained geologic units that restrain the vertical movement of groundwater.

Drill cuttings - Soil or rock fragments that are expelled from a borehole during the drilling process.

Hydrogeologic - Of or pertaining to the study of water contained within the pore spaces and/or fractures of soil or rock.

Non-aqueous phase liquid (NAPL) - A liquid phase that has a density greater than or less than water. Chlorinated solvents (e.g., trichloroethylene, vinyl chloride) are examples of dense NAPLs (DNAPLs) that sink in water; gasoline and other fuel hydrocarbons are examples of light NAPLs (LNAPLs) that float on water.

Potentiometric surface - The level to which water rises in a unconfined aquifer.

Riser casing - Refers to the blank well casing that extends from the ground surface to the top of the target zone, where it is connected to the well screen.

Sump - Section of blank casing located beneath the screened interval in a well that is fitted with a bottom cap and serves to collect sediment or DNAPLs that enter the well screen; also called a sediment trap or well cellar.

Surge block - A well development tool that is operated like a plunger in a well casing to force water to flow into and out of the well screen.

Tremie - The process of using a pipe or rigid tube to emplace filter pack and annular seal materials at the appropriate intervals within the annulus of a well.

Unconfined aquifer - A water-bearing zone subject to atmospheric pressure where the water table is free to rise and fall.

Water table - The surface of an unconfined aquifer.

Well cluster - Two or more individual wells constructed at a given location where each is open to different water-bearing zones in the subsurface.

Well nest - A well in which several casings are installed in a single borehole; each is screened to monitor a different water-bearing zone in the subsurface.

Well screen - A filtering device that serves as the intake portion of a well installation. See Glossary of Terms and Definitions.

6.0 PROCEDURE

Monitoring well design, installation, and development are addressed by this SOP as described below.

6.1. Well Permitting

Well installation permits are usually required by one or more local, regional, and/or state regulatory agencies. Permits from the lead regulatory agency (LEA) may also be required for boreholes that are advanced below the water table using conventional drilling techniques, a direct-push sampling rig and for the destruction (abandonment) of existing wells.

The designated LEA overseeing well installation/destruction activities is typically the county department of health and environmental services, a state agency (e.g., the California Department of Water Resources, the California Regional Water Quality Control Board, or the California Environmental Protection Agency [Cal-EPA] Department of Toxic Substances Control [DTSC]). A site may also be subject to federal or regional EPA guidelines. City permits may be required if the site is located within the city limits or on land owned by a municipality. Permission must be obtained from property owners if a proposed well location is on and/or accessed by private property.

The geologist/engineer is responsible for identifying the proper well installation-permitting agency (or agencies) and for obtaining the required permits.

A completed well permit application typically includes a completed application form that is signed by a registered geologist, a site location map, a map of proposed well locations, a schematic diagram illustrating proposed well dimensions and construction materials, and a

check or money order for any required fees (Department of Defense [DOD] sites may be exempt from the fees but typically permits are still required).

The well location map submitted with a permit application may show the proposed well location(s) in terms of local landmarks in urbanized areas (e.g., 150 feet north of the intersection of Palm Drive and Imperial Road in center median) in terms of the Township and Range System (e.g., 2, 100 feet north of the south line of Section 26 and 1,460 feet west of the east line of Section 26), or northing and eastings in State Plane coordinates.

6.2. Well Design

The purpose of a monitoring well is to provide access to groundwater within a specific (target) water-bearing zone in order to evaluate its hydrogeologic properties and/or to collect representative groundwater samples for measurement of its physical characteristics (e.g., temperature, pH, electrical conductivity, turbidity, dissolved oxygen) and analysis of its chemical constituents.

Preparation of the well design entails specifying the dimensions of the borehole in which the well will be installed and the type and dimensions of well construction materials, and considering site-specific needs and conditions. The drilling method proposed to advance the borehole and the well construction materials emplaced should minimize, to the extent possible, disturbance to the adjoining geologic formation and/or alteration of the groundwater physical and chemical properties.

A primary objective of drilling and well installation procedures is to maintain the integrity of fine-grained geologic units (i.e., aquitards) that separate water- bearing units such that the mixing of groundwater of differing quality and/or the transfer of groundwater contamination from one water-bearing zone to another.

When subsurface conditions indicate that several aquifers are to be monitored at a given location, design of a well cluster or nest is appropriate. Installation of a well cluster is preferable to installing a well nest except under extraordinary circumstances where the water-bearing zones to be monitored are unusually deep and drilling costs are prohibitively expensive.

6.2.1. Borehole Specifications

Specifications for the dimensions of the borehole in which the proposed well is to be installed are prepared in accordance with the following criteria:

- the diameter allows a minimum of 2.5 inches and a maximum of 5 inches between the well casing and the borehole wall (annular space) to accommodate filter pack and annular seal materials (Cal- EPA 1994), and
- the total depth is within a few feet below the bottom of the proposed screened interval.

If a borehole is advanced more than a few feet below the proposed screened depth, the excess portion of the borehole is to be sealed with bentonite or a bentonite/cement grout prior to well construction. If a hollow-stem auger rig is being used to install the well, this seal shall be placed through the auger assembly to avoid sealing the target

zone; otherwise, this seal shall be emplaced using a tremie pipe. Placement of the seal is necessary to restrict potential vertical migration of groundwater from the target zone to greater depths.

As the borehole is advanced through the target zone, samples of formation material should be collected for subsequent particle-size analyses. These analyses are performed to establish filter pack and screen slot-size specifications for a proposed well.

If the mud rotary method is used to advance the borehole, it is necessary to clean the borehole by circulating potable water prior to well installation.

6.2.2. Specifications for Well Construction Materials

Design of a groundwater monitoring well entails specification of the type, quantity, and, if applicable, dimensions, of well construction materials, especially with regards the depth to and length of the interval to be monitored. Well construction materials generally include well casing and screen, a sump (optional), top and bottom caps for the casing assembly, a filter pack, annular sealing materials, and surface completion components.

6.2.2.1. Well Casing and Screen

The selection of well casing and screen materials requires consideration of the proposed use(s) of the well;

√ as a piezometer, installed primarily for measurement of water levels;

√ as a monitoring well, for both measurement of water levels and collection of groundwater samples;

√ as an observation well, for aquifer testing purposes; or

√ as a monitoring well for subsequent conversion to extraction well.

The following conditions influence each of the factors above;

√ the geologic environment;

√ the geochemistry of uncontaminated or contaminated formation materials and groundwater;

√ the types and concentrations of suspected contaminants; the proposed well depth; and

√ the anticipated design life of the well.

Well casing and screen type are specified according to the manner in which the joints of casing and screen are connected. Flush-jointed, threaded connections are recommended to avoid the use of adhesive chemicals or glue (polyvinyl chloride [PVC] casing), or welding (steel casing), or the use of screws or pins and to provide a watertight seal. The joints are commonly specified in

2.5-, 5-, 10-, or 20-foot lengths. Other lengths may be required depending on site- specific conditions and objectives.

Well Casing

Blank well riser casing extends vertically downward from the ground surface to the top of the target zone, where it is connected to the well screen. Acceptable casing and screen composition for monitoring well construction includes thermoplastic (e.g., PVC); fluoropolymer (e.g., Teflon); carbon, low-carbon, or stainless steel material (Cal-EPA 1994). Other casing materials, such as fiberglass, are available for use in specialized applications, especially where there are concerns about long-term compatibility with groundwater or contaminant chemistry.

PVC is widely used as material for monitoring well casing for most applications. Stainless steel is used in hydrogeologic environments characterized by harsh physical or chemical conditions, or where long-term use (20 years or more) is anticipated. Hybrid wells may be constructed using more than one type of material (e.g., PVG riser casing with a wire-wound, stainless steel screen).

PVC riser casing is commonly specified as either Schedule 40 or 80 for the construction of monitoring wells. The wall thickness of Schedule 40 PVC casing is less than that of Schedule 80, and is generally used for constructing shallow wells to depths of 150 to 200 feet below the ground surface. At greater depths, the integrity of a well cased with Schedule 40 PVC casing could be compromised due to increased pressures and from the grout 'heat of hydration." Schedule 80 PVC casing is generally used for deeper well installations because it has greater strength due to a greater wall thickness. However, the inside diameter of Schedule 80 casing is less than that of Schedule 40. This must be taken into consideration when specifying sizes of pumps or other equipment that will subsequently be lowered into the well for monitoring and/or sampling.

Nominal monitoring well casing diameters for groundwater monitoring wells are typically specified as 2, 4, or 6 inches. Borings are generally required to allow from 2.5 to 5 inches of annular space between the well casing and the borehole wall to accommodate at least 2 inches of filter pack material around the well screen and 2 inches of grout around the riser casing. Wells constructed with 2- inch-diameter casing are generally used as piezometers for measuring groundwater levels. Wells intended for routine sampling and/or aquifer testing are generally constructed with casing diameters of 4 to 6 inches to allow greater flexibility in the selection of submersible pumps, bailers, and other down-hole equipment and instrumentation.

Well casing materials also include bottom caps, sumps (optional), centralizers, and top caps. A bottom cap and a sump are attached to the base of the well

screen for settlement and collection of any fine-grained formation materials that might pass through the well screen and/or DNAPLs. Threaded bottom caps, typically 6 inches long, are to be attached to the bottom of the well screen or sump. Centralizers, generally used at the top and bottom of well screens and every 40 to 50 feet along the length of the well casing to keep it centered in the borehole, are typically made of stainless steel regardless of the type of casing material. (Note: Wells installed using a hollow-stem auger rig do not require centralizers). Top caps are available as slip-on or threaded PVC or steel.

Well Screen

Well screen, constructed of one of the above well casing materials, allows groundwater of low turbidity from the target zone to flow into the well. A well screen (typically PVC or stainless steel) is required for wells completed in unconsolidated formations, but may not be necessary for wells completed in rock formations, where a stable, open-hole condition, may be maintained.

In addition to the type of material used, well screen specifications also specify the depth to and length of the screened interval. For wells installed to monitor unconfined aquifers, design of the screen length should take into consideration the anticipated range of water levels due to seasonal or tidal variation, or variation in the thickness of LNAPL, if present. In most cases, the top of the well screen should not extend beyond the top of the groundwater table (into the vadose zone) unless designed specifically to monitor for floating product (LNAPL). The screen length for a well monitoring LNAPL is determined based on site-specific hydrogeologic conditions, with typically, 5 to 7 feet of screen installed above the groundwater/LNAPL interface.

The screen length for a well installed to monitor the potentiometric surface of a confined aquifer should be the minimum necessary to satisfy site-specific objectives and should not extend above the base of the upper confining layer. At locations where sinking product, or DNAPLs, such as chlorinated hydrocarbons have been released to groundwater, the well screen is installed at the base of the aquifer or water-bearing zone where vertical migration of DNAPLs may be impeded by the presence of a lower confining layer. The well screen length is typically 5 to 10 feet under these conditions.

The size of openings or slots is also specified for a design of a well screen. For PVC screen, the types to be used for monitoring well installation are those with machine-cut slots that are cut transverse to the axis of the casing, or those designated as continuous slot. Machine-cut PVC screen is commonly specified because of its low cost. Continuous-slot screen is also frequently used because it provides a significantly greater area open to the formation. However, continuous slot screen has less strength than machine-cut PVC.

Stainless steel, wire-wound well screen may be used with a PVC or stainless steel riser casing.

Well screen slots are generally available in standard sizes of 0.010 to 0.050 inches. The size of the well screen openings is generally specified to hold back 85 to 100 percent of the filter pack materials" Methods for determining the appropriate slot size for screens is discussed in Driscoll (1989).

6.2.2.2. Filter Pack

A filter pack composed of chemically inert, quartz sand (or pea gravel for gravel aquifers) is placed in the annular space around the well screen to restrict fine- grained materials from entering the well. The filter pack is emplaced from the bottom of the borehole to a level approximately 2 feet above the top of the well screen in wells less than 200 feet deep. If the well depth is greater than 200 feet, the filter pack may extend up to 5 feet above the top of the well screen (Cal- EPA 1994) to compensate for any compression of filter pack materials by a correspondingly greater volume of overlying transition and annular sealing material. At least 2 inches of filter pack material is emplaced between the well screen and the borehole wall (Cal-EPA 1994, Aller et al. 1989).

A filter pack ratio, based on the results of particle size analyses, is used to specify the size differential between formation and filter pack materials. This ratio is generally the 50- or 70-percent-retained size during the particle-size analysis (Cal-EPA 1994). Methods for determining the appropriate filter pack gradations are presented in Driscoll (1989) and Aller et al. (1989).

A layer of chemically inert, fine sand may be placed over the filter pack prior to installation of the transition seal as a further precaution against invasion of annular sealing materials into the filter pack.

6.2.2.3. Transition Seal

A transition (bentonite) seal, composed of a 2- to 5-foot-thick layer of pre-hydrated bentonite pellets or chips, or bentonite slurry, is emplaced on top of the filter pack. Proper pre-hydration of the pellets or chips entails the addition of approximately 2 to 5 gallons of deionized water per 50-pound bucket of bentonite pellets or chips. Bentonite slurry is mixed at the ground surface and, generally, is composed of approximately 15 pounds of dry bentonite powder to 7 gallons of water.

6.2.2.4. Grout Seal

A grout seal composed of a neat cement, cement/bentonite grout, or bentonite slurry, is emplaced over the bentonite seal, generally to within a few feet of the ground surface. A common neat cement mixture is composed of 5 to 6 gallons of potable water per 94-pound sack of cement. An appropriate

cement/bentonite grout mixture is composed of approximately 2 to 4 percent pre-hydrated bentonite and 7 to 9 gallons of potable water for each 94-pound sack of Type I Portland cement (Cal-EPA 1994). Bentonite slurry is mixed in the proportions stated in Section 6.2.2.3. The integrity of the confining layer can be maintained by placing the annular seal at least 5 feet below the top of the confining layer or, preferably, adjacent to the entire confining interval.

6.2.2.5. Surface Completion

A surface completion is placed over the top of the well riser casing to provide structural protection and restrict unauthorized access to the well.

An aboveground surface completion typically consists of a protective, steel casing (or standpipe) with a locking steel cap that is set over the riser casing stick-up (i.e., the portion above the ground surface). The protective casing is fixed into a cement pad at the ground surface that slopes away from the riser casing. An aboveground surface completion may be surrounded by guard posts as a further measure of protecting the wellhead. Due to improved wellhead protection, security, and visibility, aboveground surface completions are preferred for wells installed in off-road areas.

A below ground completion features a metal, traffic-rated vault cemented into place with a steel plate at the ground surface that allows the unimpeded flow of vehicular traffic and provides access to the well. The well surface completion may have a locking lid or the enclosed well casing may be secured with a locking well cap.

6.3. Well Installation Procedures

6.3.1. Pre-installation Activities

Well construction materials should be inspected in the field upon delivery to verify that those received complies with specifications for types and dimensions, and that sufficient quantities are present. Well screen and casing joints should be measured for length and checked for uniformity. Measurement of the length of well assembly components will serve as a check on the total installed depth of the well and on the proper placement of the well screen.

Materials should also be inspected to evaluate the need for decontamination prior to well construction. Well casing that is sealed in plastic before being shipped in cardboard boxes may not require decontamination prior to installation, but wrapped stainless steel casing and screen may have polishing grit on surfaces that require cleaning. Casing that has been exposed to the elements at any time before well installation should also be decontaminated prior to use.

Well construction materials should always be stored on, and covered by, plastic sheeting to protect them from the elements. It is recommended that these materials not be stored directly on the ground surface. Samples of well construction materials

may be archived for future reference. As a minimum, the manufacturer and material specifications listed on the shipping packages should be recorded.

6.3.2. Well Screen and Casing Assembly

The screen and casing assembly is performed in accordance with manufacturer instructions for tightening joints while taking precautions to prevent contamination of the well construction materials.

The bottom cap and sump (optional) are first attached to the bottom joint of the screen. Additional joints of screen are then added to form the screen assembly, which is typically no greater than 20 feet in length. After the screen assembly is completed, centralizers are placed near its top and base. The assembly is then attached to a winch, hoisted over the top of the borehole, and lowered into the borehole.

The screen assembly is held at the top of the borehole while a connection is made with the first joint of well riser casing. The well casing is assembled and lowered into the borehole one joint at a time. Centralizers are generally added to the casing string every 40 to 50 feet. After the screen and casing assembly has been lowered to the desired depth, the entire assembly is suspended by the winch until the filter pack, transition seal, and grout seal are emplaced.

6.3.3. Addition of Filter Pack

The filter pack is typically added to the annular space to a level that is at least 2 to 3 feet above the top of the well screen casing. Coarse sand or gravel filter pack materials are generally poured into the annulus and allowed to settle. When pouring filter pack materials into the annulus, it is important to minimize segregation of particles by size. If finer material (i.e., fine to medium-grained sand) comprises the filter pack, it can be mixed with fresh water and pumped through a tremie pipe for placement into the annulus. If fresh water is used in this manner, the source and volume of water should be recorded.

Measurement of the depth of the top of the filter pack is made by the drilling subcontractor as placement proceeds to check for bridging that might occur and to gauge the proper increments for withdrawing temporary conductor casing or auger flights. The actual amount of filter pack used should be compared to the calculated annular space volume based on the well design, keeping in mind that washouts, caving, and swelling clay zones can cause the actual volume to differ significantly.

The well is surged after emplacement of the filter pack. If settlement occurs during surging prior to emplacement, filter pack material should be added to the well annulus and surged until it meets design specifications.

Following final surging and measurement of the depth to the top of the filter pack, a 1-foot-thick layer of chemically inert, fine sand, as discussed in Section 6.2.2.2, may then be emplaced in the annulus using a tremie pipe.

6.3.4. Emplacement of the Transition Seal

For wells less than approximately 30 feet deep, the transition (bentonite) seal material (preferably as prehydrated pellets or chips [Section 6.2.2.3]) may be poured directly down the annulus and tamped into place to prevent bridging. Alternatively, for wells of any depth, bentonite slurry may be prepared (Section 6.2.2.3) and emplaced as the transition seal.

6.3.5. Emplacement of the Grout Seal

Using a tremie pipe, the remaining annular space above the transition seal is filled with either neat cement, bentonite, a cement/bentonite grout, or a bentonite slurry in one continuous operation to within 4 feet (or less) below the ground surface (CDWR 1991). The depth of the top of the grout seal depends on whether the well design specifies an aboveground or below ground surface completion (Section 6.3.6).

During placement of the grout seal, the end of the tremie pipe initially should be placed approximately 5 feet above the top of the transition seal and should remain submerged at least 20 feet while grouting. For wells installed to depths of greater than approximately 300 feet, a different mode of grout seal emplacement may be necessary to prevent potential failure of the grout and invasion of the well screen. Alternative methods of grout seal emplacement are discussed in Driscoll (1989).

6.3.6. Surface Completion

The surface completion is constructed above- or belowground in accordance with the well design. For an aboveground surface completion, the grout seal terminates at the ground surface. The protective casing is placed over the riser casing into the grout seal. After the grout seal has set up, a concrete pad is constructed around the protective casing that slopes away from the well. For a below ground completion, the traffic vault is placed from the top of the grout seal to at least the ground surface (CDWR 1991) to enclose the top of the riser casing (some localities may require the traffic vault to be slightly elevated above ground surface to prevent surface water ponding above the vault). The vault is then cemented into place.

The well identification number is usually scribed or written in indelible ink on the well cap or at the top of the well riser casing, and on the surface casing, if possible. The top of the riser casing should be even {i.e. not ragged). A saw- cut notch is cut into the north side of the top of the well riser casing to serve as a reference point for surveying and water-level gauging. The well vault or protective casing shall be secured with a lock to prevent unauthorized entry.

6.4. Well Development Procedures

Well development is a process aimed at repairing damage done to the water- bearing formation by drilling and to enhance the hydraulic properties of the formation near the borehole so that water flows more freely into the well. Development should stress both the filter pack and the formation sufficiently to enhance hydraulic exchange without damaging either. Well

development breaks down and reduces borehole wall accumulations of bentonite drilling fluids; it also draws in and removes the fine particles from the filter pack and formation that can obstruct the free passage of water, damage pumps, or result in the accumulation of silt in a well.

A variety of well development procedures are commonly used including bailing, pumping, surging, hydraulic jetting, and air lifting. Selection of anyone procedure, or a combination of procedures, depends on well design (especially casing and well volumes), formation properties, the drilling method used, well construction methods, and well discharge handling capability.

Development may also be performed in stages using several different techniques. Initially, a sand bailer may be used to remove accumulated sediment from the bottom of the well. This also draws formation water into the well, resulting in agitation and surging, which loosens fine particles. If the borehole was drilled with mud as the circulatory fluid, the mud may be removed using a bailer, or it may be displaced or thinned by circulating potable water, prior to well development. In most situations, water should not be added to the well during development in order to maintain the integrity of the well for water quality sampling (Fetter 1988).

After most of the sediment or bentonite drilling fluid is removed, the well can be further developed by a combination of surging and pumping techniques. Bailers and/or submersible pumps are commonly used in such a way to further loosen fine particles by surging and agitation. A bailer achieves this by oscillating well water, while a pump serves this purpose by overpumping and backflow surging. Surge blocks are specialized tools used for repeated surging and agitating and must be followed by bailing or pumping. For environmental or hazardous waste investigations, sediment and development water removed from the well must be contained for proper handling and subsequent disposal.

The progress of development in monitoring wells is typically evaluated qualitatively by observing water clarity. Quantitatively, it is monitored by measuring the volume of water removed and the sand content of the water (turbidity).

Wells are commonly judged to be properly developed when the water discharged from the well is clear and free of sediment. However, meeting this criterion may be impractical from a cost and schedule standpoint. It is therefore recommended that the water quality parameters temperature, pH, electrical conductivity, and dissolved oxygen be measured to aid in deciding when development duration has been sufficient. Development is frequently limited to 4 to 8 hours or the removal of 5 to 10 casing or well volumes.

6.5. Decontamination, Handling of Waste Materials, and Site Cleanup Procedures

Well installation and development procedures may generate large volumes of waste materials, particularly drill cuttings, development water, drilling mud (if mud rotary techniques are used), as well as used personal protective equipment (PPE). Site cleanliness and conformance with decontamination guidelines are necessary to reduce the risk of cross contamination and human exposure to potentially hazardous materials.

6.5.1. Decontamination of Equipment

Equipment and materials to be used in the installation of monitoring wells must be thoroughly cleaned as specified in SOP F10-003, Decontamination of Equipment, prior to starting work to remove contamination that may have been acquired in transit to the site, by exposure to the elements or exposure to on-site contaminants. Similarly, equipment used to install a well must be cleaned before starting work on a subsequent well installation to reduce transfer of contaminants from one borehole to another.

6.5.2. Handling of Waste Materials

Waste materials, including drill cuttings, development water, drilling mud (if applicable), and PPE that are generated during the installation of a well may be contaminated and must be properly contained and labeled for storage, handling, and disposal. Procedures to be followed for handling waste materials are presented in each site-specific plan for management of investigation-derived wastes (IDW).

6.5.3. Work Site Cleanup

The drilling location shall be kept as neat and clean as possible during field operations and, following the completion of work, shall be returned to its original condition. This includes mending or replacing fences, pavement, vegetation, structures, and utilities, and removing surplus materials. Stockpiled wastes shall also be removed unless other arrangements have been made.

6.6. Record-Keeping Procedures

Accurate recordkeeping by the geologist/engineer is critically important from both a technical and legal perspective. The geologist/engineer shall be responsible for preparing a daily field log, reviewing and approving the driller's daily drilling report, and recording well construction details on Well Construction Details/logs: Well development information and measurements shall be recorded on Well Development Form.

Each entry onto the field forms shall be legibly recorded in black indelible ink such that each form is reproducible. A line shall be made through any entry made in error. The incorrect entry should be initialed and dated. The original field forms shall be submitted as part of a project hardbound field notebook. Copies of the field forms shall be distributed to the project manager and to the geologist/ engineer that originally completed the field forms.

6.6.1. Driller Records

The driller shall keep a daily drilling report (a quantity verification sheet) that records, at a minimum, the subcontract number; project number; name of the site; the monitoring well identification number; the names and titles of subcontract drilling personnel performing the work; delivery order pay item numbers and the services and/or equipment and supplies provided under the pay item; and the quantities associated with the pay item number (e.g., duration of service or equipment use in hours or days, footage, mileage). If a service, piece of equipment, or a supply is not included in the

subcontract line item price, a Field Change Notice must be prepared by the geologist/engineer to initiate revision of the delivery order.

The geologist/engineer shall sign each drilling report on the day of generation to indicate concurrence with the pay item numbers arid quantities recorded by the driller. The drilling report is then used by the drilling subcontractor as the basis for invoicing the work.

6.6.2. Daily Field Log

The geologist/engineer shall keep a daily field log in the hardbound field notebook to document the nature and timing of activities performed, the names of personnel on-site, and any other pertinent information (e.g., a separate tally of the types and quantities of construction materials used for each well installed, the nature of any interactions with base personnel, weather conditions).

6.6.3. Well Construction Diagram

The geologist/engineer shall record well construction details on Well Construction Details/log. Critical information to be recorded for each well includes measurements of the lengths of the well screen and casing, the depths to the bottom of the hole and to the top of the filter pack land transition seals, and the types of materials used. These details must be accurate as they form the basis for subsequent well design, development, and monitoring activities. The well construction graphics shall be used to sketch the well completion, and shall also be used when the attachments are converted to an electronic format.

6.6.4. Well Development Record

The geologist/engineer shall record the nature and timing of development activities including: techniques used; duration; volumes of water discharged from the well; and turbidity measurements. The recommended measurements of pH, temperature, electrical conductivity, turbidity, and dissolved oxygen may also be recorded on the Well Development Form.

6.6.5. Deliverables to the Well Permitting Agency

The geologist/engineer is responsible for submitting well documentation specified in the well permit to the permitting agency within the time frame stated on the permit. Prior to submitting this documentation, it shall be provided to the registered geologist or engineer that signed the well permit application for his/her review.

6.7. Field Form Checking

The project manager will assign a geologist/engineer who is not involved in the site-specific fieldwork to check the completed field forms for technical adequacy and conformance to this SOP. Any subsequent editing of the completed field forms shall be done on copies. The editor shall sign the log copy and indicate the date of any edits made.

7.0 ATTACHMENTS

A Well Construction Details/Log: Aboveground Surface Completion

B Well Construction Details/Log: Belowground Surface Completion

C Well Construction Graphics

D Well Development Form

8.0 REVISION HISTORY

REVISION	SECTION/FORM	REVISION DESCRIPTION	DATE
-	-	Initial Release	

ATTACHMENT A

Well Construction Details/Log: Aboveground Surface Completion

Well Construction Details/Log: Aboveground Surface Completion

WELL CONSTRUCTION DETAILS	PROJECT and JOB NUMBER		HOLE NO. SHEET NO. 1 OF 1	
	SITE and LOCATION		HOLE SIZE	BEGUN
DRILLER / DRILLING METHOD	COORDINATES	LOGGED BY:	TD OF WELL	COMPLETED
ELEV.: TOP of RISER CASING / GROUND /	GROUND WATER DEPTH / ELEVATION ▼ /	CHECKED BY:	TD of HOLE	UPDATE

(Template: AWELL)

Well Construction Details	Depth in Feet	Well Graphics	Elevation in Feet	Graphics	Geologic Description and Classification
SURFACE COMPLETION Dia. & Type: Bottom Depth = ___.__ft. CONDUCTOR CASING Dia. & Type: Bottom Depth = ___.__ft. GROUT SEAL Type: RISER CASING Dia. & Type: CENTRALIZERS (above screen) Depths = ___.__, ___.__ft. BENTONITE SEAL Top of Seal = ___.__ft. Type: FILTER PACK Top of Filter Pack = ___.__ft. Type: SCREEN Top of Screen = ___.__ft. Dia. & Type: Slot Size & Type: Bottom of Screen = ___.__ft. CENTRALIZER (below screen) Depth = ___.__ft. SUMP Dia. & Type: Bottom of Sump = ___.__ft.					

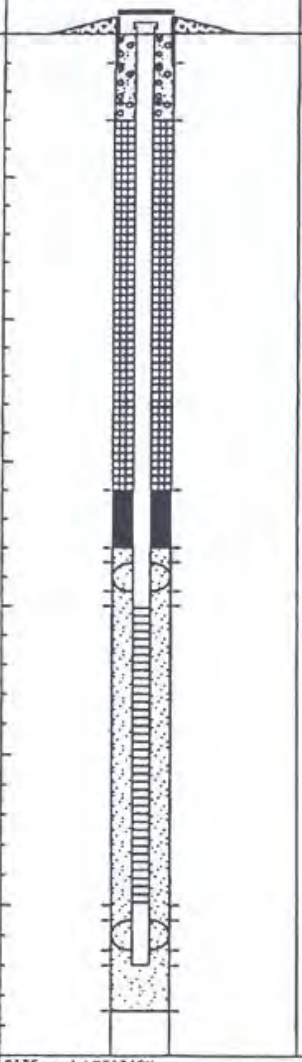
See key for graphic symbols.	SITE and LOCATION	HOLE NO.

ATTACHMENT B

Well Construction Details/Log: Belowground Surface Completion

Well Construction Details/Log: Belowground Surface Completion

WELL CONSTRUCTION DETAILS	PROJECT and JOB NUMBER		HOLE NO. SHEET NO. 1 OF 1	
	SITE and LOCATION		HOLE SIZE	BEGUN
DRILLER / DRILLING METHOD	COORDINATES	LOGGED BY:	TD OF WELL	COMPLETED
ELEV.: TOP of RISER CASING / GROUND /	GROUND WATER DEPTH / ELEVATION ▼ /	CHECKED BY:	TD of HOLE	UPDATE

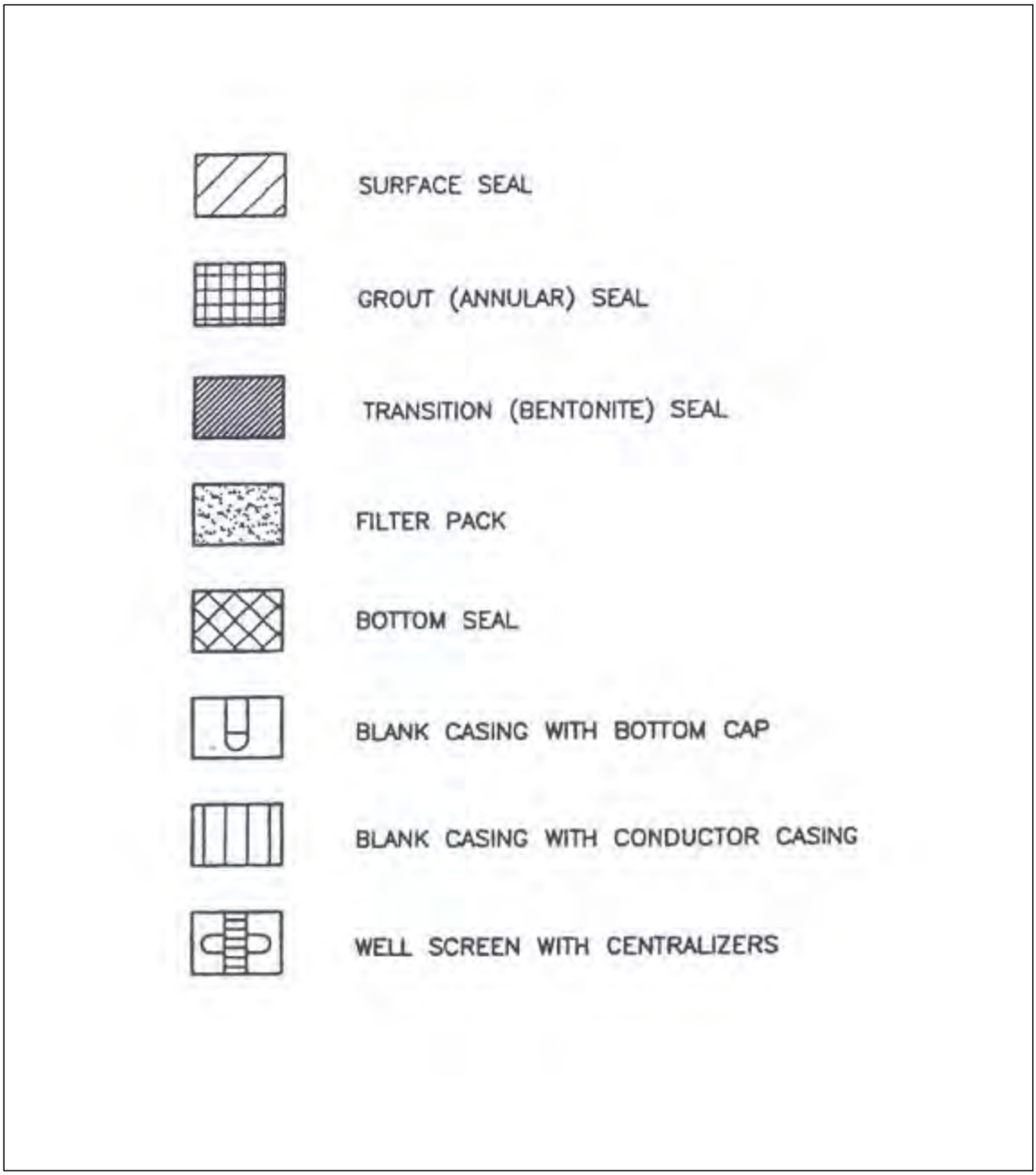
Well Construction Details	Well Graphics: Depth in Feet / Elevation in Feet	Graphics	(Template: BWELL) Geologic Description and Classification
SURFACE COMPLETION Dia. & Type: Bottom Depth = ___.__ft. CONDUCTOR CASING Dia. & Type: Bottom Depth = ___.__ft. GROUT SEAL Type: RISER CASING Dia. & Type: CENTRALIZERS (above screen) Depths = ___.__, ___.__ft. BENTONITE SEAL Top of Seal = ___.__ft. Type: FILTER PACK Top of Filter Pack = ___.__ft. Type: SCREEN Top of Screen = ___.__ft. Dia. & Type: Slot Size & Type: Bottom of Screen = ___.__ft. CENTRALIZER (below screen) Depth = ___.__ft. SUMP Dia. & Type: Bottom of Sump = ___.__ft.			

See key for graphic symbols.	SITE and LOCATION	HOLE NO.

ATTACHMENT C

Well Construction Graphics

Well Construction Graphics



ATTACHMENT D

Well Development Form

Well Development Form

WELL DEVELOPMENT

PROJECT: | WELL NO.:
JOB NO.: | SITE:

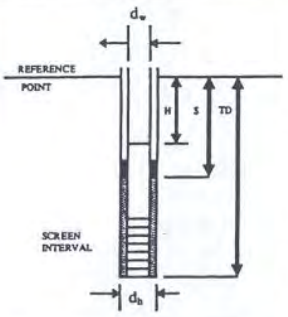
PREPARED BY
Name:_____
Signature:_____

DEVELOPMENT CRITERIA:

CHECKED BY
Name:_____
Signature:_____

REMARKS:

BOREHOLE DIAMETER d_h = ____ feet
WELL CASING:
INSIDE DIAMETER d_wID = ____ feet
OUTSIDE DIAMETER d_wOD = ____ feet
REFERENCE POINT: TOC
DEPTH TO:
WATER LEVEL H = ____ feet
BASE OF SEAL S = ____ feet
TOP OF SCREEN = ____ feet
BASE OF SCREEN = ____ feet
BASE OF WELL TD = ____ feet
ESTIMATED FILTER PACK POROSITY P = ____ %



WELL VOLUME CALCULATION

CASING VOLUME (Vc)

$$Vc = \pi \left(\frac{d_w ID}{2}\right)^2 (TD-H) = \_\_ ft^3$$

FILTER PACK PORE VOLUME (V_F)

$$V_F = \pi \left[\left(\frac{dh}{2}\right)^2 - \left(\frac{dwOD}{2}\right)^2\right](TD-S \text{ or } H)(P) = \_\_ ft^3$$

(IF S < H, USE H. IF S > H, USE S)

TOTAL WELL VOLUME (VT)

$VT = VC + VF = \_\_ ft^3$

$$ft^3 \times \frac{7.48 \text{ gallons}}{ft} = \_\_ \text{ gallons}$$

DEVELOPMENT LOG					CUMULATIVE TOTAL REMOVED		WATER QUALITY PARAMETERS					
Date	Time Begun	Time Finished	Method	Water Removed	Gallons per Liter	Well Volumes	Turbidity (Visual or NTU)	pH	Temperature (°F)	Electrical Conductivity (µmhos)	Dissolved Oxygen (% or mg/L)	COMMENTS

1.0 SIGNATURE AUTHORITY

TITLE	NAME	SIGNATURE
Quality Control Manager	Yu Zeng	
Sr. Technical Manager	Rod Reeve	
Program Manager	Max Pan	

2.0 PURPOSE

The primary objective of a groundwater-sampling event is to obtain accurate water quality data representative of the groundwater being monitored at the time of the collection. The purpose of this Accord Engineering, Inc. (AEI) standard operating procedure (SOP) is to direct the proper collection of groundwater samples through adherence to a site-specific sampling analysis plan (SAP) and implementation of quality assurance/quality control (QA/QC) measures.

3.0 SCOPE

This procedure is intended for use by field samplers in association with hydrogeologic/hazardous waste field investigations. It applies to the collection and handling of groundwater samples from monitoring wells. It addresses the specific activities to be performed prior to going to the field and upon arrival at each sampling location. This procedure also explains the process of groundwater sample collection, preparation or collection of QA/QC samples, and sampling event documentation.

Sample containers and preservatives for water samples are described in SOP F10-004 (Sample Containers, Preservation, and Handling). The project specific SAP presents sample numbering protocols. Chain-of-custody protocols for sample shipment to analytical laboratories are provided in SOP F10-005 (Sample Custody Transfer and Shipment).

4.0 REFERENCE MATERIALS

DOC. NO.	TITLE
NA	Glossary
SOP F10-001	Logbook Protocols
SOP F10-002	Instrument Calibration and Use
SOP F10-004	Sample Containers, Preservation, and Handling
SOP F10-005	Sample Custody, Transfer, and Shipment

DOC. NO.	TITLE
SOP F40-001	Water and Free Product Level Measurement in Wells
NFESC 1996	Navy Installation Restoration Laboratory Quality Assurance Guide, Naval Facilities Engineering Service Center (NFESC). 1996. Interim Guidance Document. February.
NFESC 1999	Naval Facilities Engineering Command (NAVFAC), Navy Installation Restoration Chemical Data Quality Manual (IR CDQM), Naval Facilities Engineering Service Center (NFESC), September 1999.
NFESC 2006	Naval Facilities Engineering Command (NAVFAC), Navy Environmental Work/ Institution, NFESC 19 April 2006.

5.0 DEFINITIONS

Aliquot - A portion of a solution or sample.

Analyte - A chemical component of a sample to be determined or measured.

Analytical (or Testing) method - A specification for sample preparation and instrumentation procedures or steps that must be performed to estimate the quantity of analyte in a sample.

Bladder pump - A stainless steel housing, a flexible membrane (i.e., the bladder) enclosed by the housing, and a screen that filters out materials that might clog check valves located above and below the bladder. Water enters the bladder through the lower check valve, while compressed gas (air) is injected at regulated intervals into the cavity between the housing and bladder. The bladder expands and contracts with air intake and escape, forcing the water to move through the upper check valve and into the discharge line to the wellhead; the upper check valve prevents back-flow into the bladder.

Dissolved Metals - Metals that can pass through a 0.45-micron filter in an undigested medium.

Duplicate -Two samples collected from a single location that have been designated for identical handling and testing. The purpose of taking these samples is to determine if the sampling procedure or the water source produces samples of a similar quality.

Equipment Rinsate Blank - The final distilled water rinse from equipment decontamination procedures. This procedure is performed when equipment is being field-cleaned or before a particularly critical well is to be sampled when it is desirable to assure that no foreign materials have been introduced into the well.

Field Pour Blank - Distilled water that is poured into a sample bottle at a sampling station to evaluate potential contamination from ambient air conditions (e.g., a volatile organic blank at a refinery area where ambient organic chemicals could contaminate well water that is being collected at that point, or a metals pour blank in an area where there is a high concentration of fugitive dust).

Matrix Spike - An aliquot sample with known quantities of compounds that is mixed with a field sample and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery. This procedure is performed by the laboratory.

Matrix Spike Duplicate - A second aliquot of the same compounds as the matrix spike that is spiked into a duplicate field sample in order to verify the precision and accuracy of the results of the matrix spike. This procedure is performed by the laboratory.

Peristaltic pump - A series of dividers or vanes fitted into a slotted rotor. When rotated, these vanes move radially to conform to the contour of the pump housing such that, due to the creation of a partial vacuum, water is pushed from the pump in a continuous flow ahead of the vanes. This pump is not recommended for samples being collected for organic analysis.

Replicate - A laboratory term used to designate iterative testing of the same sample to determine laboratory precision and accuracy.

Spike - A known amount of specific chemical constituent added by the laboratory to selected samples to test the appropriateness and recovery efficiencies of specific analytical methods within the actual sample matrices.

Split - A sample collected from a single location that has been divided into two portions designated for identical handling and testing. This is different from the duplicate, as the test here is to determine laboratory precision and accuracy. Note: splits are homogenous or made to be homogenous; duplicates are not.

Static Water Level - The water level of a well that occurs when no water is withdrawn or added to the well.

Submersible pump - A bowl assembly over an electric motor that is submersible. Water enters through an intake screen between the motor and the bowl assemblies, passes through the stages, and is discharged directly through the pump column to the wellhead.

Trip Blank - An aliquot of distilled water poured into a decontaminated sample bottle by the laboratory prior to a sampling event. It is exposed to the same trip environment as the field sample container and other similar sample containers and is analyzed to evaluate background or ambient conditions and/or handling procedures that may affect the results. Trip blanks also can be assembled at the sample staging area (i.e., they do not have to originate at the laboratory).

6.0 PROCEDURE

This SOP addresses the specific activities to be performed to accomplish a groundwater sampling event. The SOP includes a review of the SAP preparation of a delivery order for analytical laboratory services, procurement of equipment and supplies, field inspection of wells to be sampled, well water-level measurement, well purging and measurement of field parameters, groundwater sample collection, and field documentation requirements.

6.1. Preparation for Groundwater Sampling from Wells

6.1.1. Review of Field Sampling Plan

In preparation for a groundwater-sampling event at a given site, the field sampler shall review the site SAP to obtain the following information:

- the identification number(s) of the well(s) to be sampled,

- the locations of the wells,
- well location access requirements (e.g., permission of owner, locked gates, road conditions),
- the field and analytical parameters to be tested,
- the type and number of sample containers needed,
- volume of sample required for analysis,
- the type and number of QA/QC samples to be collected (e.g., duplicates, splits, and blanks), and
- the type of equipment needed for the scheduled sampling activity.

A copy of the SAP shall be taken to the field that will include a well location map. Copies of well completion diagrams and specifications shall be obtained for field reference as well as any available, previously obtained, well water level data for the wells to be sampled.

Field information and data obtained during the sampling event shall be recorded in accordance with SOP F10-001, Logbook Protocols in a logbook that is dedicated to the project. A Well Sampling Record (WSR) form or forms (Attachment A) shall be prepared to record the required information for the well sampling event.

6.1.2. Procurement of Analytical Laboratory Services

A subcontract work authorization for laboratory analytical services shall be prepared and submitted to the laboratory that specifies the sample media, number of samples, pay item numbers, and analytical parameters to be tested. The analytical laboratory, in accordance with the sampling schedule and the sample volume requirements, will provide sample containers, preservatives, and trip blanks as requested by the project manager or laboratory coordinator.

6.1.3. Equipment and Supplies

Planning for a sampling event entails assessing, selecting, and assembling the types of equipment, instruments, and supplies necessary to perform the scope of work. Prior to going to the field, instrumentation shall be assembled, calibrated (if applicable), and tested (procedures for instrument calibration are addressed in SOP F10-002: Instrument Calibration and Use). Listed below are the basic types of equipment, instruments, and supplies used for groundwater sampling from wells:

- instrument for measuring organic vapor concentrations (photoionization detector (PID) or organic vapor analyzer (OVA)/flame ionization detector (FID»,
- water-level indicator (e.g., electrical conductivity meter) and intercept probe or clear bailer if two-phase system is possible,
- Teflon or stainless steel bailer for purging and/or sampling wells and sufficient wire or line to lower bailers into the wells,
- pump for purging and/or sampling wells,
- containers (e.g., drums and/or Baker tanks) for purged well water that have capacity marked so amount of bailed or pumped water can be determined,
- measuring tape,

- sample containers and preservatives supplied by the laboratory,
- pH/conductivity/temperature meter(s), and extra batteries,
- turbidity and/or dissolved oxygen meters (optional),
- filtration equipment and 0.45-micron filters (if tests for dissolved metals are required),
- coolers and cooling agents (e.g., ice, blue ice),
- filament or duct tape for sealing coolers for shipment,
- decontamination supplies, including a plastic tarp, buckets, brushes, etc.
- calculator,
- keys to well protective casings,
- logbook,
- field sampling and field instrument calibration WSR forms, and
- chain-of-custody forms, sample labels, and custody seals (SOP F10-005).

Selection of the type(s) of purging and sampling devices (e.g., bailers and/or pumps) to be used for the sampling event shall be made during field preparations (if not already specified in the SAP). Bailers may be used if the wells to be purged and sampled are less than 40 feet deep and 4 inches or less in diameter. Pumps are generally used for larger, deeper wells. Low-flow bladder pumps or piston pumps, both of which require an air compressor to operate, may be used for purging and sampling wells where depth of water is less than approximately 100 feet below ground surface. Bladder pumps are recommended for sampling where water quality has been impaired by volatile organic compound (VOC) contamination. Stainless steel, low-flow, submersible, centrifugal pumps are used for purging wells in which water levels are more than 25 feet below ground surface. Submersible centrifugal pumps will require an electrical hookup or a gasoline- or diesel-powered generator to operate. Both pumps require sufficient lengths of polypropylene or polyethylene discharge hose to convey purge water to temporary storage containers (such as 55-gallon drums, roll-off bins, water buffaloes, or Baker tanks). Peristaltic pumps can be used to purge wells that are less than 25 feet deep. They are not generally employed for organic sampling.

6.1.4. Well Inspection

Prior to sampling a given well, its condition shall be inspected and recorded in the logbook. Any signs of vandalism, unauthorized entry or settlement and/or ponding around the well surface completion shall be noted in the logbook, along with the well identification number and the date.

The well protective casing shall then be unlocked and the well cap removed to allow the well to vent for approximately 2 minutes. As the well is uncapped, the potential evolution of any organic vapors or combustible gases (e.g., methane) from the well shall be tested using an organic vapor detector (e.g., PID or OVA/FID). The concentration, if any, of gaseous well emissions shall be recorded in parts per million (ppm) in the field logbook. In the event that no emissions are detected at the wellhead, a "0 ppm" measurement shall be recorded.

6.1.5. Water-Level Measurement

A water-level indicator (e.g., electrical conductivity meter or similar device) shall be used to sound the total depth of the well. Any discrepancy between the well total depth compared to the well specifications shall be noted in the logbook. Such a discrepancy may indicate the presence of a possible obstruction or break in the casing or sedimentation at the bottom of the well.

The depth to water shall be measured from the well top-of-casing reference point in accordance with SOP F40-001, Water and Free Product Level Measurement in Wells. The water level shall be recorded in the logbook to the nearest 0.01 feet, along with the time of day when the measurement was obtained and the weather conditions. If free product is encountered during the water-level measurement, an intercept probe or clear bailer shall be used to measure the depth to the top of the free product and the depth to water (SOP F40-001).

The water-level measurement shall be compared to the most recent water-level measurement obtained for the well (if any). If the measurements differ by more than 0.5 feet, the depth to water shall be measured a second time for verification purposes (the water level probe shall be dry before another measurement is obtained). A notation shall be made in the logbook if a probable cause for the discrepancy is known (e.g., tidal fluctuation, rainfall event, start-up of a nearby pumping well etc.).

6.1.6. Preparation for Well Purging

Purging (i.e., removing several casing volumes of groundwater from a well, including the volume of water contained in the filter pack) shall be performed prior to sampling to assure that the water sampled is representative of water in the formation being monitored. It is important to purge a sufficient volume of water from the well to yield representative samples, but not to over purge such that water from any nearby surface water features (e.g., streams, ponds), or groundwater contaminant plumes, is drawn into the well. In order to assure that an appropriate amount of water is purged from the well prior to sampling, its borehole volume must be calculated.

Using the well total depth, length of sand pack, and depth-to-water measurements, along with the measured internal diameter of the well casing (measured in tenths of a foot) and the nominal diameter of the boring for the sand pack, the borehole volume M of the casing can be determined. The bore-hole volume can be calculated using the following formula:

- $V = [\pi r_1^2 (h_1 + h_2) + \pi (r_2^2 - r_1^2) \rho h_2] \times 7.481 \text{ gal/ft}^3$

  Where:

  r_1 = radius of the casing, in feet

  r_2 = radius of borehole, in feet

  h_1 = height of water in the well above filter pack, in feet

  h_2 = length of filter pack

ρ = estimated porosity of the filter pack

π = 3.142

The calculated (V) shall be recorded in the logbook.

6.1.7. Well Purging

Depending on the depth of the well and the volume of water to be removed, the well can be purged using either a bailer or a pump. If low-flow (minimal drawdown) purging is being conducted, the use of a bailer is not appropriate (see Section 6.3).

Purging is necessary to remove stagnant water in the casing that may have assumed different water quality characteristics due to interaction with the casing, or filter pack and/or changes in conditions (e.g., higher temperatures and/or dissolved oxygen levels).

6.1.7.1. Bailing Purge Water

Purging of groundwater from small-diameter, shallow wells (i.e., wells 2 to 4 inches in diameter) that are installed to a maximum depth of 40 feet below ground surface, and that contain a column of water less than 20 feet in height, can be performed by bailing. A polyethylene, stainless steel, or Teflon, single- or dual-check valve bailer shall be used for bailing groundwater-monitoring wells.

Prior to bailing a well, a clean length of monofilament nylon or polyethylene shall be attached to a decontaminated bailer that is of sufficient length to reach the bottom of the well. The other end of the cord shall be attached to a fixed feature (e.g., the well protective casing) to prevent the possible loss of the bailer down the well. Alternatively, the cord may be secured and wrapped around a reel to facilitate raising and lowering the bailer during the purging effort.

Bailing of a well shall be initiated by slowly lowering the bailer into the well water column and allowing it to fill. The groundwater evacuated from the well during the initial bailing run shall then be tested for the field water quality parameters (Section 6.1.7.3). Field parameter measurements shall be recorded in the logbook. The well discharge in the bailer shall then be poured into a container with capacity markings so that the amount of water removed can be calculated easily. This water shall then be transferred to a Department of Transportation approved 55-gallon drum. The well shall be bailed repeatedly until three to five well volumes have been discharged and the field parameter measurements have stabilized. The analytical test results received from the laboratory may also be utilized to evaluate disposal options. If the field parameters have not stabilized after five volumes, the well shall be sampled anyway.

The purge water collected in one or more 55-gallon drums shall be secured with ringed lids, and its contents shall be properly labeled. Alternatively, the purge water may be pumped into a Baker tank for temporary, on-site storage.

Purged groundwater in the temporary storage containers shall be tested and analyzed to evaluate disposal options in accordance with the site waste management plan. The analytical test results from the laboratory may also be utilized to evaluate disposal options. If there is prior knowledge of the potential for encountering contaminated water, it may be possible to segregate potentially uncontaminated wells from contaminated ones to minimize disposal costs.

6.1.7.2. Pumping Purge Water

- Groundwater purging at monitoring wells will be conducted using the low-flow purge/sampling method (USEPA/QAD023, October 1997). Disposable nitrile gloves will be worn during all purging and sampling activities. Nitrile gloves will be disposed of after purging activities, and a new pair will be worn before sampling each well to avoid possible cross-contamination.
- The location of the well screen interval will be determined from the well construction logs. The stainless steel bladder pump inlet will be lowered into the well to the midpoint of the screen interval. Record the depth of the pump inlet on the well sampling form.
- Connect the pump discharge tubing to the water quality meter flow-through cell. The discharge tubing from the top end of the flow-through cell should be directed to a 5-gallon bucket to collect the groundwater during purging activities.
- Connect the air inlet hose to the pump control box.
- Personnel should start pumping the well at 0.1 to 0.3 liters (100 to 300 milliliters) per minute Check the water level in the well, and measure the discharge rate of the pump by using a graduated cylinder and stopwatch every minute for the first 5 minutes. Measure and record the water level, discharge rate, and water quality indicator parameters in the well on the Well Sampling Form every 3 to 5 minutes during purging.
- During purging activities, check the discharge tubing for air bubbles. If bubble(s) exist, move the tubing where the bubble is to enable the bubble to pass through the tubing and into the flow-through cell.
- During the well purging, a minimum volume of water (volume of the water in the pump and the flow-through cell) must be purged before recording the water quality indicator parameters. During purging, monitor pH, temperature, specific conductance, oxidation/reduction potential (ORP), and dissolved oxygen (DO) approximately every 3 to 5 minutes with a calibrated water quality meter. The water quality meter will be calibrated to the manufacturer's specifications using current (un-expired) standards. A 2-point calibration procedure will be conducted

on each water quality meter, as appropriate. A flow-through cell will be used to monitor the water quality indicator parameters.

6.1.7.3. Measurement of Field Parameters during Well Purging

The groundwater should be purged until indicator parameters have stabilized. The well will be considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings, as follows:

- √ Consecutive readings within ± 0.1 standard units for pH;
- √ Consecutive readings within ± 1 degree Celsius (°C) for temperature;
- √ Consecutive readings within ± 3 percent microhms per centimeter (μohms/cm) for specific conductance;
- √ Consecutive readings within ± 10 millivolts for oxidation reduction potential (ORP); and
- √ Consecutive readings within ± 0.3 for DO (milligrams per liter [mg/l]).

A well in which the static water level is slow to recover shall be allowed to recover to 80 percent of the static water level. If over 2 hours are required for the well to recover from the purging effort, the well shall be purged to dryness again. A sample shall be collected as soon as the well has recovered to 80 percent regardless of the volume of water purged.

6.2. Groundwater Sample Collection from Wells

During a scheduled sampling event, groundwater samples shall be collected first from wells that are least likely to be contaminated. The most heavily contaminated wells shall be sampled last. Sampling wells in this order will reduce the possibility of cross-contamination between wells.

Once the field-parameter have stabilized, discard gloves worn during purging activities, put on a new pair of nitrile gloves. Remove the discharge tubing from the bottom of the water-quality meter flow-through cell and collect the samples directly from the end of the discharge tubing.

The pump tubing has to be completely full of groundwater (no bubbles) to prevent the groundwater from being aerated as it flows through the tubing. Tubing should not touch vials or bottles during sampling.

Sample wells for analytes in the following sequence:

- Volatiles
- Semi-volatiles
- Pesticides/PCBs
- Other Organics (BTEX, TPH)
- Water Quality (wet chemistry) parameters
- Inorganics
- Metals (filtered)

Fill each laboratory supplied container (VOA vials, 1 liter ambers, and polyethylene bottles). VOA vials should be filled until a positive meniscus is formed at the top. After the containers are full, cap immediately. VOA vial should be inverted then taped on the side lightly to check for the presence of air bubbles. If air bubbles are present, discard the sample, and resample using a new vial.

Collect the required volume of groundwater for field analytical methods (i.e. ferrous iron, hydrogen sulfide, and dissolved oxygen) as applicable.

Immediately after sample collection, bottles are filled and capped. Dry the outside of bottles with a clean paper towel. Affix completed label on all sample bottles. If label is wet, re-label bottle with new label. Place a piece of packaging tape over the filled-out label on the bottle to protect the label from moisture during shipping. Record the sample ID on the Well Sampling sheet and COC forms. Wrap glass bottles in bubble-wrap packaging material and place specific bottles per analysis into individual re-sealable bags. Seal the bags and place them into a cooler containing ice.

Carefully remove bladder pump from the well.

Close and lock the well.

If a Teflon, polyethylene or stainless steel, single- or dual-check valve bailer is used for sampling; it shall be slowly and repeatedly lowered into the well until sufficient sample has been obtained to meet the volume requirements for the analytes to be tested. The bailer shall be raised with a smooth action that avoids contact with the casing walls or other agitation. The sample may be poured into the container from the top of the bailer or through a discharge port attached to the bottom of the bailer. If the sample is collected with a bladder pump or a submersible pump, the discharge rate may be adjusted slightly and the sample may be collected directly into the sample container. When a pump is used, U.S. EPA recommends that volatile organic samples be collected at a rate of less than 0.1 liter per minute.

6.2.1. Sample Containers and Preservatives

Requirements for groundwater sample containers, preservation requirements, and holding times are addressed in SOP F10-004 (Sample Containers, Preservation, and Handling). Additional requirements for groundwater samples designated for analysis of VOCs and metals are presented below.

Groundwater samples designated to be tested for VOCs and/or total organic halogens (TOX) shall be collected in 40 milliliter (mL), volatile organic analysis (VOA) vials. The vials shall be filled until a convex meniscus forms at the top of each vial, then capped with a Teflon-lined cap with no headspace left. Each VOA vial shall then be inverted and tapped to check for air bubbles. If either bubbles or headspace is observed, the vial shall be discarded and the sample re-collected and again checked for zero headspace and air bubbles. If acceptable, the sample VOA vials shall then be stored immediately inside a cooler at a temperature of less than or equal to 6 degrees Celsius.

Samples to be submitted for dissolved metals analysis may require field filtration prior to transfer or shipment to the laboratory. In this case, sufficient sample shall be

collected in a decontaminated bucket or other suitable container from which the water may be pumped through a filter and into the appropriate (pre-preserved sample) container. A peristaltic pump shall be used for filtering along with disposable tubing and an in-line disposable cartridge with a 0.45-micron pore-diameter filter. Approximately 200 mL of discharge water shall be flushed through the filter prior to collecting the sample. The filter shall be replaced when flow of water through the filter is impaired.

6.2.2. Quality Control Samples

For each sampling event, additional samples are required for QA/QC purposes. In accordance with NFESC (1996), QA/QC samples shall be collected and handled at the same time and in the same manner as the other groundwater samples collected.

6.2.2.1. Field Blanks

Field blanks shall be prepared in the field. The field blank shall be prepared by pouring analyte-free water into a decontaminated sample jar at the station of interest. The field blank shall then be sealed and handled in accordance with SOP F10-004.

6.2.2.2. Trip Blanks

Trip blank samples generally shall be prepared by the analytical laboratory prior to the sampling event and shall be used whenever samples are designated for analysis of VOCs. They can however, be prepared as part of a sampling event in the field. Trip blanks shall be prepared with demonstrated analyte-free water and shall be kept with the samples collected during the sampling event. The trip blanks shall be sealed in 40-mL glass VOA vials with Teflon-lined septum caps, and shall be completely filled (i.e., leaving no headspace). The trip blanks shall be submitted to the laboratory with each cooler that contains samples for analysis of VOCs.

6.2.2.3. Equipment Rinsate Blanks

An equipment rinsate blank shall be prepared by the field sampler using demonstrated analyte-free water that has been poured into and over, and/or pumped through decontaminated sampling equipment (excluding disposable or dedicated equipment), including non-dedicated pumps and tubing, and filtration devices used during a groundwater-sampling event. A blank shall be obtained at least once daily. The rinsate blank shall be analyzed for all analytes specified in the site-specific SAP for the station at which it was collected. If the blank is a general check, then it shall be analyzed for all analytes of concern.

6.2.2.4. Duplicates

Duplicate samples shall be collected at a frequency of at least 10 percent, or a minimum of 1 per 10 samples collected. The duplicates shall be designated for

analysis by the same testing methods for the same analytes as the original samples. Duplicates shall be submitted to the analytical laboratory in the blind.

6.2.2.5. Matrix Spike/Matrix Spike Duplicate

A matrix spike (MS)/matrix spike duplicate (MSD) blank shall be collected by the field sampler during the sampling event and shall consist of a triple volume of groundwater sample that is collected in three separate containers from one well during a sampling event. After the MS/MSD samples have been submitted to the analytical laboratory, the laboratory shall spike the MS/MSD samples. MS/MSDs shall be collected at a frequency of at least 5 percent or one every two weeks or as specified in the site-specific SAP. Collection of MS and MSD samples is not required for equipment rinsate blanks.

6.2.3. Sample Documentation

The appropriate sample custody documentation shall be completed in accordance with SOP F10-005, Sample Custody, Transfer, and Shipment. All entries on the chain-of-custody form shall be entered using indelible ink. Any errors shall be lined out with a single line, and then initialed and dated. All chain-of-custody forms shall be signed and all applicable blocks shall have entries. Unused blocks or spaces shall be marked with a "N/A" (not applicable) or shall be lined out.

6.2.3.1. Well Sampling Record

The groundwater samples collected from each well shall be identified in the field logbook along with the QA/QC samples prepared or collected. The field sampler shall be responsible for completing the WSR and other logbook entries. The logbook shall be submitted to the Project Manager for review in accordance with SOP F10-001, Logbook Protocols.

6.3. Low-Flow (Minimal Drawdown) Ground Water Sampling

Under certain conditions, the common ground water purging and sampling methodology of well purging by use of bailers or high-speed pumps can cause adverse impacts on turbidity levels. This, in turn, can compromise analytical results. Selection of low-flow purging and sampling techniques (U. S. EPA 1997) can diminish these adverse effects.

The collection of representative groundwater samples is limited primarily due to:

- mixing of stagnant casing and fresh screen waters during sampling or groundwater level measuring device insertion
- increased turbidity due to disturbance and re-suspension of settled solids as the result of too high pumping rates or inappropriate use of pumps or bailers;
- introduction of atmospheric gases or degassing from groundwater during purging and sampling operations.

6.3.1. Sampling Recommendations

Low-flow pumps that pump at a rate of 0.1 to 0.5 liter per minute (L/min) shall be used for pumping and sampling for all analyses. Bailers are inappropriate for low-flow groundwater sampling.

Whether using portable or dedicated systems, this method shall be done using a pump intake set in the middle or slightly above the middle of the screened interval. If sampling is being done from an unconfined aquifer (screened across the water table), placement of the pump is recommended at the top of the water column or at the particular level of interest within the screened interval.

Use low-flow rates (less than 0.5 L/min) during both purging and sampling. This will minimize the well drawdown. Use tubing that is of maximum thickness and of minimum length. During water level measurements and installation of the sampling device to be used, minimize the disturbance of the water column above the screened interval. Stabilize the flow rates as quickly as possible and monitor the water quality indicators during purging. Unfiltered samples should be collected to estimate contaminant level and transport potential in the groundwater aquifer.

6.3.2. Equipment Calibration

All equipment shall be calibrated according to SOP F10-002 or as specified in the site-specific SAP.

6.3.3. Water-Level Measurement and Monitoring

Depth to water shall be measured as described in Section 6.1.5. If possible, obtain well depth from the well logs to avoid re-suspension of settled solids from the formation (which will necessitate longer purging times for stabilization of turbidity). Measure the well depth according to SOP F40-001, Water and Free Product Level Measurement in Wells.

6.3.4. Pump Type

A pump with a capability of low-flow rates (0.1 to 0.5 L/min) should be used for purging and sampling all analyte types. Avoid the use of bailers for low-flow (minimal drawdown) sampling. Various pump types include peristaltic pumps, bladder pumps, and electric submersible pumps. The pump should provide consistent results and minimal disturbance of the sample across low flow rates.

6.3.5. Pump Installation

If possible, use a dedicated system capable of pumping and sampling. Otherwise, install the pump slowly to the middle or slightly above the middle of the screened interval, thus minimizing mixing of stagnant casing water with formation water within the screened interval, and re-suspension of settled solids from the bottom of the well.

6.3.6. Filtration

Use 0.45-micron pore diameter filters to assess dissolved concentrations of major ions and trace metals. If significant particulate calcium carbonate is present, also filter samples when assessing alkalinity concentrations.

Be aware that filtration may inadvertently affect oxidation, aeration or other parameters during sample analysis, and cause uncertainty in results. Filtration guidelines should be established and followed, considering filter type, media, pore size, etc.

Use in-line filtration if possible. Pre-rinse filters according to manufacturer's recommendations. To avoid filter cake, pre-filtering with a larger pore size filter, or smaller sample volumes may be instrumental in avoiding reduction of the effective pore diameter of the membrane, excessive particle loads, and exclusion of particles smaller than the stated pore size.

6.3.7. Water-Level Monitoring and Water Quality Parameters

For low-flow (minimal drawdown) well purging, water level monitoring and water quality parameters should be monitored continuously (i.e., every 3 to 5 minutes when using a flow rate of 0.1 to 0.5 L/min). See section 6.1.7.2.

It is important to monitor drawdown in the well to ascertain the need for flow rate adjustment.

6.3.8. Sampling, Sample Containers, Preservation and Decontamination

Sample wells progressively from least to most contaminated, in the following sequence:

- Volatiles
- Semi-volatiles
- Pesticides/PCBs
- Other Organics (BTEX, TPH)
- Water Quality (wet chemistry) parameters
- Inorganics
- Metals (filtered)

Follow sampling, sample container, preservation and decontamination procedures as specified in Sections 6.2 above, in accordance with SOP F10-004, Sample Containers, Preservation, and Handling, and in accordance with the site-specific SAP.

6.3.9. Blanks

Follow the procedures as specified in Section 6.2.2, Quality Control Samples, above, and in accordance with the site-specific SAP.

7.0 ATTACHMENTS

A Well Sampling Record

8.0 REVISION HISTORY

REVISION	SECTION/FORM	REVISION DESCRIPTION	DATE
-	-	Initial Release	

ATTACHMENT A

Well Sampling Record

WELL SAMPLING

PROJECT:
JOB NO.:

WELL NO.:
SITE:

PREPARED BY

Name: _____

Signature:_____

PURGING CRITERIA: **3 Borehole Volumes**

GROUNDWATER QUALITY PARAMETER STABILIZATION CRITERIA:

PH ±0.1; CONDUCTIVITY ±3%; TURBIDITY or DISSOLVED OXYGEN ±10%

CHECKED BY

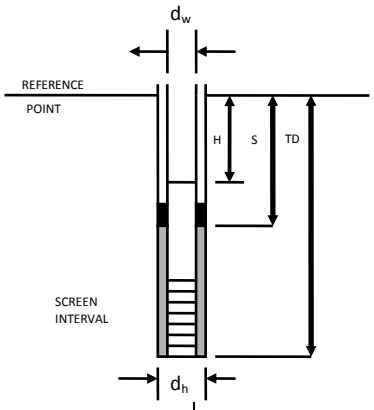
Name:_____

Signature:_____

REMARKS (include depth of pump inlet, if applicable):

.

BOREHOLE DIAMETER	d_h	=	_____feet
WELL CASING:			
INSIDE DIAMETER	d_wID	=	_____feet
OUTSIDE DIAMETER	d_wOD	=	_____feet
REFERENCE POINT:	TOC		
DEPTH TO:			
WATER LEVEL	H	=	feet
BASE OF SEAL	S	=	feet
TOP OF SCREEN		=	feet
BASE OF SCREEN		=	feet
BASE OF WELL	TD	=	feet
ESTIMATED FILTER PACK POROSITY	P	=	%



WELL VOLUME CALCULATION

CASING VOLUME (V_C)

$$V_C = \pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = \_\_ ft^3$$

FILTER PACK PORE VOLUME (V_F)

$$V_F = \pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - S \text{ or } H)(P) = \_\_ ft^3$$

(IF S < H, USE H. IF S > H, USE S)

TOTAL WELL VOLUME (VT)

VT = VC + VF = ft^3

$$ft^3 \times \frac{7.48 \text{ gallons}}{ft} = \text{gallons}$$

PURGE LOG					CUMULATIVE TOTAL REMOVED		WATER QUALITY PARAMETERS						
Date	Time Begun	Time Finished	GW Level	Water Removed	Gallons per Minute	Well Volumes	Turbidity (Visual or NTU)	pH	Temperature (°C)	Electrical Conductivity (mS/m)	Dissolved Oxygen (mg/L)	Salinity (%)	ORP

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1.0 SIGNATURE AUTHORITY

TITLE	NAME	SIGNATURE
Quality Control Manager	Yu Zeng	
Sr. Technical Manager	Rod Reeve	
Program Manager	Max Pan	

2.0 PURPOSE

The purpose of this Accord Engineering, Inc. (AEI) standard operating procedure (SOP) is to identify the methods to be used for the measurement of water and free-product levels in wells and to provide standardized reporting formats for documentation of data.

3.0 SCOPE

This SOP is intended for use by personnel for the field acquisition and documentation of well water-level data, measured as the depth-to-water from a surveyed reference point elevation. Measurement and the reporting of the level of any free-product layer detected in a given well during monitoring activities is also addressed. Well water levels may be monitored continuously using electronic data loggers and pressure-sensitive transducers, or obtained manually, with a water-level indicator or steel surveyor tape, by a geologist/environmental engineer.

During a field investigation, well water-levels may be obtained in association with well development (SOP F20-003, Monitoring Well Installation and Development), purging and sampling (SOP F30-002, Groundwater Sampling), or aquifer testing activities. Successive measurements of well water levels over time in association with a long-term monitoring program may be used to assess seasonal and/or diurnal fluctuations, as well as the effects of any pumping wells on groundwater flow direction and gradient.

4.0 REFERENCE MATERIALS

DOC. NO.	TITLE
NA	Glossary
SOP F10-001	Logbook Protocols
SOP F10-003	Decontamination of Equipment
SOP F20-003	Monitoring Well Installation and Development
SOP F30-002	Groundwater Sampling

DOC. NO.	TITLE
U.S. EPA 1986	RCRA Groundwater Monitoring Technical Enforcement Document, OSWER-9950.1, September.
U.S. EPA 1987	A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001: Washington, D.C.
NA	ASTM D 4750-87, 1988, Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation Well), January.

5.0 DEFINITIONS

Apparent thickness - The calculated thickness of a free-product layer overlying groundwater is obtained by subtracting the depth measurement to water from the wells surveyed reference point elevation; the true free-product thickness (i.e., as measured in the formation) may differ from that calculated as a function of hydrogeologic conditions.

Hydrograph - A plot of well water-level elevation versus time.

Immiscible fluid - A fluid that is incapable of mixing or blending with water.

Potentiometric surface - The level to which water will rise in a cased well under atmospheric pressure conditions.

6.0 PROCEDURE

Water-level measurements in wells in which no immiscible components are detected shall be obtained manually using a two-conductor, battery-powered water-level indicator (e.g., electrical sounder or conductivity meter) or steel surveyor tape. Continuous water level measurements, made in association with aquifer testing activities or tidal influence studies, may be obtained using an electronic data logger (e.g., an In Situ Inc. Troll®, or equivalent device) and pressure transducers. Measurement of water and free product in wells shall be performed using an interface probe (e.g., Solinst interface probe or an equivalent device).

6.1. Preparation for Monitoring Well Water/Product Levels

In preparation for a well monitoring event, the geologist/environmental engineer shall review the site work plan to obtain the following information:

- the identification number(s) of the well or wells to be monitored,
- the locations of the wells as shown on a site map,
- records listing the most recent water-level measurement for the well(s) (if available),
- well access requirements (e.g., permission of owner, locked gates, road conditions),
- the types of equipment needed to perform the scheduled monitoring activity,
- calibration requirements for the equipment (if applicable), and

- health and safety considerations, as appropriate.

Preparation for the well monitoring event also includes the use of a hard-bound field logbook in accordance with SOP F10-001 (Logbook Protocols). One or more Water/Product Level Form(s) (Attachment A) for each monitoring well shall be utilized to document relevant data. Water-level measurements and supporting information (Section 6.3) shall be recorded on these forms in the field.

6.1.1. Review of Existing Data

The geologist/environmental engineer may elect to prepare a hydrograph with the water-level data available for each well (or update an existing hydrograph) prior to going to the field. A hydrograph provides a visual record of water-level fluctuations over time and is useful to identify any water-level measurements that appear anomalous due to changes in conditions (e.g., a water-level rise due to a rainfall event or events, a drop in water level due to initiation of pumping at a nearby well).

6.1.2. Equipment

Planning for a well water level monitoring event entails assessing, selecting, and testing the types of equipment and supplies necessary to perform the scope of work. Listed below are the basic types of equipment and supplies used for the measurement of water levels.

6.1.2.1. Manual Measurement

√ Water level indicator (two-wire electrical sounder or conductivity meter), equipped with a sufficient length of cable to reach the deepest anticipated water-level; the cable should be graduated into 0.01-foot intervals.

√ Interface probe, as needed per Section 6.3.2, equipped with a sufficient length of cable to reach the deepest anticipated water- level; the cable should be graduated into 0.01-foot intervals.

√ Teflon® bailer.

√ Extra batteries for the water level indicator.

√ Decontamination supplies (e.g., Alconox or other nonphosphate detergent, deionized or distilled water, brush, plastic bucket, clean spray bottles, paper towels, clean plastic sheeting) used for decontamination of the water-level indicator or interface probe and cable, as per SOP F10-003, Decontamination of Equipment.

√ Keys for locked protective casings.

√ Tools (e.g., wrenches), as needed, to enter wellheads.

6.1.2.2. Continuous Measurement

- √ Electronic data logger (with the appropriate number of channels, as a function of the number of wells to be monitored simultaneously).
- √ Water level indicator, (as described above).
- √ Pressure-sensitive transducers, including one barometric pressure transducer, that are compatible with both water quality and anticipated pressure-sensitivity range in a given well. Also, transducer cables graduated into 0.01-foot intervals-
- √ Decontamination supplies, (as described above).
- √ Keys for locked protective casings.
- √ Tools, as needed, to enter well heads.

6.2. Well Inspection

Prior to obtaining a water level in a given well, its condition shall be inspected. Any signs of vandalism, unauthorized entry, or settlement and/or ponding around the well surface completion shall be noted in the "Remarks" column of Attachment A.

6.3. Manual Water-Level Measurement

The procedures for manual water measurement in wells are presented below for wells in which no free product has been detected, and for wells in which free product is known to float on the water surface.

6.3.1. Water-Level Measurement

A water-level meter shall be used to measure the water level. The type of device used for water level measurement shall be noted in the "Remarks" column of Attachment A.

If a water-level indicator is used, the probe is to be lowered into the riser casing until water is encountered, as indicated by the instrument signal. The water level is then measured with respect to the "top-of-casing" reference point and entered on Attachment A. Two additional water level measurements shall be made per the manufacturer's instructions to verify the initial reading obtained.

6.3.2. Water Level/Free-Product Level Measurement

If free product is detected in a well as a floating layer over water, an interface probe shall be used to obtain the level of the free product and the underlying water level. An interface probe can detect a free product layer that is approximately 1/200-foot-thick or greater.

The cable of the instrument shall be slowly lowered into the well's riser casing until a signal occurs indicating the top of free product (the nature of the signal will vary according to manufacturer). The depth to the top of the product from the wells

surveyed reference point shall be recorded on Attachment A. The cable shall then continue to be lowered into the casing until the interface probe signal is observed or heard indicating that the water level has been reached. The depth-to-water indicated shall also be recorded on the form.

By subtracting the depth-to-water from the depth-to-product, the apparent thickness of the free product is calculated and recorded on Attachment A. The water-level elevation is calculated by subtracting the depth-to-water from the wells reference point elevation.

6.4. Continuous Water Level Measurement

Continuous water-level data may be required for certain field investigation activities such as aquifer testing and gauging tidal influence on well water levels. Electronic data loggers and transducers are typically used for continuous water-level measurement.

6.4.1. Equipment Installation

An electronic data logger may be installed in one well with one transducer cable or may be connected to additional transducer cables that simultaneously monitor up to 15 additional nearby wells (the maximum transducer cable length currently available from one manufacturer [In situ, Inc.] is 4,500 feet). Standard transducer cables are made of polyurethane and are available for rental or purchase; however, Teflon cables are also available for purchase. One of the transducers used should be a barometric pressure transducer; if a barometric pressure transducer is not available, a barograph may be used to gage changes in barometric pressure during the monitoring event that might impact water-level measurements.

The electronic data logger and transducer cables shall be installed by the geologist/environmental engineer in accordance with the manufacturer's instructions. The data logger may be placed near a well or mounted on a post (if mounted on a post, the data logger shall be housed in a protective cabinet). A transducer cable shall be lowered into each well to be monitored and secured with plastic tie strips to the riser casing or protective well casing. The cable shall be positioned such that it does not interfere with closing and locking of the wells protective casing; the cable shall be positioned such that it is not pinched. If transducer cables are extended over areas that are heavily trafficked or mowed, they should be buried in a 6-inch-deep trench or strung through small-diameter, polyvinyl chloride (PVC) casing for protection. If cables are buried, their respective locations shall be flagged with survey laths and colored surveyor tape.

6.4.2. Equipment Calibration

Pressure transducers are available which require no field calibration (e.g., In-Situ Inc. Troll 9500). If fluctuations in water levels are anticipated over a range of less than 23 feet, a transducer rated at 10 pounds per square inch (psi) is appropriate. If a greater range of water-level fluctuation is anticipated, the manufacturer's representative

should be consulted as to the transducer psi rating required. Periodic manual measurement of water levels shall be performed as a check on the water-level data recorded by a data logger.

6.5. Quality Assurance/Quality Control

To promote consistency of data, water-level measurements in a given well should be obtained with the same measuring device as used during previous monitoring events.

As a Quality Assurance/Quality Control (QA/QC) check on the accuracy of water- level indicator measurements, the water level in a well may be obtained using steel tape and Carpenter chalk. Measuring water levels with a steel tape graduated to 0.01-foot is considered the most accurate method for obtaining water levels. Measurement of the water level in which a free-product layer is present may be checked for accuracy, using steel tape and water-finding paste. As stated in Section 6.4.2, verification of data obtained with an electronic data logger shall be obtained by periodic (e.g., hourly, daily) manual water-level measurement.

7.0 RECORDS

The geologist/environmental engineer shall submit copies of water and/or water/product levels forms to the project manager immediately following the monitoring event for checking and revision purposes. The field logbook will be saved in the project file.

8.0 ATTACHMENTS

A Water-Level Measurements Form

B Water/Product-Level Measurements Form

9.0 REVISION HISTORY

REVISION	SECTION/FORM	REVISION DESCRIPTION	DATE
-	-	Initial Release	

ATTACHMENT A
Water-Level Measurements Form

WATER-LEVEL MEASUREMENTS FORM

Water-Level Measurements				Project and Job Number			Sheet No.
Facility				Site	Monitored By: Checked By:		
Well ID Number	Date/ Time	Instrument Serial Number	Calibrated By	Reference Point Elevation (feet)	Depth To Water (feet)	Water-Level Elevation (feet)	Remarks

ATTACHMENT B
Water/Product-Level Measurements Form

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WATER/PRODUCT-LEVEL MEASUREMENTS FORM

Water/Product Level Measurements			Project and Job Number:				Sheet No.
Facility			Site		Monitored By: Checked By:		
Well ID No.	Date/Time	Instrument Serial Number	Reference Point Elevation (feet)	Depth to Product (feet)	Apparent Product Thickness (feet)	Water Level Elevation (uncorrected) (feet)	Remarks

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STANDARD OPERATING PROCEDURE

SOIL SAMPLING PROCEDURE FOR VOLATILE ORGANICS USING THE EnCore® SAMPLER

SOP NUMBER: T-003

REVISION NUMBER: 03

REVISION DATE: September 30, 2009

REVIEW DATE: July 16, 2010

Prepared by: _____ *September 30, 2009*
Jason Williams *Date*

Approved by: _____ *September 30, 2009*
Jesse MacNeill - Quality Assurance Manager *Date*

Approved by: _____ *September 30, 2009*
Tim Shields - Program Manager *Date*

BRADY

3710 Ruffin Road
San Diego, CA 92123

TABLE OF CONTENTS

RICHARD BRADY AND ASSOCIATES
STANDARD OPERATING PROCEDURE

SOIL SAMPLING PROCEDURE FOR VOLATILE ORGANICS USING THE En Core® SAMPLER

1.0 PURPOSE

This Standard Operating Procedure (SOP) describes a procedure for collecting soil samples for volatile organic compounds (VOCs) using the En Core® Sampler. The outlined procedure is based on the EPA Method 5035 methodology presented in Update III of SW-846 promulgated in June 1997 and may be used in conjunction with analytical determinations of volatile organics including EPA Method 8015Modified (gasoline fraction only), 8021A, and 8260B.

EPA Method 5035 addresses four on-site handling options from which to select. This SOP focuses on the collection of soil samples for VOC analyses using a headspace-free, gas-tight sampler known as the En Core® Sampler. This SOP is not intended to replace thorough training and reading of reference materials

2.0 BACKGROUND

Collection and storage of soils for VOC analyses using previous EPA methodology (EPA Method 5030) has shown to be inadequate. The primary reasons are the loss of volatiles in the sampling and sub-sampling stages, and microbial degradation of aromatic volatiles. The methodology presented in EPA Method 5035 was designed to minimize VOC losses through volatilization and biodegradation. To address these problems and minimize the loss of VOCs during sample handling stages, EPA Method 5035 includes provisions such as field-preservation or the use of an En Core® Sampler designed to store and transfer soils (no field preservation required) with minimal loss of VOCs.

The En Core® Sampler can be used as applicable (cohesive granular soils) to collect and store samples without preservation for a maximum of 48 hours. A minimum of three En Core® Samplers per location is required to determine whether the concentration is high- or low-level, and to cover the potential for low-level and high-level contamination. Moisture content (so VOC results can be reported on a dry-weight basis) can be determined from unpreserved samples and may be collected from the conventional sample sleeve. The En Core® Sampler is a single use device.

3.0 APPLICABILITY

The procedures presented in this SOP are applicable to field investigation activities involving soil sample collection for VOC analyses. If needed, other methods of field preservation are covered under EPA method 5035. The other methods are not covered in this SOP.

Prior to determining the most appropriate VOC sample collection and preservation method, it is important to gather information regarding the type of soil to be sampled. If this information is not available, the project Sampling and Analysis Plan (SAP) should address all potential available methods of sample collection and preservation to minimize the loss of VOCs during sampling activities. In this case, field personnel should be prepared to perform any of the potential methods.

- Cohesive Granular Soils– The En Core® Sampler should be used on sites where cohesive soils are anticipated or known to occur. This sample collection and preservation method is preferable since it eliminates weighting and the addition of preservation in the field. In this case, samples must be stored at 4°C and prepared for analysis within 48 hours of sample collection.
- Non-cohesive Granular Soils– If gravel or a mixture of gravel and fines cannot be transferred using the En Core® Sampler, the soil may be quickly sampled using a stainless steel spatula or scoop and placed in a sealed VOC vial and analyzed as soon as possible. In this case, it is recommended to use a mobile laboratory to analyze samples as soon as they are collected. Caution should be taken in the interpretation of these results since loss of VOCs is likely due to the sampling method and the non-cohesive nature of the soil being sampled.
- Cemented Soil– If the soil requiring sampling is cemented in a manner that the En Core® Sampler can not be used, subsamples of the soil may be sampled by fragmenting a larger portion of the material using a clean spatula or chisel to generate a fragment that can be placed in a VOC vial. Care should be taken when transferring the aggregate to the sample container to prevent compromising the sealing surfaces and threads of the container. Caution should be taken in the interpretation of these results since loss of VOCs may occur during generation of the aggregate sample.

4.0 DEFINITIONS

Accuracy – The degree of agreement between an observed value and a true value. Accuracy includes a combination of random error (precision) and systematic error (bias) components which are due to sampling and analytical operations; a data quality indicator.

Action Levels – The numerical value specified that causes the decision maker to choose one of the alternative actions (e.g., compliance or noncompliance). It may be a regulatory threshold standard, such as a Maximum Contamination Level, a risk-based concentration level, a technological limitation, or a reference-based standard. The action level is specified during the planning phase of a data collection activity.

Analyte - A chemical component of a sample to be determined or measured.

Bias – The systematic or persistent distortion of a measurement process which causes errors in one direction (i.e., the expected sample measurement is different than the sample's true value.

Cohesive Soil – Soil that possess some resistance to deformation because of the surface tension present in the water films. For example, wet clays can be molded into various shapes without breaking and will retain these shapes. Gravels or a mixture of gravel and fines that can not be easily obtained or transferred using coring tools are not cohesive and are called non-cohesive.

Contaminant of Potential Concern - Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

Data Quality Objectives – Qualitative and quantitative statements derived from the DQO process that clarify study objectives, define the appropriate type of data to collect, determine the most appropriate conditions from which to collect data, and specify the tolerable probabilities of making a decision error. These statements are used as the basis for establishing the type, quality, and quantity of data needed to support decisions.

Matrix Spike (MS) - An aliquot sample with known quantities of compounds (target analytes) that is mixed with a field sample and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery. The sample provides information on the target analyte stability and loss due to matrix interference and volatility after collection and during transport, storage, sample preparation and analysis.

Matrix Spike Duplicate (MSD) - A second aliquot of the same compounds as the matrix spike that is spiked into a duplicate field sample in order to verify the precision and accuracy of the results of the matrix spike.

Sampling – The process of obtaining samples and/or measurements of a subset of population units from the population. Proper sampling techniques must be employed to obtain samples that are representative of actual site conditions.

Target Analyte – The element, compound, or class of compounds detected and quantitated through the analytical measurement process.

Test Method – An adoption of a scientific technique for a specific measurement problem, as documented in a SOP.

Volatile Organic Compounds – Chemicals that have a low boiling point, evaporate easily, and contain hydrogen (H), carbon (C), and possibly other elements.

5.0 REFERENCES

Naval Facilities Engineering Service Center (NFESC), 1999, Navy Installation Restoration Chemical Data Quality Manual, September.

United States Environmental Protection Agency (EPA), 1997, Test Methods for Evaluation Solid Wastes, SW-846, Update III.

United States Environmental Protection Agency (EPA), 1999 Memorandum, Regional Interim Policy for Determination of Volatile Organic Compound (VOC) Concentrations in Soil and Solid Matrices.

United States Environmental Protection Agency (EPA), 1994, Guidance for The Data Quality Objectives Process, USEPA QA/G-4

6.0 APPARATUS AND MATERIALS

- Stainless steel spatula, scoop or knife.
- En Core® Sampler T-Handle and/or En Core® Sampler Extrusion Tool.
- Disposable En Core® Sampler and En Core® Sampler bag (labeled zipbag).
- Decontamination supplies, including a plastic tarp.
- Ice chest and wet ice (double bagged).
- Paper towel.
- Field Logbook.
- Soil Sample Collection Log forms.
- Chain-of-custody forms; sample labels, and custody seals.

7.0 PROCEDURE

This procedure addresses the specific activities to collect soil samples for VOC analyses (any volatile organic compound). The sampling protocol described below focuses on the use of a coring device (En Core® Sampler) that also serves as a shipping container.

7.1 Review of SAP or Work Plan

In preparation for a sampling effort involving the collection of soil samples for VOC analyses (TPH-gasoline and/or VOCs) at a given site, the Project Manager shall meet with the designated field personnel in charge of collecting the samples to review the site SAP and convey the following information:

- Access requirements (e.g., permission of owner, locked gates, road conditions).
- Identification number(s) of the areas to be sampled.
- Specific sample locations and sample identification strategy.
- Soil type being sampled, if known and any special considerations.
- Selected VOC sampling procedure (En Core® Sampler versus preservation).

- The potential use of a mobile lab (instant on-site analyses) and selection of confirmation samples using an En Core® Sampler to the fixed-based laboratory.
- Anticipated number of environmental samples and QC samples to meet project DQOs.
- Sample volume requirements (5 grams versus 25 grams) and/or En Core® Samplers needed by the contracted laboratory. The 25-gram sampler is typically used when Toxicity Characteristic Leaching Procedure (TCLP) and other leaching tests [i.e., synthetic precipitation leaching procedure (SPLP) and waste extraction test (WET)] are required.
- Required Field Logbook entries and any supporting documentation.
- Type of equipment needed for the scheduled sampling activity.

7.2 Sample Collection

The following procedure is designed to provide detailed information in the collection of soil samples using the En Core® Sampler. For a diagram of the sampling device, refer to the Manufacturer's Instructions (Attachment 1)

1. Label all sample pouches with the sample identification scheme indicated in the SAP.
2. Before taking the samples, hold coring device and push the plunger rod down until small o-ring rests against tabs. Depress the locking lever and place coring body plunger end first, into open end of T-handle, aligning the slots on the coring body with the locking pins in the T-handle. Twist coring body clockwise to lock pins in slots. Make sure sampler is locked in place.
3. Immediately before sampling, remove approximately half inch of soil from the exposed surface soil with a clean spatula, scoop, or knife. When inserting a clean coring tool into a fresh surface for sample collection, air should not be trapped behind the sample. This procedure will ensure that a fresh exposed surface is sampled.
4. Turn the T-Handle with the T up and coring down. Using the T-Handle, push sampler into soil until coring body is completely full. The coring body will be full when the small o-ring is centered in the T-Handle viewing hole. Remove sampler from soil sleeve and quickly wipe the coring body exterior to ensure a tight seal.
5. Cap the coring body while it is still on T-Handle. Push and twist cap over bottom until grooves on locking arms seat over ridge on coring body. Cap must be sealed to seal sampler.
6. Remove the capped sampler by depressing locking lever on the T-Handle while twisting and pulling sampler from T-Handle. Lock plunger by rotating extended plunger rod fully counterclockwise until wings rest firmly against tabs.
7. Insert the sampler into the sealable/labeled pouch and immediately place samples in a cooled (4°C) ice chest.

8. Collect field QC samples in accordance with the SAP requirements. A minimum of 3 En Core® Samplers are needed for each sample. A total of 9 En Core® Samplers are needed if collecting sample for MS/MSD.
9. Samples must be analyzed or frozen within 48 hours. Samples that are frozen shall be analyzed within 7 days to meet holding time requirements. Sampler should not be frozen below -20°C due to potential problems with tool seals and the loss of VOCs upon sample thawing.
10. Record laboratory and field identification numbers in the Soil Sample Collection form. Chain of custody forms will be completed with the laboratory identification number only so QC samples are submitted "blind" to the laboratory. .

8.0 DOCUMENTATION

Document all procedures and equipment used during soil sampling in the Field Logbook or appropriate soil sample collection form. Recorded field data shall include:

- Soil type and any relevant visual observations (i.e., stains).
- Inability to collect a representative sample.
- Sample collection date and times.
- Any observation that may impact data interpretation.

9.0 ATTACHMENTS

1. En Core® Sampler Manufacturer's Instructions

RICHARD BRADY AND ASSOCIATES

STANDARD OPERATING PROCEDURE

SOIL SAMPLING PROCEDURE FOR VOLATILE ORGANICS USING THE EnCore® SAMPLER

ATTACHMENT 1

EnCore® SAMPLER MANUFACTURER'S INSTRUCTIONS

Disposable
En Core® Sampler

En Novative Technologies, Inc.
1241 Bellevue Street
Green Bay, WI 54302
Phone: 920-465-3960 • Fax: 920-465-3963
Toll Free: 888-411-0757
www.ennovativetech.com

Sampling Procedures

Using The En Core® T-Handle

NOTE:

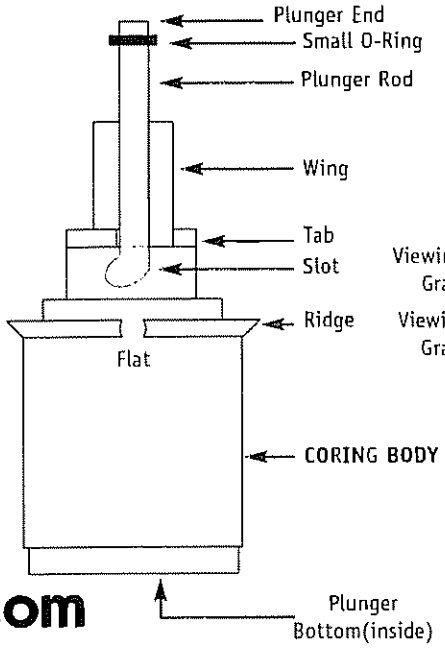
1. En Core® Sampler is a SINGLE USE device. It cannot be cleaned and/or reused.

2. En Core® Sampler is designed to store soil. Do not use En Core Sampler to store solvent or free product!

3. En Core® Sampler must be used with En Core® T-Handle and/or En Core® Extrusion Tool exclusively. (These items are sold separately.)

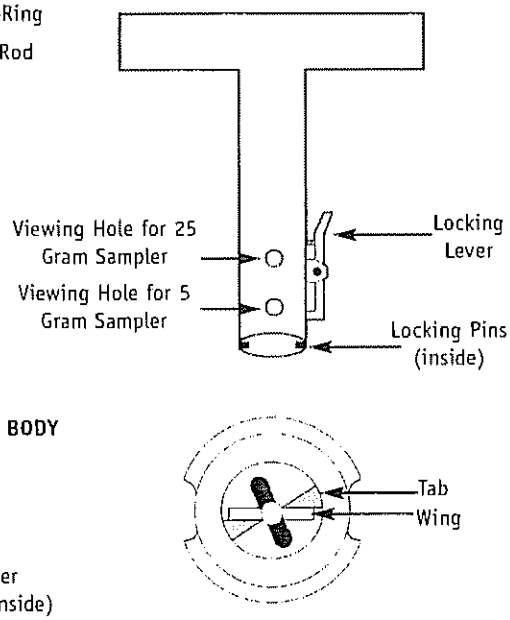
En Core®

Top



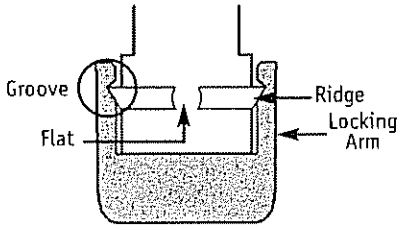
Bottom

En Core® T-Handle



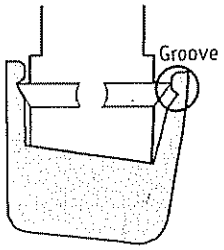
Sampler Correctly Capped

(Locking arm grooves seated over coring body ridge)



Sampler Incorrectly Capped

(Cap apperars crooked; locking arm grooves not fully seated over coring body ridge)



BEFORE TAKING SAMPLE:

1. Hold **coring body** and push **plunger rod** down until **small o-ring** rests against **tabs**. This will assure that plunger moves freely.

2. Depress **locking lever** on En Core T-Handle. Place coring body, **plunger end first,** into open end of T-Handle, *aligning the (2) **slots** on the coring body with the (2) **locking pins** in the T-Handle.* Twist coring body clockwise to lock pins in slots. Check to ensure Sampler is locked in place. Sampler is ready for use.

TAKING SAMPLE:

3. Turn T-Handle with T-up and coring body down. This positions plunger bottom flush with bottom of coring body (ensure that plunger bottom is in position). Using T-Handle, push Sampler into soil until coring body is completely full. When full, small o-ring will be centered in T-Handle **viewing hole**. Remove Sampler from soil. Wipe excess soil from coring body exterior.

4. Cap coring body while it is still on T-handle. *Push* **cap** over **flat** area of **ridge** *and twist* to lock **cap** in place. **CAP MUST BE SEATED TO SEAL SAMPLER (see diagram)**.

PREPARING SAMPLER FOR SHIPMENT:

5. Remove the capped Sampler by depressing locking lever on T-Handle while twisting and pulling Sampler from T-Handle

6. Lock plunger by rotating extended plunger rod fully counter-clockwise until **wings** rest firmly against tabs (see plunger diagram).

7. Attach completed tear-off label (from En Core Sampler bag) to cap on coring body.

8. Return full En Core Sampler to zipper bag. Seal bag and put on ice.

Disposable En Core® Sampler

EXTRUSION PROCEDURES

USING THE En Core® EXTRUSION TOOL

CAUTION! Always use the Extrusion Tool to extrude soil from the En Core Sampler. If the Extrusion Tool is not used, the Sampler may fragment, causing injury.

1. Use a pliers to break locking arms on cap of En Core Sampler. Do not remove cap at this time. **(CAUTION: Broken edges will be sharp.)**

2. To attach En Core Sampler to En Core Extrusion Tool: Depress locking lever on Extrusion Tool and place Sampler, plunger end first, into open end of Extrusion Tool, aligning slots on coring body with pins in Extrusion Tool. Turn coring body clockwise until it locks into place. Release locking lever.

3. Rotate and gently push Extrusion Tool plunger knob clockwise until plunger slides over wings of coring body. (When properly positioned plunger will not rotate further.)

4. Hold Extrusion Tool with capped Sampler pointed upward so soil does not fall out when cap is removed. To release soil core, remove cap from Sampler and push down on plunger knob of En Core Extrusion Tool. Remove and properly dispose of En Core Sampler.

Warranty and Disclaimers

IMPORTANT: FAILURE TO USE THE EN CORE SAMPLER IN COMPLIANCE WITH THE WRITTEN INSTRUCTIONS PROVIDED HEREIN VOIDS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

PRINCIPLE OF USE. The En Core Sampler Cartridge System is a volumetric sampling system designed to collect, store and deliver a soil sample. The En Core Sampler comes in two sizes for sample volumes of approximately 25 or 5 grams. There are four components: the cartridge with a movable plunger; a cap with two locking arms; a T-handle (purchased separately); and an extrusion handle (purchased separately). NOTE: The En Core Sampler is designed to store soil. It is not designed to store solvent or free product.

The soil is stored in a sealed headspace-free state. The seals are achieved by three special Viton® * o-rings, two located on the plunger and one on the cap of the Sampler. At no time and under no condition should these o-rings be removed or disturbed.

QUALITY CONTROL. The cartridge is sealed in an airtight package to prevent contamination prior to use. Due to the stringent quality control requirements associated with the use of this system, the disposable cartridge is designed to be used only once.

WARRANTY. En Novative Technologies, Inc. ("En Novative Technologies") warrants that the En Core Sampler shall perform consistent with the research conducted under En Novative Technologies' approval, within thirty (30) days from the date of delivery, provided that the Customer gives En Novative Technologies prompt notice of any defect or failure to perform and satisfactory proof thereof. THIS WARRANTY DOES NOT APPLY TO THE FOLLOWING, AS SOLELY DETERMINED BY EN NOVATIVE TECHNOLOGIES: (a) Damage caused by accident, abuse, mishandling or dropping; (b)Samplers that have been opened, taken apart or mishandled; (c)Samplers not used in accordance with the directions; and (d)Damages exceeding the cost of the sampler. Seller warrants that all En Core Samplers shall be free from defects in title. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL, WRITTEN, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING ANY INFORMATION PROVIDED BY SALES REPRESENTATIVES OR IN MARKETING LITERATURE. IMPLIED WARRANTIES OF FITNESS AND MERCHANTABILITY SHALL NOT APPLY. En Novative Technologies' warranty obligations and Customer's remedies, except as to title, are solely and exclusively as stated herein.

LIMITATION OF LIABILITY. IN NO EVENT SHALL EN NOVATIVE TECHNOLOGIES BE LIABLE FOR ANTICIPATED PROFITS, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF REVENUE, DOWN TIME, REMEDIATION ACTIVITIES, REMOBILIZATION OR RESAMPLING, COST OF CAPITAL, SERVICE INTERRUPTION OR FAILURE OF SUPPLY, LIABILITY OF CUSTOMER TO A THIRD PARTY, OR FOR LABOR, OVERHEAD, TRANSPORTATION, SUBSTITUTE SUPPLY SOURCES OR ANY OTHER EXPENSE. DAMAGE OR LOSS, INCLUDING PERSONAL INJURY OR PROPERTY DAMAGE. En Novative Technologies' liability on any claim of any kind shall be replacement of the En Core Sampler or refund of the purchase price. En Novative Technologies shall not be liable for penalties of any description whatsoever. In the event the En Core Sampler will be utilized by Customer on behalf of a third party, such third party shall not occupy the position of a third-party beneficiary of the obligation or warranty provided by En Novative Technologies, and no such third party shall have the right to enforce same. All claims must be brought within one (1) year of shipment, regardless of their nature.

En Novative Technologies, Inc.
1241 Bellevue Street
Green Bay, WI 54302
Phone: 920-465-3960 • Fax: 920-465-3963
Toll Free: 888-411-0757
www.ennovativetech.com

* Viton® is a registered trademark of DuPont Dow Elastomers.

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STANDARD OPERATING PROCEDURE

ENVIRONMENTAL SOIL SAMPLING

SOP NUMBER: T-006

REVISION NUMBER: 3

REVISION DATE: September 30, 2009

REVIEW DATE: July 16, 2010

Prepared by: _____ *September 30, 2009*
Jason Williams *Date*

Approved by: _____ *September 30, 2009*
Jesse MacNeill - Quality Assurance Manager *Date*

Approved by: _____ *September 30, 2009*
Tim Shields - Program Manager *Date*

BRADY

3710 Ruffin Road
San Diego, CA 92123

TABLE OF CONTENTS

RICHARD BRADY AND ASSOCIATES
STANDARD OPERATING PROCEDURE

ENVIRONMENTAL SOIL SAMPLING

1.0 PURPOSE

This Standard Operating Procedure (SOP) provides direction and establishes guidelines and procedures for field personnel collecting soil samples for environmental laboratory chemical analysis. This SOP is not intended to apply to every situation that may be encountered, nor is intended to replace thorough training and reading of reference materials.

2.0 BACKGROUND

Responsible parties and regulatory agencies make decisions about protecting human health and the environment from chemicals that may have been released during historic or current site activities. Chemical analysis of soil samples is often one source of information used in making environmental decisions. Soil sampling may be used in conjunction with various methods of subsurface investigations using various techniques.

3.0 APPLICABILITY

Soil sampling activities are applicable but not limited to activities associated with site construction, site demolition, underground storage tank removal, pipeline removal, site investigations, and remedial activities. This SOP is applicable to all soil sampling activities.

4.0 DEFINITIONS

Analyte - A chemical component of a sample to be determined or measured.

Analytical (or Testing) Method - A specification for sample preparation and instrumentation procedures or steps that must be performed to estimate the quantity of analyte in a sample.

Auger – A device for sampling subsurface soil.

Chain-of-custody - A protocol to insure the integrity of samples and resulting analytical results. Written forms indicating the date and time of transfer (e.g., from a sampler to the lab) are used. The procedure accounts for the whereabouts and handling of a sample and data from collection to final determination.

Drive sampler - A sample device that utilizes a hand held slide hammer to drive a six inch barrel to shallow subsurface depths. Typically used when collecting samples with a hand auger.

Encore sampler – One of several specific types of sampling devices for collecting samples for analysis for Volatile Organic compounds (VOCs) in accordance with EPA test method 5035/8260.

Field Log book – A project-specific record of information in a bound field notebook gathered by field personnel.

Hand auger – A small manual auger used fro shallow subsurface sample borings

Hollow-stem auger – A small-diameter (typically 6- to 12-inch) drilling technique commonly used for collecting soil samples and installing monitoring wells.

Matrix - The sample medium in which analytes of interest are tested. The media in which analytes are tested includes water, soil and solids.

Piston-type sampler - Sampling device used to collect soil samples at a discrete depth when a piston is released to allow soil to enter the sampler. The sampler is typically lined with 21" (three-6", and one-3") of brass or stainless steel tubing. It does not spilt or break apart, the soil sample, inside the tubing, is carefully extruded from the sampler. Piston-type samplers are typically used with direct-push technology.

SAP – Sampling and Analysis Plan

SCAPS – Site Characterization and Analysis Penetrometer System. A system to obtain real time, subsurface assessment data on soil and chemical characteristics using a direct-push soil probe. Soil samples can also be collected using a direct-push piston-type sampler.

Split-barrel/spoon sampler – One of several specific types of sampling devices for retrieving representative soil samples from discrete depths. Use of these samplers requires the lining the interior of the sampler with appropriate sampling tubes, usually brass or stainless steel.

VOC - (Volatile Organic Compound). Chemicals that have a low boiling point and evaporate easily containing hydrogen (H), carbon (C), and possibly other elements.

Underground utilities - Include, but are not limited to, utilities (sewer, telephone, fuel, electric, water, and other product lines), tunnels, shafts, vaults, foundations, and other underground fixtures or equipment that may be encountered during excavation operations.

5.0 REFERENCES

Navy Installation Restoration Laboratory Quality Assurance Guide, Naval Facilities Engineering Service Center (NFESC), Interim Guidance Document (Feb 1996).

Navy/Marine Corps Installation Restoration Manual, Naval Facilities Engineering Services Command (NFESC) (February 1997).

San Diego County, Department of Environmental Health (DEH), Site Assessment and Mitigation Program (DEH-SA/M), Site Assessment Manual (2004).

California Department of Toxic Substances Control, Hazardous Materials Laboratory, User's Manual, Revision 12, January 2001.

CCR Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.20(c).

EPA, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Revision 5, April 1998.

County of San Diego, Department of Environmental Health, Land & Water Quality Division, Site Assessment and Mitigation Program (SD DEH). Site Assessment and Mitigation Manual. http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html (This manual is updated yearly.)

6.0 APPARATUS AND MATERIALS

Select and assemble the types of equipment, instruments, and supplies necessary to perform the scope of work in accordance with the project specifications. A suggested checklist of apparatus and materials is included as Attachment A.

7.0 SOIL SAMPLE PROCEDURES

This procedure addresses the specific activities to be performed to accomplish a soil sampling event, including review of the Sampling and Analysis Plan (SAP) and general sample collection procedures, preparation for a sampling event by identifying necessary equipment, supplies and field documentation requirements.

7.1 Responsibilities

Project Manager (PM): The PM is responsible for ensuring that Richard Brady & Associates field personnel have been trained in the use of this procedure and for verification that soil sampling activities are performed in compliance with the Work Plan and this SOP.

Physical Science Technician (PST): The PST is responsible for compliance with this SOP including collection of samples, containerization of samples, and documentation.

7.2 Review of Sampling and Analysis Plan

In preparation for a soil sampling event at a given site, Richard Brady & Associates staff will review the site Sampling and Analysis Plan (SAP) and identify the following information:

- Identification number(s) of samples to be collected,
- Locations of the sample points,
- Location access requirements (e.g., permission of owner, locked gates, road conditions),
- Field and analytical parameters to be tested,
- Type and number of sample containers needed,
- Sample preservation methods,
- Volume of samples required for analysis,

- Type and number of QA/QC samples to be collected (e.g., duplicates, splits, and blanks), and
- Type of equipment needed for the scheduled sampling activity.

A location map shall be provided for use in the field. Copies of sampling specifications shall also be provided for field reference (if necessary).

Field information and data obtained during the sampling event shall be recorded in a logbook that is dedicated to the project.

7.3 Equipment and Supplies

Richard Brady & Associates staff shall plan for the sampling event by assessing, selecting, and assembling the types of equipment, instruments, and supplies necessary to perform the scope of work. Prior to going to the field, instrumentation shall be assembled, calibrated (if applicable), and tested. See Attachment 1.

7.4 General Soil Sampling Procedures

- Determine sampling locations and depths. Determining these locations depends on the nature of the sampling. In most cases, sample locations and depths will be determined prior to field mobilization and outlined in the site-specific SAP.
- After sample locations have been determined, penetrate the existing surface with sampling device; the depth will depend on the circumstances.
- When sample depth is attained, push/hammer sample (depending on sample method), until reaching undisturbed soil.
- If the soil is potentially impacted with hydrocarbons, it is usually desirable to obtain field organic vapor readings. After removing and breaking apart the sampler, collect a representative soil sample and place in a suitable container, such as a Ziplock bag, and record the result from the organic vapor analyzer (OVA).
- Collect representative soil samples in accordance with the SAP, ensuring correct sample container, preservation, labeling, storage, packing, and conveyance.
- Record the sampling information on the site plan, soil sample log, and a chain of custody form. Collect sample location information in accordance with the SAP, which may call for GPS or other location reference.
- Place the soil samples in a cooler packed with ice packets for cold storage pending transport to the environmental laboratory.
- The Project Manager is responsible for monitoring and documenting observations made during excavation activities in a field log. At a minimum the following information should be recorded prior to excavation activities: date, arrival time, site location, weather, onsite staff, any contractors (names and phone numbers), and the type and quantity of

equipment. During sampling activities the following information should be logged: start and stop time and location of all activities, blow counts performed to advance the sampler through each 6-inchinterval, description of the lithology encountered in accordance with the Unified Soil Classification System, odors and/or staining observed, depths and times which samples were taken, OVA readings (if taken), depth to water (if applicable), and problems causing delays during any activities.

- All sampling equipment should be decontaminated in accordance with the Richard Brady & Associates SOP T-001 Equipment Decontamination between all samples collected.

7.5 Subsurface Sampling Using a Split-barrel/spoon Sampler

Split-barrel/spoon samplers can be various lengths and are typically used for deeper samples with the hollow-stem auger. The following procedures provide directions for each step for this method of sampling.

- Decontaminate the split-barrel sampler and all other equipment.
- Begin augering to specified sample depths following SOP T-004 Hollow Stem Auger Drilling.
- After augering to a depth above the specified sample interval, stop augering and hammer the split-barrel sampler to the desired sample depth.
- Remove the sampler, break the sampler apart by unscrewing the ends and retrieve the tubing containing the sample.
- Collect the samples from the tubing depending on the preferred analysis. If the analysis is for VOCs, the SOP T-003 for Soil Sampling Procedure for Volatile Organics using the En Core® Sampler should be followed.
    - The stainless steel or brass tubing can be used for some other analysis or kept as a back-up sample. If this is the case, the tube ends should be wrapped in Teflon sheets and capped. Sealing the caps with silicon tape is optional. Do not use adhesive tape to seal the caps.
- The sampler and all equipment used to collect the sample should then be decontaminated following the SOP T-001 Equipment Decontamination.
- Repeat these steps until the specified number of samples have been collected from each boring.

7.6 Subsurface Sampling Using a Hand Auger (with drive sampler)

Hand augering may be used to collect soil samples from shallow depths when larger drilling equipment is not warranted. The collection of soil samples using a hand auger is typically used in conjunction with a drive sampler. The following procedures provide the minimum direction

for each step of a soil sampling activity using hand auger equipment in conjunction with a drive sampler.

- Decontaminate the hand auger, drive sampler barrel and other equipment.
- Hold the auger vertical, apply pressure, and rotate in a clockwise direction through the soil.
- When the auger bucket is full of soil, remove it from the boring and transfer the contents to the plastic sheeting located around or next to the bore hole.
- Repeat previous two steps until achieving a depth above the desired sample depth.
- Using the drive sampler, hammer the sample barrel (loaded with specified tubing) until it has been driven to the desired depth.
- Remove the sample by gently tapping the hammer in an upwards motion as to not remove the soil sample from the sample barrel.
- Once the sample has been removed from the boring removed the tubing from the barrel by unscrewing the end and carefully extruding the sample.
- The hand auger, drive sampler, and all other equipment used to take the sample should then be decontaminated following the SOP T-100 Equipment Decontamination.
- Repeat these steps until the specified number of samples have been collected from the boring or until a depth is reached at which other means of collecting samples are necessary.

7.7 Subsurface Sampling Using SCAPS

Collecting soil samples using SCAPS utilizes a hydraulic press to push a piston-type sampler to the desired sample depth. This method is extremely precise in collecting samples from specific depths. The following procedure provides each step of a soil sampling activity using the SCAPS direct-push piston-type sampler.

- Decontaminate the piston-type sampler (must be taken apart) and all other equipment that comes in direct contact with the sample.
- The SCAPS unit is aligned above the specific sample location.
- The piston-type sampler is pushed to a depth above the desired sample depth.
- The piston is released using a wire cable, and the sampler is pushed to the desired sample depth. The typical sample interval is 18” (1.5’).
- Once the sample has been taken, the piston-type sampler is removed by retracting the hydraulic press.
- The sample is removed by carefully extruding the tubing from the sampler.

- The piston-type sampler and all other equipment used to take the sample should then be decontaminated following the SOP T-100 Equipment Decontamination.
- Repeat these steps until the specified number of samples have been collected from the push.

7.8 Subsurface Sampling during Trench Excavation Activities

Soil samples are collected from trench excavation sidewalls and bottom at a spatial intervals and depth specified in the project work plan or field sampling plan to accomplish specific project goals. The samples are collected by hand directly from excavation equipment. This is done specifically to eliminate hazards associated with having personnel enter potentially unstable excavations.

- Soil samples are immediately collected as soon as the excavation equipment is withdrawn from the hole. Soil is initially collected by placing approximately four cubic inches of soil from the excavator bucket into a decontaminated stainless steel bowl. The sample is then obtained by packing a laboratory-supplied sample container with soil, being careful to leave no headspace in the container. The soil in the bowl will not be mixed and as many soil horizons as possible will be sampled to obtain as representative a sample as possible. All soil sample containers are immediately sealed capped with the supplied lid, and are labeled with the project and sample number, collection depth, date, and time. This information is then entered on the chain of custody document. The sample is stored at the proper preservation temperature in an ice chest packed with double-bagged wet ice (4° C environment) until analysis. In the case of Encore samples, the sample is collected using the Encore sampling SOP T-003.
- Residual sample soil not placed in containers for laboratory analysis may be screened for combustible vapors using a combustible gas indicator (CGI) or equivalent instrument. For each vapor-screening event, soil is added to a 6-inch long by 2.5-inch diameter sample insert until it is approximately 1/3 full. The insert is capped, shaken, and penetrated with a probe inserted through a small opening in the cap. For hydrocarbon impacted soils, use an organic vapor analyzer (OVA) and place the probe inside the borehole and record the flame ionization detector (FID) reading taken after approximately 20 seconds and record the value in the boring logs.

7.9 Stockpile Soil Sampling

Generate a 2-dimensional grid to represent the stockpile, and select sample locations at random. Third dimension grid points (depths) are also randomly selected at each 2-dimensional grid location. Undisturbed samples are to be collected using a hand-auger / hammer driven system. A schematic of the contoured and gridded stockpiles with sample locations is shown in a figure in the final report.

7.10 Demobilization/Site Restoration

After the excavation has been backfilled:

- Repair surfaces to approximate pre-drilling conditions;
- Repair all surface structures as per the contract;
- Identify and isolate with barricades remaining hazards, if any;
- Containerize, label, and manage investigative derived waste,

8.0 DOCUMENTATION

Document all procedures, observations, and equipment used during excavation and sampling activities on the field log and forms related to the project.

9.0 ATTACHMENTS

1. Equipment Supply Checklist

RICHARD BRADY AND ASSOCIATES

STANDARD OPERATING PROCEDURE

ENVIRONMENTAL SOIL SAMPLING

ATTACHMENT 1

EQUIPMENT SUPPLY CHECKLIST

EQUIPMENT AND SUPPLY CHECKLIST

- ☐ Work Plan or Sampling and Analysis Plan
- ☐ Health and Safety Plan
- ☐ Underground Service Alert (USA) number
- ☐ Personal safety gear:
  - ☐ traffic vest,
  - ☐ steel toe shoes,
  - ☐ work gloves
  - ☐ earplugs,
  - ☐ sunscreen,
  - ☐ hardhat,
  - ☐ drinking water
  - ☐ Gloves (e.g., powder-free nitrile)
- ☐ Warning signs, barricades, cones, and yellow caution tape
- ☐ Field log (notebook and forms)
- ☐ Log forms
- ☐ Pens
- ☐ Hand auger
- ☐ Shovel and other various hand tools
- ☐ Buckets
- ☐ Brushes
- ☐ Liquinox
- ☐ Deionized water
- ☐ Deionized water sprayer
- ☐ Gas and vapor monitoring equipment
- ☐ Utility mark out report
- ☐ Underground Locating Service (ULS)
- ☐ Drilling permit issued by local government agency
- ☐ Digging Permit issued by facility (e.g., Public Works Center)
- ☐ Safety fence and flashing lights for night-time vehicle or pedestrian traffic
- ☐ Soil logging equipment
- ☐ Chain of Custody forms
- ☐ Sample forms
- ☐ Sampling trowel, scoop, spoon, etc. (not too big, expect 4 oz jars)
- ☐ Soil sampling equipment
- ☐ Teflon sheets for sample sleeves
- ☐ Sample jars
- ☐ Tool box
- ☐ Hammer
- ☐ Vise
- ☐ Baggies, large and small
- ☐ Sample labels
- ☐ Sharpie pens
- ☐ Plastic sheets for sample prep

- ☐ Plastic sheeting (6 mil. Min.)
- ☐ Soil classification chart
- ☐ Color chart
- ☐ Hand lens
- ☐ Ice Coolers for samples
- ☐ Ice
- ☐ Visqueen
- ☐ Drum labels
- ☐ Clipboards
- ☐ Paint for marking out auger locations
- ☐ Water level indicator
- ☐ Survey equipment (e.g., GPS unit)
- ☐ Camera
- ☐ Trash bags
- ☐ Dustpan foxtail
- ☐ Two tables: one for sampling, one for drying samplers
- ☐ Large paper clamps/clips for windy days
- ☐ Ice Coolers for drinks (must be marked FOOD ONLY)
- ☐ Shade
- ☐ Chairs
- ☐ EnCore® sampling devise extractor (if applicable),
- ☐ Instrument for measuring organic vapor concentrations such as a photoionization detector (PID) and/or a flame ionization detector (FID),

NOTE: The SCAPS truck and support trucks should be equipped with all SCAPS specific equipment for collecting soil samples.

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STANDARD OPERATING PROCEDURE

SAMPLING AND ANALYSIS OF VOLATILE ORGANIC COMPOUNDS IN SOIL USING DIRECT PUSH SAMPLING AND DIRECT SAMPLING ION TRAP MASS SPECTROMETRY

SOP NUMBER: T-009

REVISION NUMBER: 02

REVISION DATE: April 6, 2010

REVIEW DATE: July 19, 2010

Prepared by: _____ *April 6, 2010*
William Davis *Date*

Approved by: _____ *April 6, 2010*
Jesse MacNeill - Quality Assurance Manager *Date*

Approved by: _____ *April 6, 2010*
Tim Shields - Program Manager *Date*

BRADY

3710 Ruffin Road
San Diego, CA 92123

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RICHARD BRADY AND ASSOCIATES
STANDARD OPERATING PROCEDURE

SOIL SAMPLING USING DSMITMS

1.0 INTRODUCTION

This Standard Operating Procedure describes the procedures and methods used to subsample soil collected by soil core sampling methods and analysis of these subsamples for volatile organic compounds (VOC) using direct sampling ion trap mass spectrometry (DSITMS). In summary, soil cores are immediately subsampled into 40 mL VOC vials containing either distilled water or methanol using procedures described in US EPA Method 5035 (1). The samples are then analyzed for VOC contaminants of concern by DSITMS using procedures described US EPA Method 8265 (2).

2.0 SOIL SUBSAMPLING PROCEDURES FOR LOW LEVEL VOC CONTAMINATION

The procedures described here are those detailed in US EPA Method 5035 Sections 6.1.1 and 6.2.1 for the sampling of soils containing low level VOC contamination. The procedures have been modified for use with the 40 mL vial sparge interface of the DSITMS used to perform the VOC determination by EPA Method 8265.

- It is very important to subsample soil from the soil core as soon as possible once the soil is retrieved from the subsurface to avoid volatile loss of contaminants of concern. Therefore, all equipment for sub-sampling should be prepared before the soil sample is collected from the subsurface.

- Prepare in advance as many vials as will be needed during any particular sampling event (one soil core or numerous discrete cores in continuous coring). Weigh empty labeled vial and record this as the vial weight. Prepare vials by adding approximately 20 mL distilled water to a 40 mL VOC vial. Replace cap, weigh and record the weight. This is the initial tare weight for this sample vial.

- Once a discrete soil core has been collected, using a plastic 10 mL syringe with the tip removed, sub-core approximately 5 mL of soil from the direct push soil core. Extrude the sub-sample into a 40 mL VOC vial containing 20 mL distilled water. Seal the vial and weight it immediately, record the weight. This weight it the tare plus soil weight.

Immediately open and fill the vial completely with distilled water. Reseal the vial insuring that

no air bubble is present in the sample vial. Weigh full vial and record weight, this is total weight. Note, if the soil is of a fined grained material that does not readily form a slurry, use a spatula to break the subsample up before filling the vial completely with distilled water.

- Place the vial in a container out of heat and sunlight. Please note that EPA Method 5035 indicates that the sample should be placed on ice for shipment to an off site laboratory. Since this procedure is intended for use when the DSITMS analysis by EPA Method 8265 is performed almost immediately, on site, the samples are not placed on ice.

3.0 SOIL SLURRY ANALYSIS BY DIRECT SAMPLING ION TRAP MASS SPECTROMETRY

The procedures described here are those detailed in US EPA Method 8265 Sections 11 and 12. This procedure describes the use of the 40 mL vial sparge interface for the analysis of soil slurries for VOC analytes.

- Calibrate the DSITMS for VOC contaminants of concern using the 40 mL vial sparge interface using distilled water. The DSITMS should be calibrated from 0 to 500 µg/L for each analyte of concern for the site to be investigated. The calibration curve should contain a minimum of 5 points but most often contains 7 points; 0, 4, 10, 20, 75, 250 and 500 µg/L. Single replicate analyses of each concentration are analyzed to establish the calibration curve. The above range is generally used but it may be modified based on the data quality objectives (DQOs) for a particular site. Follow procedures in US EPA Method 8265 Section 11.1.4 for the quantitative calibration of the DSITMS using the 40 mL vial sparge interface.

- Using the calibration curve established in 3.1, analyze a Performance Evaluation Standard (PES) as described in US EPA Method 8265 Section 11.3.3. PES are externally prepared standards used to evaluate the calibration and continuing system performance. If the PES analysis indicates system is not holding calibration (analysis does not meet QC acceptance criteria), take corrective action and recalibrate system as specified in the Quality Assurance Plan (QAP, Appendix A).

- Once the system has been calibrated and passed the PES, analyze a soil slurry sample by decanting a small amount of the aqueous sample from the 40 mL vial, discard the decanted water. Place the vial onto the 40 mL vial interface and purge the entire remaining sample slurry as described in US EPA Method 8265 Section 11.3.5.

- Continue to analyze samples as required to support site DQOs. Follow normal quality control procedures to analyze QC samples at frequencies described in the QAP.

- Calculate the concentration of the VOC analytes of concern detected in the sample using

the procedures detailed in US EPA Method 8265 Section 12.3. Please note that you must have recorded the vial weight, tare weight, tare plus soil weight and the total weight of the 40 mL vial in order to obtain the soil sample and total water weight for use in calculations described in US EPA Method 8265 Section 12.3.

- Normal quality control procedures for this method include initial calibration, continuing calibration check standards, PES, blanks and duplicate analyses. It should be noted that, since each analysis requires only about 3 minutes to complete, the level of QC sample analysis tends to be higher than most other analytical techniques used for VOC analysis.

4.0 Soil Sampling Procedures For High Level VOC Contaminants In Soil

The procedures described here are those detailed in US EPA Method 5035 Sections 6.1.3 and 6.2.2 for the sampling of soils containing high level VOC contamination.

- It is very important to subsample soil from the soil core as soon as possible once the soil is retrieved from the subsurface to avoid volatile loss of contaminants of concern. Therefore, all equipment for subsampling should be prepared before the soil sample is collected from the subsurface.

- Prepare in advance as many vials as will be needed during any particular sampling event (one soil core or numerous discrete cores in continuous coring). Prepare vials by adding approximately 10 mL methanol to a 40 mL VOC vial. Replace cap, weigh and record the weight. This is the initial tare weight for this sample vial.

- Once a discrete soil core has been collected, using a plastic 10 mL syringe with the tip removed, sub-core approximately 5 mL of soil from the direct push soil core. Extrude the sub-sample into a 40 mL VOC vial containing 10 mL methanol. Seal the vial and weight it immediately, record the weight. This weight it the tare plus soil weight.

- Place the vial in a container out of heat and sunlight. Please note that EPA Method 5035 indicates that the sample should be placed on ice for shipment to an off site laboratory. Since this procedure is intended for use when the DSITMS analysis by EPA Method 8265 is performed almost immediately, on site, the samples are not placed on ice unless the analysis will not be performed within 30 minutes of subsampling.

5.0 Analysis of Methanol Extracts By Direct Sampling Ion Trap Mass Spectrometry

The procedures described here are those detailed in US EPA Method 8265 Sections 11 and 12. This procedure describes the use of the 40 mL vial sparge interface for the analysis of soil

slurries for VOC analytes.

- Calibrate the DSITMS for VOC contaminants of concern using the 40 mL vial sparge interface using distilled water. The DSITMS should be calibrated from 0 to 500 µg/L for each analyte of concern for the site to be investigated. The calibration curve should contain a minimum of 5 points but most often contains 7 points; 0, 4, 10, 20 75, 250 and 500 µg/L. Single replicate analyses of each concentration are analyzed to establish the calibration curve. The above range is generally used but it may be modified based on the data quality objectives (DQOs) for a particular site. Follow procedures in US EPA Method 8265 Section 11.1.4 for the quantitative calibration of the DSITMS using the 40 mL vial sparge interface.

- Using the calibration curve established in 5.1, analyze a Performance Evaluation Standard (PES) as described in US EPA Method 8265 Section 11.3.3. PES are externally prepared standards used to evaluate the calibration and continuing system performance. If the PES analysis indicates system is not holding calibration (analysis does not meet QC acceptance criteria), take corrective action and recalibrate system as specified in the Quality Assurance Plan (QAP, Appendix A).

- Once the system has been calibrated and passed the PES, analyze a soil methanol extract sample by injecting 25 to 500 µL of the extract into a vial containing 40 mL of distilled water. Decant a few mLs of water from the vial discard the decanted water. Place the vial onto the 40 mL vial interface and purge the entire sample as described in US EPA Method 8265 Section 11.3.5. Adjust the volume of methanol extract up or down, if original dilution does not fall within the linear range of calibration.

- Continue to analyze samples as required to support site DQOs. Follow normal quality control procedures to analyze QC samples at frequencies described in the QAP.

- Calculate the concentration of the VOC analytes of concern detected in the sample using the procedures detailed in US EPA Method 8265 Section 12.3. Please note that you must have recorded the tare weight, the total weight of the 40 mL vial and the volume of methanol extract diluted in the 40 mL of distilled water in order to obtain the soil sample weight and extract dilution for use in calculations described in US EPA Method 8265 Section 12.4.6 and 12.4.7.

- Normal quality control procedures for this method include initial calibration, continuing calibration check standards, PES, blanks and duplicate analyses. It should be noted that, since each analysis requires only about 3 minutes to complete, the level of QC sample analysis tends to be higher than most other analytical techniques used for VOC analysis.

6.0 REFERENCES

US Environmental Protection Agency, Test Methods for Evaluation of Solid and Hazardous Wastes, SW 846 Method 5035, Washington, DC 1998.

US Environmental Protection Agency, Test Methods for Evaluation of Solid and Hazardous Wastes, SW 846, Method 8265, Washington, DC 2002.

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STANDARD OPERATING PROCEDURE

SAMPLING AND ANALYSIS OF VOLATILE ORGANIC COMPOUNDS IN WATER USING DIRECT PUSH SAMPLING AND DIRECT SAMPLING ION TRAP MASS SPECTROMETRY

SOP NUMBER: T-010

REVISION NUMBER: 03

REVISION DATE: September 30, 2009

REVIEW DATE: July 19, 2010

Prepared by: _____ *September 30, 2009*
William Davis *Date*

Approved by: _____ *September 30, 2009*
Jesse MacNeill - Quality Assurance Manager *Date*

Approved by: _____ *September 30, 2009*
Tim Shields - Program Manager *Date*

BRADY

3710 Ruffin Road
San Diego, CA 92123

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RICHARD BRADY AND ASSOCIATES
STANDARD OPERATING PROCEDURE

WATER SAMPLING USING DSMITMS

1.0 INTRODUCTION

This Standard Operating Procedure describes the procedures and methods used to sample water collected by sampling devices and analysis of these samples for volatile organic compounds (VOC) using direct sampling ion trap mass spectrometry (DSITMS). In summary, water collected using a sampling device is immediately subsampled into 40 mL VOC vials using procedures described in US EPA SW846 Chapter 4, Section 4.1.2. The samples are then analyzed for VOC contaminants of concern by DSITMS using procedures described US EPA Method 8265.

2.0 GROUNDWATER SAMPLING PROCEDURES

The procedures described here are those detailed in US EPA SW846 Chapter 4, Section 4.1.2 (1) for the sampling of water containing VOC contamination. The procedures have been modified for use with the 40 mL vial sparge interface of the DSITMS used to perform the VOC determination by EPA Method 8265.

- It is very important to sample groundwater from the sampling device as soon as possible once the sample is retrieved from the subsurface to avoid volatile loss of contaminants of concern. Therefore, all equipment for subsampling should be prepared before the sample is collected from the subsurface.

- Using a 40 mL VOC vial with a Teflon lined septum, gently fill the vial with the groundwater sample from the sampling device. Care should be taken to not create bubbling of the sample as this causes loss of the volatile contaminants of interest. Over fill the 40 mL VOC vial producing a positive meniscus. Carefully place the vial cap on the vial. Check to insure there are no bubbles in the sample. Empty and refill the vial if a bubble is found. A minimum of two replicate vials should be collected for each sampling location (plan view and depth).

- Place the vial in a container out of heat and sunlight. Please note that EPA SW846 Chapter 4, Section 4.1.2 indicates that the sample should be placed on ice for shipment to an off site laboratory. Since this procedure is intended for use when the DSITMS analysis by EPA Method 8265 is performed almost immediately on site, the samples are not placed on ice unless the analysis is to be performed later than 30 minutes after sample collection.

3.0 GROUNDWATER ANALYSIS BY DIRECT SAMPLING ION TRAP MASS SPECTROMETRY

The procedures described here are those detailed in US EPA Method 8265 Sections 11 and 12 (2). This procedure describes the use of the 40 mL vial sparge interface for the analysis of groundwater for VOC analytes.

- Calibrate the DSITMS for VOC contaminants of concern using the 40 mL vial sparge interface using distilled water. The DSITMS should be calibrated from 0 to 500 µg/L for each analyte of concern for the site to be investigated. The calibration curve should contain a minimum of 5 points but most often contains 7 points; 0, 4, 10, 20 75, 250 and 500 µg/L. Single replicate analyses of each concentration are analyzed to establish the calibration curve. The above range is generally used but it may be modified based on the data quality objectives (DQOs) for a particular site. Follow procedures in US EPA Method 8265 Section 11.1.4 for the quantitative calibration of the DSITMS using the 40 mL vial sparge interface.

- Using the calibration curve established in 3.1, analyze a Performance Evaluation Standard (PES) as described in US EPA Method 8265 Section 11.3.3. PES are externally prepared standards used to evaluate the calibration and continuing system performance. If the PES analysis indicates system is not holding calibration (analysis does not meet QC acceptance criteria), take corrective action and recalibrate system as specified in the Quality Assurance Plan (QAP, Appendix A).

- Once the system has been calibrated and passed the PES, analyze a groundwater sample by decanting a small amount of the aqueous sample from the 40 mL vial, discarding the decanted water. Place the vial onto the 40 mL vial interface and purge the entire remaining sample as described in US EPA Method 8265 Section 11.3.5 (2).

- Calculate the concentration of the VOC analytes of concern detected in the sample using the procedures detailed in US EPA Method 8265 Section 12.1.

- Continue to analyze groundwater samples as required to support site DQOs. Follow normal quality control procedures to analyze QC samples at frequencies described in the QAP.

- For sampling exceeding the linear calibration range, sample dilution should be performed using groundwater from the replicate vial for that sampling location. Depending on the estimated concentration from the first analysis, prepare a dilution from the replicate vial (generally from 0.25 to 0.001) using gas tight syringes and distilled water.

- Normal quality control procedures for this method include initial calibration, continuing calibration check standards, PES, blanks, matrix spikes and duplicate analyses. It should

be noted that, since each analysis requires only about 3 minutes to complete, the level of QC sample analysis tends to be higher than most other analytical techniques used for VOC analysis.

4.0 REFERENCES

US Environmental Protection Agency, Test Methods for Evaluation of Solid and Hazardous Wastes, SW 846, Chapter 4, Washington, DC 1998.

US Environmental Protection Agency, Test Methods for Evaluation of Solid and Hazardous Wastes, SW 846, Method 8265, Washington, DC 2002.

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SAP Attachment 2

Form Examples

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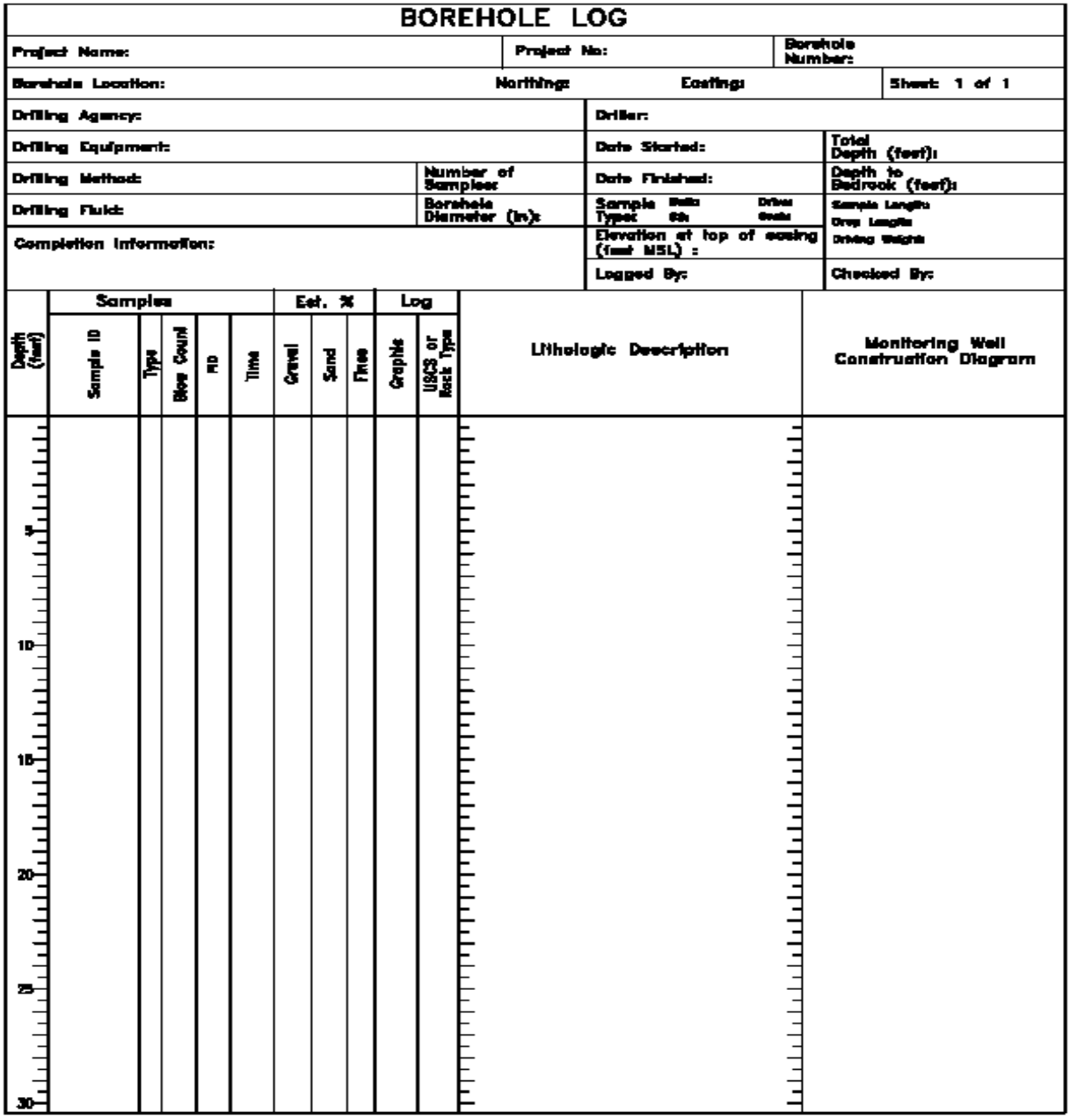

BOREHOLE LOG

Project Name:	Project No:	Borehole Number:	
Borehole Location:	Northing: Easting:		Sheet: 1 of 1
Drilling Agency:		Driller:	
Drilling Equipment:		Date Started:	Total Depth (feet):
Drilling Method:	Number of Samples:	Date Finished:	Depth to Bedrock (feet):
Drilling Fluid:	Borehole Diameter (in):	Sample Type: Split Spoon / Other / Grab	Sample Length / Drop Length / Driving Weight
Completion Information:		Elevation at top of casing (feet MSL) :	
		Logged By:	Checked By:

Depth (feet)	Samples: Sample ID	Type	Blow Count	PID	Time	Est. %: Gravel	Sand	Fines	Log: Graphic	USCS or Rock Type	Lithologic Description	Monitoring Well Construction Diagram
5												
10												
15												
20												
25												
30												

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WATER-LEVEL MEASUREMENTS FORM

Water-Level Measurements			Project and Job Number			Sheet No.	
Facility			Site		Monitored By: Checked By:		
Well ID Number	Date/ Time	Instrument Serial Number	Calibrated By	Reference Point Elevation (feet)	Depth To Water (feet)	Water-Level Elevation (feet)	Remarks

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WELL SAMPLING

PROJECT:
JOB NO.:

WELL NO.:
SITE:

PREPARED BY

Name: _____

Signature:_____

CHECKED BY

Name:_____

Signature:_____

PURGING CRITERIA: **3 Borehole Volumes**

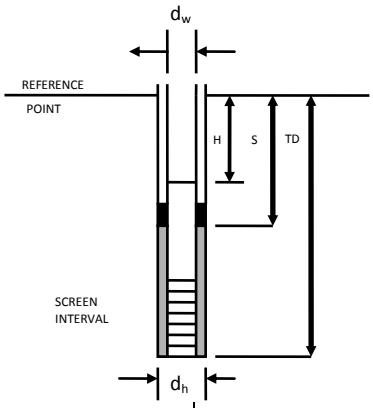
GROUNDWATER QUALITY PARAMETER STABILIZATION CRITERIA:

PH ±0.1; CONDUCTIVITY ±3%; TURBIDITY or DISSOLVED OXYGEN ±10%

REMARKS (include depth of pump inlet, if applicable):

.

BOREHOLE DIAMETER	d_h	=	_____feet
WELL CASING:			
INSIDE DIAMETER	d_wID	=	_____feet
OUTSIDE DIAMETER	d_wOD	=	_____feet
REFERENCE POINT:	TOC		
DEPTH TO:			
WATER LEVEL	H	=	feet
BASE OF SEAL	S	=	feet
TOP OF SCREEN		=	feet
BASE OF SCREEN		=	feet
BASE OF WELL	TD	=	feet
ESTIMATED FILTER PACK POROSITY	P	=	%



WELL VOLUME CALCULATION

CASING VOLUME (V_C)

$$V_C = \pi\left(\frac{d_w ID}{2}\right)^2 (TD - H) = \_\_ ft^3$$

FILTER PACK PORE VOLUME (V_F)

$$V_F = \pi\left[\left(\frac{d_h}{2}\right)^2 - \left(\frac{d_w OD}{2}\right)^2\right](TD - S \text{ or } H)(P) = \_\_ ft^3$$

(IF S < H, USE H. IF S > H, USE S)

TOTAL WELL VOLUME (VT)

VT = VC + VF = ft^3

$$ft^3 \times \frac{7.48 \text{ gallons}}{ft} = \text{gallons}$$

PURGE LOG					CUMULATIVE TOTAL REMOVED		WATER QUALITY PARAMETERS						
Date	Time Begun	Time Finished	GW Level	Water Removed	Gallons per Minute	Well Volumes	Turbidity (Visual or NTU)	pH	Temperature (°C)	Electrical Conductivity (mS/m)	Dissolved Oxygen (mg/L)	Salinity (%)	ORP

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BRADY

Field Sampling Technical Systems Audit

Project Name: _____
Date of Audit: _____
Auditor: _____
Audit No: _____

General:

A. Has the site exclusion zone been defined and secured?
SAT ____ UNSAT ____ N/A ____

B. Is site access log available and in use?
SAT ____ UNSAT ____ N/A ____

C. Is the Work Plan, including the SAP, available onsite and are personnel complying?
SAT ____ UNSAT ____ N/A ____

D. Has the Project Personnel Sign-Off Sheet (SAP Worksheet #4) been signed by the key personnel prior to the start of work on-site?
SAT ____ UNSAT ____ N/A ____

E. Are the appropriate and current SOPs available onsite?
SAT ____ UNSAT ____ N/A ____

F. Have the site emergency phone numbers and the medical facilities address and route map been posted?
SAT ____ UNSAT ____ N/A ____

LOGBOOKS

1) Are logbooks permanently bound and pre-paginated?
SAT ____ UNSAT ____ N/A ____

2) Are corrections to logbook entries made with a single line out of the incorrect entry, and has the correction been initialed by the person making the correction?
SAT ____ UNSAT ____ N/A ____

3) Is each sample or field measurement properly documented to facilitate timely, correct and complete analysis of data?
SAT ____ UNSAT ____ N/A ____

HEALTH & SAFETY

4) Has a daily Health & Safety meeting covering site-specific health hazards and required PPE been conducted?
SAT ____ UNSAT ____ N/A ____

5) Have all visible Health & Safety concerns been addressed (ex. slips, trips, or falls)?
SAT ____ UNSAT ____ N/A ____

6) Have the utility & geophysical clearances been completed prior to the start of intrusive work?
SAT ____ UNSAT ____ N/A ____

7) Is an organic vapor meter, a PID/FID, being used to monitor organic vapors during direct push operations?

SAT ____ UNSAT ____ N/A ____

8) Are the field instruments being used calibrated, and is the calibration recorded? (Record instrument serial numbers.)

SAT ____ UNSAT ____ N/A ____

SCAPS

9) Was the SCAPS pre-push calibration of the laser performed and documented?

SAT ____ UNSAT ____ N/A ____

10) Was the SCAPS cone& sleeve strain gauge calibration performed and documented?

SAT ____ UNSAT ____ N/A ____

11) Are the site location names being used consistently with respect to the SCAPS WinOCPT data files and the sample identification numbers?

SAT ____ UNSAT ____ N/A ____

SAMPLING & ANALYSIS

12) Does the onsite mobile laboratory have current state certification? Current SOPs for methods they are performing? Qualification and certifications for the mobile lab operator?

SAT ____ UNSAT ____ N/A ____

13) Verify that the physical parameters for each groundwater sample collected are recorded and are in range. (include conductivity, pH, and temperature)

SAT ____ UNSAT ____ N/A ____

14) Verify that the soil or groundwater sample is transferred directly into the appropriate sample container, labeled, and placed into an ice chest.

SAT ____ UNSAT ____ N/A ____

15) Do the sample labels affixed to each sample container have the following information: project name and number, sample ID, analysis to be performed, type of preservative, sample collector's initials, collection date and time, and special instructions?

SAT ____ UNSAT ____ N/A ____

16) Are sampling equipment, materials, tools, and field measurement devices being decontaminated before each use, and in accordance with SOP T-001?

SAT ____ UNSAT ____ N/A ____

17) Are equipment rinsate blanks collected by pouring deionized water over or through the sampling equipment after decontamination and prior to taking the next sample?

SAT ____ UNSAT ____ N/A ____

18) Is one equipment rinsate sample (equipment blank) collected for each day that non-disposable sample equipment is used?

SAT ____ UNSAT ____ N/A ____

19) Is equipment rinsate documentation complete with detail of the equipment used and the source water description (ex. Arrowhead Distilled, Lot No., etc.)?

SAT ____ UNSAT ____ N/A ____

20) Is one MS/MSD sample collected for every 20 environmental samples collected?

SAT ____ UNSAT ____ N/A ____

21) Are source blanks being collected from the same source of water used for equipment decontamination?

SAT ____ UNSAT ____ N/A ____

22) Is one groundwater field duplicate sample collected for every 10 groundwater samples collected?

SAT ____ UNSAT ____ N/A ____

23) Does each shipping container being sent to the fixed-base laboratory contain a temperature blank?

SAT ____ UNSAT ____ N/A ____

24) Does each shipping container being sent to the fixed-base laboratory contain the appropriate number of trip blank samples?

SAT ____ UNSAT ____ N/A ____

25) Are soil and groundwater samples being sent to a fixed-base laboratory for the methods indicated in QAPP Worksheets 19, 20, and 28?

SAT ____ UNSAT ____ N/A ____

26) Are sample containers being placed in a cooler with wet or dry ice to maintain sample temperatures at 4°C?

SAT ____ UNSAT ____ N/A ____

27) Are glass sample containers being wrapped in foam or bubble wrap before being placed in a Ziploc style bag?

SAT ____ UNSAT ____ N/A ____

28) Are shipping containers being secured with two custody seals (front right & back left)?

SAT ____ UNSAT ____ N/A ____

29) Have all the appropriate sampling forms and sample decontamination been completed?

SAT ____ UNSAT ____ N/A ____

30) Is all applicable information recorded on the chain-of-custody (COC), including sample ID, ”relinquished/received by” signatures, and time and date of relinquishment?

SAT ____ UNSAT ____ N/A ____

31) Are samples requiring different QC levels or turnaround times recorded correctly on the COCs?

SAT ____ UNSAT ____ N/A ____

32) If samples are to be delivered to the fixed-base laboratory by an overnight carrier, has the airbill number been recorded on the COC?

SAT ____ UNSAT ____ N/A ____

33) If samples are to be delivered to the fixed-base laboratory by an overnight carrier, has the COC been placed inside a plastic Ziploc style bag and taped to the inside of the sample container lid?

SAT ____ UNSAT ____ N/A ____

INVESTIGATION DERIVED WASTE

34) Is IDW being handled and stored appropriately? (i.e. soil being placed in covered portable roll-off bins lined with plastic sheeting or DOT approved drums (ex. 17H 55-gallon drum) and liquids in a separate 17H 55-gallon drum?)

SAT ____ UNSAT ____ N/A ____

35) Is each IDW container clearly marked with a label to indicate the waste source, date of generation, point of contact, etc.?

SAT ____ UNSAT ____ N/A ____

36) Is any IDW being stored over 90 days? If storage area is at Camp Pendleton, is any IDW being stored over 60 days?

SAT ____ UNSAT ____ N/A ____

COMMENTS:

SAP Attachment 3

Analytical Standard Operating Procedures

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STANDARD OPERATING PROCEDURES

VOLATILE ORGANICS BY GC/MS

SOP No.:	EMAX-8260	Revision No.	6	Effective Date:	25-Oct-10
Prepared By:	W. Tu Nisamaneepong			Date:	10-29-10
Approved By:	Kenette Pimentel QA Manager			Date:	10.25.10
Approved By:	Caspar Pang Laboratory Director			Date:	10-25-10

Control Number: 8260-06-

1.0 SCOPE AND APPLICATION

1.1. This analytical method is used to determine the concentration of volatile organic compounds whose boiling points are below 200°C and are water insoluble or slightly water-soluble found in solid or liquid samples. The list of compounds is summarized in Tables 7 and 8. Additional analytes may be added after verification. This SOP is an adaptation of Method 8260B.

2.0 SUMMARY OF METHOD

2.1. A measured sample is extracted using a purge and trap concentrator system. The extract is introduced to a temperature-programmed GC. The analytes are eluted through the GC column separating each analyte relative to its volatility. These analytes are captured and ionized by the mass spectrometer. The ionized fragments are measured by mass to charge ratio. Analyte qualitative identification is based on the characteristic electron impact mass spectra. Analyte quantitative identification is based on the response of the major ion relative to an internal standard using a multi-point calibration curve.

2.2. **Interferences**

2.2.1. Contamination may occur by diffusion of volatile organics (particularly chlorofluorocarbons and methylene chloride) through sample container septum during shipment and storage. Trip blanks and storage blanks can serve as means of monitoring.

2.2.2. Glassware and other sample processing materials in which the samples come into contact with are possible sources of contamination. All glassware and other materials used must be purchased pre-cleaned or decontaminated prior to use.

2.2.3. Solvents and reagents are possible sources of contamination. All solvents and reagents must be GC grade and must pass the QC checks prior to use.

2.2.4. Contamination by carry-over can occur whenever high concentration samples are analyzed in sequence with a low concentration sample. To reduce potential carry-over, the concentrator must be thoroughly baked-out between samples and the sample syringe and purging device must be thoroughly rinsed with an appropriate solvent between samples.

2.2.5. Another possible source of contamination is the analytical instrument itself. This can be monitored by analyzing an instrument blank prior to any analysis.

3.0 DETECTION LIMITS

3.1. **Detection Limit (DL), Limit of Detection (LOD) & Limit of Quantitation (LOQ)**

3.1.1. Refer to EMAX-QA04 for generation, validation and verification for DL, LOD and LOQ.

3.1.2. Refer to Tables 7 and 8 for established DL, LOD and LOQ levels.

4.0 DYNAMIC RANGE

4.1. The highest quantifiable concentration requiring no dilution is equal to the highest calibration point (see Sec. 9.4). All samples analyzed above this concentration are considered "over-range" and shall require dilution to properly quantitate.

4.2. The concentration in the diluted sample should be at or above the project reporting limit. All diluted samples analyzed below this concentration are considered "under-range". A lower dilution factor is required to properly quantitate.

4.3. **Typical Dynamic Range**

4.3.1. Water: 5 µg/L to 200 µg/L (5 ml purge)
1 µg/L to 40 µg/L (25 ml purge)

4.3.2. Soil: 5 µg/kg to 200 µg/kg

5.0 SAMPLE HOLDING TIME AND PRESERVATION

5.1. **Aqueous Samples**

5.1.1. Samples received in the laboratory should be contained in 40 ml vials with teflon lined septa with zero headspace.

Note: The size of any bubble caused by degassing upon cooling the sample should not exceed 6 mm.[1]

5.1.2. All samples must be stored at $\leq 6^{o}C$).

5.1.3. Samples preserved in HCL shall be analyzed within 14 days from the date of sampling. Samples with no chemical preservative must be analyzed within 7 days from the date of sampling.

5.2. **Soil Samples**

5.2.1. Samples receive in a glass jars or brass tubes shall be stored at $\leq 6^{o}C$. Samples must be analyzed within 14 days from sampling date.

5.2.2. Samples received in encore tubes are frozen, preserved with sodium bisulfate or extracted with methanol prior to analysis.

- Frozen encore tubes must be analyzed within 14 days from sampling date.
- Samples preserved with sodium bisulfate within 48 hours from sampling date must be analyzed within 14 days from sampling date.
- Methanol extracts shall be analyzed within 14 days from sampling date.
- Preserved samples and extracts shall be stored at $\leq 6^{o}C$.

[1] Referenced from SW846 Method 5030B, Section 6.1.

6.0 ASSOCIATED SOPs

6.1. EMAX-5030 - Purge and Trap For Aqueous Samples

6.2. EMAX-5035 - Closed-System Purge and Trap For Solid Samples

6.3. EMAX-DM01- Data Flow and Review

6.4. EMAX-QA04 - Method Detection Limit

6.5. EMAX-QA05 - Training

6.6. EMAX-QA08 - Corrective Action

6.7. EMAX-QC01 - Quality Control for Chemicals

6.8. EMAX-QC02 - Analytical Standard Preparation

6.9. EMAX-QC07 - Glassware Cleaning

6.10. EMAX-SM03 - Waste Disposal

6.11. EMAX-SM04 - Analytical and QC Sample Labeling

7.0 SAFETY

7.1. Read all MSDS of chemicals listed in this SOP.

7.2. All reagents, standards, and samples shall be treated as potential hazards. Observe standard laboratory safety procedures. Protective gear, i.e., lab coat, safety glasses, and gloves, shall be worn at all times when performing this procedure. All sample and standard handling shall be performed in the fume hood.

7.3. All waste generated during analytical process shall be placed in the waste containers. Waste shall be endorsed to the waste disposal section for proper disposal.

7.4. If for any reason, solvent and/or other reagents get in contact with the skin or any other part of the body, rinse the affected body part thoroughly with tap water. If irritations persist, inform your supervisor immediately so that proper action can be taken.

8.0 INSTRUMENTS, CHEMICALS AND REAGENTS

8.1. **Instruments and Supplies**

Gas Chromatography	HP 5890 Series II or equivalent
Detector	HP 5970 MSD or equivalent
Column	RTX 502.2 (0.32 mm x 60 m), 1.8um thickness or equivalent after verification that the four gases (chloromethane, bromomethene, chloroethane, and vinyl chloride) can be resolved > 90% from each other in the total ion chromatogram
Data Acquisition Software	ChemStation or equivalent
Purge & Trap Device	2000/OI 4460A/Dyna Tech/EST or equivalent

Multiple purging module	DynaTech/Archon or equivalent
Gases	Ultra-high purity helium/Air
Syringes	5-ml, 25-ml Luerlok gas-tight
Microsyringes	1, 10, 20, 25, 50, 100, and 1000 µL (Hamilton 702N or equivalent) for dilution purposes
Volumetric Flasks	2,5,10, 50, and 100 ml with ground glass stopper
Heated Jacket	Tekmar or O.I. Automatic sample heating jacket or equivalent

8.2. **Chemicals and Reagents**

Extraction Solvent	Purge & Trap Grade Methanol or equivalent
Reagent Water	Organic-free water
Reagent Soil	Organic-free Ottawa Sand or equivalent
Preservative	Sodium Bisulfate

9.0 STANDARDS

9.1. Standard preparation for VOA is summarized in Tables 1 to 4. Refer to EMAX-QC02 for proper analytical standard preparation. Other concentration levels may be prepared provided it complies with the method and project requirements.

9.2. **Stock Standard**

9.2.1. Purchase Stock Standards as certified solutions.

9.2.2. Purchase one set of calibration standard (Refer to Tables 1) for calibration and a secondary source Stock Standard for calibration verification (Refer to Table 2).

9.2.3. Purchase Surrogate Mix at 2500 mg/L and Internal Standard at 2000 mg/L (Refer to Table 3).

9.2.4. Purchase BFB as Tuning Standard at 5000 mg/L (refer to Table 4).

9.2.5. After opening, transfer in inert vials with minimal headspace and store at -10°C to -20°C.

9.3. **Intermediate Standards**

9.3.1. Using the stock standard solutions, prepare intermediate standards in methanol according to Tables 1 to 4 and store with minimal headspace in an inert vial.

9.4. **Initial Calibration Standards (ICAL)**

9.4.1. ICAL for 5-ml Purge.

9.4.1.1. Using intermediate standards, prepare a minimum of 6 calibration standards as suggested below.

Calibration Pt.	VOA (µg/L)*	Surrogate (µg/L)	Internal Std (µg/L)
1	5	5	50
2	10	10	50
3	20	20	50
4	50	50	50
5	100	100	50
6	200	200	50

* Ketones, Acrolein, Acrylonitrile and tert-Butanol are 5X the indicated concentration and m/p-Xylene is 2x the indicated concentration.

9.4.2. ICAL for 25-ml Purge

9.4.2.1. Using intermediate standards, prepare a minimum of 6 calibration standards as suggested below:

Calibration Pt.	VOA (µg/L)*	Surrogate (µg/L)	Internal Std (µg/L)
1	0.5	0.5	10
2	1	1	10
3	2	2	10
4	10	10	10
5	20	20	10
6	40	40	10

* Ketones, Acrolein, Acrylonitrile and tert-Butanol are 5X the indicated concentration and m/p-Xylene is 2x the indicated concentration.

9.5. **Initial Calibration Verification Standard (ICV)**

9.5.1. Using the Intermediate Standard prepared from the secondary source, spike into 5-ml or 25-ml purge. Refer to Table 5 for concentration levels of each analyte.

9.6. **Daily Calibration Check Standard (DCC)**

9.6.1. Using the Intermediate Standard prepared from the same source as the ICAL Standard, spike into 5-ml or 25-ml purge. Spike also Surrogate Standard. Refer to Table 5 for concentration levels of each analyte.

9.7. **LCS and Matrix Spike Standard**

9.7.1. For spike standards, use the ICV standard unless otherwise specified by the project. Refer to Table 5.

10.0 PROCEDURES

10.1. **Sample Preparation**

10.1.1. Refer to EMAX-5030 and EMAX-5035.

10.2. **Instrument Parameters**

10.2.1. From the main gas supply (gas Tanks) regulate gas pressure at 80 psi.

10.1.1. Fine-tune the instrument guided by the parameter conditions suggested below. Adjust the parameter conditions accordingly to obtain optimum condition. Print the instrument parameter and post it on the instrument for daily routine maintenance check.

10.2.2. Typical GC Parameters

Carrier gas flow (column) helium	1 - 5 ml/min
Initial Temp	40°C; hold for 1 min.
Rate	6°C/min.
Final Temp	200°C; hold for 1 min.
Inject Port	160°C
Interface	250°C

10.2.3. Mass Spectrometer Parameter

Scan Start	0.5 min.
Splitless value time	0 min.
Mass Range	35 to 300
Multiplier	1200 to 2700

10.2.4. Typical Purge and Trap Condition

10.2.4.1. Purge samples at 40°C for 11 minutes, desorbed at 250°C for 2 minutes and then bake the trap at 260°C for 11 minutes.

10.3. **Calibration**

10.3.1. Set GC/MS operating condition as described in Section 10.2.

10.3.2. **Perform Tune Check**

10.3.2.1. Introduce a BFB[2] to yield 5 – 50ng on column by either direct injection or purge and trap in 5-ml or 25-ml organic-free water.

10.3.2.2. Evaluate the tune check by the highest scan on the peak or the average of at least 3 scans (before, at, and after the apex) with a background subtraction using a single scan no more than 20 scans prior to the elution of BFB.

10.3.2.3. Check Table 6 for acceptance criteria or follow the manufacturer's recommendation for tuning. A valid tune check expires after 12 hours.

10.3.2.4. If non-compliant refer to Section 12 for corrective action.

10.3.3. **Initial Calibration (ICAL)**

[2] Alternatively, BFB in DCC can be used to evaluate tuning.

10.3.3.1. Perform ICAL when one of the conditions occurs.

- Instrument is new
- Instrument undergoes a major repair
- DCC failed to meet the acceptance criteria

10.3.3.2. Analyze minimum of 6-point initial calibration curve (Refer to Section 9.4) after a valid tune check.

10.3.3.3. Check for completeness of target compound list. If there is/are missing compound(s), perform the following:

- Check the established retention time window
- Check the relative intensity of major ions
- Adjust accordingly if necessary.

10.3.3.4. Establish a summary of Relative Response Factors for each analyte at each concentration. Calculate the Average Relative Response Factor (RRF_m), the Standard Deviation (SD), and the Relative Standard Deviation (RSD) according to Eq. 10.6.1.2, Eq. 10.6.1.5 and Eq. 10.6.1.6, respectively.

10.3.3.5. Evaluate System Performance Check Compounds (SPCC) and Calibration Check Compounds (CCC) as specified in Appendix 1.

10.3.3.6. Evaluate the ICAL for appropriate quantitation method.

- Use RRF_m if the RSD of individual analyte $\leq$15%.
- Apply Inverse Weighting Factor (1/y or $1/y^2$; where y is the instrument response) if it is determined to be the best fit for the specific analytes. This approach may be applied to any analyte including analyte that has RSD of $\leq$15% and correlation coefficient of ≥0.99.
- Apply linear least squares regression if past experience or priori knowledge of instrument response is known to be the best fit for specific analytes. This approach may be applied to any analyte including analyte that has RSD of $\leq$15% and correlation coefficient of ≥0.99.
- It may be appropriate to force the regression through zero for specific analytes.[3] When exercising this option (as included in the data acquisition software) make sure that the origin (0,0) is not included as a calibration point but rather the intercept is set to zero. This option shall only be applied if the curve favors better accuracy of quantitation.

10.3.3.7. Submit summary of ICAL, raw data and manual integration (if any) for secondary review.

10.3.4. **Initial Calibration Verification (ICV)**

10.3.4.1. Analyze ICV to verify the concentration of the ICAL standards (refer to Section 9.5).

[3] SW846 Method 8000B, Section 7.5.3

10.3.4.2. Check for completeness of analytes as described in Section 10.4.2.

10.3.4.3. Compare the retention times of the internal standards to the ICAL mid-point. Excursion of ± 30 seconds indicates instrument malfunction. When non-compliant check the column head pressure, gas supply or leaks. Corrective action is required prior to further analysis.

10.3.4.4. Compare the area of the Internal Standards (IS) acquired against the midpoint of the initial calibration point. The extracted ion current profile (EICP) must be within a factor of two (-50% to +100%).

10.3.4.5. Refer to Appendix 1 for ICV acceptance criteria and/or corrective action.

10.3.4.6. When non-compliant refer to Section 12 for corrective action.

10.3.5. **Daily Continuing Calibration (DCC)**

10.3.5.1. Analyze DCC to check the validity of the ICAL (refer to 9.6).

10.3.5.2. Check for completeness of analytes as described in Section 10.4.2.

10.3.5.3. Evaluate System Performance Check Compounds (SPCC) and Calibration Check Compounds (CCC) as specified in Appendix 1.

10.3.5.4. Compare the retention times of the internal standards to the ICAL mid-point. Excursion of ± 30 seconds indicates instrument malfunction. When non-compliant check the column head pressure, gas supply or leaks. Corrective action is required prior to further analysis.

10.3.5.5. Compare the area of the Internal Standards (IS) acquired against the midpoint of the initial calibration point. The extracted ion current profile (EICP) must be within a factor of two (-50% to +100%).

10.3.5.6. Establish RRF of each analyte, calculate %D (Eq. 10.6.2.1) against the ICAL.

10.3.5.7. Refer to Appendix 1 for DCC acceptance criteria and/or corrective action.

10.3.5.8. When non-compliant refer to Section 12 for corrective action.

10.4. **Analysis**

10.4.1. **Analytical Sequence**

10.4.1.1. Analyze BFB and evaluate tuning

10.4.1.2. Analyze DCC and check ICAL validity

10.4.1.3. Analyze Lab Control Sample

10.4.1.4. Analyze Lab Control Sample Duplicate (if required)

10.4.1.5. Analyze Method Blank

10.4.1.6. Analyze samples to a maximum number of 12-hours from the time of BFB injection.

10.4.1.7. Analyze a pair of matrix spikes (MS/MSD) for every 20 samples of the same matrix.

10.4.1.8. Record analytical sequence in the analytical run log.

10.4.2. **Sample Result Evaluation**

10.4.2.1. Check the QC criteria as soon as the data is available.

- Check surrogate recoveries against project specific requirement (PSR). In the absence of PSR, default to Appendix 1 QC limits.
- Check concentration of target analytes if calibration range is exceeded.
- If any of the above checkpoints indicate a problem, re-analysis is required. Note observations on the analytical run log. When results arise to questionable result, e.g. inconsistency from the first analysis, consult the Supervisor for further action.

10.4.3. **Qualitative Identification**

- The intensities of the characteristic ions maximize in the same scan or within one scan of each other.
- The relative retention time (RRT) of the sample component is within 0.06 RRT units of the RRT of the standard component.
- The relative intensity of the characteristic ions agrees within 30% of the relative intensity of these ions in the reference spectrum.
- Check the chromatogram for possible misidentified analytes. Investigate visible peaks in the chromatogram that were not identified in the data output. Manually integrate the peak if necessary.

10.4.3.1. For samples containing components not associated with the calibration standards, perform a library search for purposes of tentative identification4 (TIC). Execute *FTICB exe (HP RTE-1000 program) or LSC (Chem Station program) to initiate the library search using NIST/EPA/MSDC mass spectral library. Visually inspect each extracted mass ion chromatograph to determine the identification of the unknown before final reporting following the guidelines below.

- Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum.
- The relative intensities of the major ions should agree within + 20%. Example: for an ion with an abundance of 50% of the standard spectra, the corresponding sample ion abundance must be between 30 and 70%.
- Molecular ions present in reference spectrum should be present in sample spectrum.
- Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of co-eluting analytes.
- Ions present in the reference spectrum but not present in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or co-eluting analytes. Data system library reduction programs can sometimes create these discrepancies.

10.4.3.2. Reporting TICs

- If the library search produces a match at or above 85%, report the analyte.

[4] Library search is performed only when indicated in the PSR.

- If the library search produces more than one analyte at or above 85%, report the first analyte (highest).
- If the library search produces no matches at or above 85%, the compound should be reported as unknown.

10.4.4. **Quantitation**

- Apply the appropriate quantitation method (Section 10.3.3.6). Calculate the concentration of any positively identified target analyte using the appropriate equation in Section 10.6.3. Apply the dilution factor for diluted samples to calculate for the final concentration of the sample.

10.4.5. **Manual Integration**

10.4.5.1. Refer to EMAX-DM01, Section 4.4.3.

10.4.6. **Dealing with Carryover**

10.4.6.1. Check the sample analyzed after a sample having target analyte concentrations exceeding the calibration range.

10.4.6.2. If there is no target analyte detected as found in the sample that exceeded the calibration range, proceed with data reduction.

10.4.6.3. If there is any target analyte detected as found in the sample that exceeded the calibration range, re-analyze the sample to rule out carry over. If carry over is confirmed, proceed with data reduction and report the data from re-analysis.

10.4.6.4. For decontaminating the sample purger consider the following suggestion:

- Rinse the purging apparatus and the contaminated port with organic-free reagent water containing 10% methanol. Dry purge the system overnight and analyze reagent blank prior to sample analysis. Repeat the process until no evidence of contamination is observed.

10.5. **Data Reduction**

10.5.1. Make a copy of the analytical run log and highlight the data to be reported.

10.5.2. Check that all positively identified analytes are within the calibration range.

10.5.3. Collate the reportable raw data separating the QC results from the sample results.

10.5.4. Keep all other data generated with the analytical folder marked with “For record only”.

10.5.5. Proceed to report generation.

10.6. **Calculations**

10.6.1. Initial Calibration

10.6.1.1. Calculate for the Relative Response Factor (RRF)

$$RRF = \frac{A_X C_{IS}}{A_{IS} C_X} \qquad \textit{Eq. 10.6.1.1}$$

where:

RRF – Relative Response Factor

A_X – Area of characteristic ion for the compound being measured

A_{IS} – Area of characteristic ion for the specific internal standard

C_X – Concentration of the compound being measured

C_{IS} – Concentration of the specific internal standard

10.6.1.2. Calculate for the Average Relative Response Factor (RRF_m).

$$RRF_m = \frac{\sum RRF}{n} \qquad \textit{Eq. 10.6.1.2}$$

where:

RRF_m – Average response factor

$\sum RRF$ – Summation of response factors

n – Number of measurements

10.6.1.3. Calculate for Least Square Linear Regression

$$y = ax + b \qquad \textit{Eq. 10.6.1.3}$$

where:

y – Response ratio (A_X/A_{IS})

x – Amount ratio (C_X/C_{IS})

a – x1 = slope of the line

$$a = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

where: $\bar{x}$ = average of amount ratios

$\bar{y}$ = average of response ratios

b – x0 = intercept of the line

$$b = \bar{y} - a * \bar{x}$$

10.6.1.4. Calculate for Inverse Weighting Factor

$$y = ax + b \qquad \textit{Eq. 10.6.1.4}$$

where:

y – Response ratio (A_X/A_{IS})

x – Amount ratio (C_X/C_{IS})

a – x1 = slope of the line

$$a = \frac{\sum (x - x_a)(y - y_a)}{\sum (x - x_a)^2}$$

where: $x_a = \sum \left[x(1/x) / \sum (1/x) \right]$

$$y_a = \sum \left[y(1/x) / \sum (1/x) \right]$$

or $x_a = \sum \left[x(1/x^2) / \sum (1/x^2) \right]$

$$y_a = \sum \left[y(1/x^2) / \sum (1/x^2) \right]$$

b – x0 = intercept of the line

$$b = y_a - a * x_a$$

10.6.1.5. Calculate the Standard Deviation

$$SD = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n-1}} \qquad \textit{Eq. 10.6.1.5}$$

where:

SD – Standard deviation

x_i – Result at i^{th} measurement

$\bar{x}$ – Mean of the n measurements

n – Number of measurements

10.6.1.6. Calculate the % relative standard deviation (%RSD).

$$\%RSD = \frac{SD}{RRF_m} * 100\% \qquad \textit{Eq. 10.6.1.6}$$

where:

SD – Standard deviation

RRF_m – Average response factor

10.6.2. Calibration Check/Continuing Calibration

10.6.2.1. Calculate Percent Difference (%D)

$$\%D = \frac{\left[RRF_c - RRF_m \right]}{RRF_m} * 100\% \qquad \textit{Eq. 10.6.2.1}$$

where:

RRF_c – Response factor from continuing calibration standard

RRF_m – Average response factor

10.6.2.2. % Drift

$$\%Drift = \frac{[found\ Conc. - true\ Conc]}{true\ Conc.} * 100\% \qquad \textit{Eq. 10.6.2.2}$$

10.6.3. Calculation of Sample Concentration (Water and Soil/Sediment Samples). When a compound is identified, the quantitation of that compound shall be based on the integrated abundance from the EICP of the primary characteristic ion.

10.6.3.1. Water Samples

$$Concentration\ (ug/L) = \frac{(Ax)(Is)}{(Ais)(RRF_m)}\ x\ DF \qquad \textit{Eq. 10.6.3.1}$$

where:

A_x – Area of characteristic ion for the compound to be measured

I_s – Concentration of internal standard added in µg/L

A_{is} – Area of characteristic ion for the internal standard

RRF_m – Average response factor

DF – Dilution factor = $\frac{purge\ volume\ in\ ml\ \ (5\ ml\ or\ 25\ ml)}{sample\ \ amount\ \ in\ ml}$

10.6.3.2. Soil/Sediment Samples (Dry weight basis)

$$Concentration\ (ug/kg) = \frac{(Ax)(Is)}{(Ais)(RRF_m)(DW)}\ x\ DF \qquad \textit{Eq. 10.6.3.2}$$

where:

A_x – Area of characteristic ion for the compound to be measured

I_s – Concentration of internal standard added in µg/L

A_{is} – Area of characteristic ion for the internal standard

RRF_m – Average response factor

DF – Dilution factor = $\frac{5\ g}{(sample\ \ \ amount\ \ \ in\ g)}$

DW – % solid = $\frac{100 - \%moisture}{100}$

10.6.3.3. Extracted Soil/Sediment Samples (Dry weight basis)

$$Concentration\ (ug/kg) = \frac{(Ax)(Is)}{(Ais)(RRF_m)(DW)}\ x\ DF \qquad \textit{Eq. 10.6.3.3}$$

where:

A_x – Area of characteristic ion for the compound to be measured

I_s – Concentration of internal standard added in µg/L

A_{is} – Area of characteristic ion for the internal standard

RRF_m – Average response factor

DF – Dilution factor = $\frac{(purged\ \ volume\ \ in\ \ \mu L)(5\,g)}{(extract\ \ aliquot\ \ in\ \ \mu L)(sample\ \ amount\ \ in\ \ g)}$

DW – % solid = $\frac{100 - \%moisture}{100}$

10.6.4. Alternatively, the regression line (area ratio of Ax/Ais versus concentration using first degree) fitted to the initial calibration may be used for determination of the sample concentration when RSD of the analyte is greater than 15% (Section 10.3.3.6).

10.6.5. Concentration of TIC is estimated by the same method as target compounds with the following assumptions:

10.6.5.1. The area Ax and Ais are derived from total ion chromatogram. Ais refers to the closest internal standard (IS) free of interference.

10.6.5.2. RRF of the TIC is 1.

10.6.6. Method Proficiency

10.6.6.1. Percent Recovery

$$\%\ \mathrm{Recovery} = \frac{C_f - C}{C_s} * 100\% \qquad \textit{Eq. 10.6.6.1}$$

where:

C_f – Concentration found

C – Concentration of sample

C_s – Concentration of spike

10.6.6.2. Relative Percent Difference (%RPD)

$$\%\ RPD = \frac{|C_1 - C_2|}{\left(\frac{C_1 + C_2}{2}\right)} \times 100 \qquad \textit{Eq. 10.6.6.2}$$

where:

RPD – Relative Percent Difference

C1 – Measured concentration of the first sample aliquot

C2 – Measured concentration of the second sample aliquot

10.7. **Report Generation**

10.7.1. Generate the method.txt file using WBDX[5].exe.

10.7.2. Generate Lab Chronicle using Labchron.exe

10.7.3. Generate the sample results using F1VX[5].exe

10.7.4. Generate the QC summary using QCVX[5].exe

10.7.5. Generate Case Narrative using CN1.exe

10.8. **Data Review**

10.8.1. Arrange the analysis package in sequence as detailed below using section separators. Attach all raw data to every form generated, to include manual integration and re-analyses.

- Sample Results
- LCS Summary
- MS/MSD Summary
- ICAL Summary
- ICV Summary
- DCC Summary

10.8.2. Perform a 100% data review in accordance to EMAX-DM01and the PSR.

- Check internal standard area. They should be within -50 to +100% of DCC to be acceptable.
- Check surrogate recoveries against project specific criteria (PSR). In the absence of PSR, default to in-house QC limits.
- Check concentration of target analytes if calibration range is exceeded.
- If any of the above checkpoints indicate a problem, re-analysis is required.

10.8.3. Review case narrative that it accurately describes what transpired in the analytical process

10.8.4. Submit the analysis package for secondary review.

10.9. **Preventive Maintenance**

10.9.1. Perform instrument routine preventive maintenance and record on instrument-specific maintenance logs. Routine maintenance ensures that all equipment is operating under optimum conditions, thus reducing the possibility of instrument malfunction that may affect data quality.

10.9.2. The table below list suggested routine maintenance schedule.

Task	Every Day	Every Week	Every Month	Every 3 Months	Every 6 Months	As Needed
Quick Tune	✓					

[5] X - version number

Task	Every Day	Every Week	Every Month	Every 3 Months	Every 6 Months	As Needed
Tune Check	✓					
Check the tightness of the column nuts.	✓					
Check gas cylinders pressure	✓					
Check the foreline pump oil level		✓				
Check the calibration vial			✓			
Check and if necessary, change injection port liners, septa and O-rings.				✓		
Clean the split/splitless inlet vent line trap.					✓	
Replace the foreline pump oil					✓	
Replace the diffusion pump fluid					✓	
Replace the traps and filters					✓	
Clean the ion source						✓
Change the carrier gas trap(s) and purifier						✓
Replace column						✓
AutoTune the MSD						✓
Replace the worn out parts						✓

11.0 QUALITY CONTROL

11.1. **Sample Preparation Batch QC**

11.1.1. Analyze Method Blank (MB) to demonstrate that preparation of samples was free from contamination.

11.1.2. Analyze Lab Control Sample (LCS/LCD) to assess preparative batch accuracy and precision.

11.1.3. Analyze Matrix Spike (MS/MSD) to assess matrix interference.

11.1.4. All lab wares used in the sample preparation shall be properly treated as specified in EMAX-QC07.

11.1.5. All solvents and reagents shall undergo quality control check in the stationary laboratory prior to its use.

11.2. **Analytical Batch QC**

11.2.1. Perform tune check to verify that the mass spectrometer meets standard mass spectra abundance criteria prior to calibration and check for any contamination.

11.2.2. Perform initial calibration (ICAL) to establish a calibration curve for the quantification of the analytes of interest.

11.2.3. Establish retention time window position for each analyte every after ICAL for proper qualitative identification.

11.2.4. Perform initial continuing calibration verification (ICV) every after ICAL to verify accuracy of ICAL.

11.2.5. Perform continuing calibration verification (CCV) every 12 hours to verify that instrument response is reliable, and has not changed significantly from the current ICAL curve.

11.2.6. Evaluate relative retention time for each anlaytes in every sample to be within $\pm$0.06 RRT units.

11.2.7. Verify internal standards(IS) for quantitative accuracy and that its Retention time is within ± 30 seconds from retention time of the midpoint standard in the ICAL and EICP area is within -50% to +100% of ICAL midpoint standard.

11.2.8. Evaluate surrogate recovery to monitor instrument response on every sample.

11.3. **Method QC**

11.3.1. Establish detection limit (DL) to determine the smallest analyte concentration that can be demonstrated to be different from zero.

11.3.2. Establish limit of detection (LOD) to determine the smallest concentration of an analyte that can be qualitatively identified in a sample with 99% confidence level.

11.3.3. Establish limit of quantitation (LOQ) to determine the lowest concentration that produces a quantitative result within specified limits of precision and bias.

11.3.4. Demonstrate capability by understanding and applying procedures set forth by this SOP and culminating it with demonstration of capability as described in EMAX-QA05.

11.4. Refer to Appendix 1 for all related Quality Control parameters, frequency, acceptance criteria and corrective action

12.0 CORRECTIVE ACTION

12.1. **Sample Preparation QC**

12.1.1. If MB is non-compliant, consider the following suggestions to correct the problem:

- If contaminant is trace level, bake the trap at 260 ^{o}C for about 30 minutes.
- If contamination is high, flush the sample line with methanol and replace the trap.
- If problem persist, inform the supervisor for further advice.

12.1.2. LCS is non-compliant, consider the following suggestions to help you correct the problem:

- If majority of the analyte response are low and no evidence of leak is apparent, it is indicative of a bad purge or standard degradation. Prepare a fresh standard and re-analyze LCS and the associated samples.

- If result is bias high, rule out contamination. Refer to 12.2.1
- If problem persist, inform the supervisor for further advice.

12.1.3. If MS is non-compliant consider the following suggestion to correct the problem:

- Verify that the spike amount added is accurate by checking the record and the micropipette calibration
- If LCS is within acceptance criteria then and the right amount of spike is added into the sample then it is indicative of matrix interference. Discuss the probable matrix interference in the case narrative

12.2. **Analytical Batch QC**

12.2.1. **Tune Check.** If tune check is non-compliant consider the following suggestion to correct the problem:

- Check the abundance of mass 95 and 174. If it is significantly less than previous tune checks, it is indicative of insufficient amount of BFB injected. Probable causes are: improper spiking, leaks, standard degradation or low vacuum system. Repeat tune check ensuring that BFB was properly spiked or rule out leaks, prepare a fresh BFB standard and repeat the tune check.
- If problem persist, retune the instrument and repeat tune check.

12.2.2. **Initial Calibration.**

12.2.2.1. If the %RSD is out of acceptance criteria, consider the following suggestions to correct the problem.

- If one of the standards returns a bias low or bias high on all of the analytes then that point is considered an out-liner. Prepare a standard at that ICAL point and re-analyze.
- If the highest ICAL point appears to be saturated, drop the highest point.
- If the lowest point returns a bias low or bias high response or the peaks are not distinct and sharp, drop the lowest point.

Note : The lowest calibration point identifies the reporting limit (RL). Therefore, check that the RL is in conformance to the current projects where the ICAL will be used.

12.2.3. **Daily Continuing Calibration Check (DCC)** If DCC is non-compliant consider the following suggestions to correct the problem

- If majority of the analyte response are low and no evidence of leak is apparent, it is indicative of a bad purge or leak. Re-analyze DCC.
- If problem persist, rule out standard degradation. Prepare a fresh standard and repeat DCC.
- Otherwise execute instrument maintenance and perform ICAL.

12.2.4. **Instrument Blank.** If instrument blank is non-compliant, consider the following suggestions to correct the problem

- If contaminant is trace level, bake the trap at 260 ^{o}C for about 30 minutes.

- If contamination is high, flush the sample line with methanol and replace the trap.
- If problem persist, inform the supervisor for further action.

12.3. Generate a Non-Conformance Report (NCR) when an anomaly other than specified in Appendix 1 is observed. Refer to EMAX-QA08 for NCR details.

12.4. Discuss water samples that are labeled preserved having a pH value > 2 in the case narrative.

13.0 POLLUTION PREVENTION

13.1. Endorse all unused samples to the Waste Disposal Unit (WDU) for proper disposal. No samples shall be dumped on the laboratory sink.

13.2. Separate and properly identify all unused expired analytical standards prior to endorsing them to WDU for proper disposal.

14.0 WASTE MANAGEMENT

14.1. Dispose all unused samples, expired analytical standards and other waste generated during the analytical process in accordance to EMAX-SM-03.

15.0 SUPPLEMENTARY NOTES

15.1. **Definition of Terms**

15.1.1. Batch – A group of samples that are prepared and/or analyzed at the same time using the same lot of reagents.

15.1.1.1 ***Preparation batch*** is composed of one to 20 samples of the same matrix, a method blank, a lab control sample and matrix spike/matrix spike duplicate.

15.1.1.2 ***Analytical batch*** is composed of prepared samples (extracts, digestates, or concentrates), which are analyzed together as a group using an instrument in conformance to the analytical requirement. An analytical batch can include samples originating from various matrices, preparation batches, and can exceed 20 samples.

15.1.2. Calibration – A determinant measured from a standard to obtain the correct value of an instrument output.

15.1.3. Carry-over – Are contaminants retained in the instrument/apparatus from a highly contaminated sample that is passed into the succeeding sample(s).

15.1.4. CCC – Calibration check compounds that evaluate the integrity of the system. Variability of these compounds may indicate system leak or reactive sites in the column.

15.1.5. Instrument Method – A file generated to contain the instrument calibration and instrument parameter settings for a particular analysis.

15.1.6. Instrument Blank – A target-analyte-free solvent subjected to the entire analytical process to establish zero baseline or background value.

15.1.7. Lab Control Sample (LCS) – A target-analyte-free sample spiked with a verified known amount of target analyte(s) or a reference material with a certified known value subjected to the

entire sample preparation and/or analytical process. LCS is analyzed to monitor the accuracy of the analytical system.

15.1.8. Matrix – is a component or form of a sample.

15.1.9. Matrix Spike (MS) –A sample spiked with a verified known amount of target analyte(s) subjected to the entire sample preparation and/or analytical process. MS is analyzed to monitor matrix effect on a method's recovery efficiency.

15.1.10. Matrix Spike Duplicate (MSD) – A replicate of MS analyzed to monitor precision or recovery.

15.1.11. Method Blank – A target-analyte-free sample subjected to the entire sample preparation and/or analytical to monitor contamination.

15.1.12. MSDS – Material safety data sheet is where the physical data, toxicology and safety precaution of a certain substance is listed.

15.1.13. Response Factor – The ratio of the peak area of the target compound in the sample or sample extracts to the peak area of the internal standard in the sample or sample extract.

15.1.14. Sample – A specimen received in the laboratory bearing a sample label traceable to the accompanying COC. Samples collected in different containers having the same field sample ID are considered the same and therefore labeled with the same lab sample ID unless otherwise specified by the project.

15.1.15. Sample Duplicate – A replicate of a sub-sample taken from one sample, prepared and analyzed within the same preparation batch.

15.1.16. SPCC – System performance check compounds are compounds that are used to check compound stability and to check for degradation cause by contaminated lines or active sites in the system.

15.2. **Application of EMAX QC Procedures**

15.2.1. The procedures and QC criteria summarized in this SOP shall be applied to all projects when performing volatile analysis by GC/MS. The standard analyte list and RL are presented in Tables 7 & 8. In instances where there is a project or program QAPP, the requirements given in the project shall take precedence over this SOP.

15.3. **Department of Defense (DoD) Projects**

15.3.1. Samples from DoD sponsored projects shall follow the Quality Assurance Project Plan (QAPP), Statement of Work (SOW) and/or client's quality control directive. In the absence of QAPP, the DoD Quality Systems Manual (QSM), latest update, shall be applied

15.4. **Department of Energy Basic Ordering Agreement (DOE-BOA) Projects**

15.4.1. Samples from DoE sponsored projects shall follow the Quality Assurance Project Plan (QAPP), Statement of Work (SOW) and/or client's quality control directive. In the absence of QAPP, the DoE Quality Systems for Analytical Services (QSAS), latest update, shall be applied.

16.0 REFERENCES

16.1. U.S. EPA Method 8260B; SW846, as updated.

16.2. EMAX Quality Systems Manual, as updated.

17.0 APPENDICES

17.1. Figures

17.1.1.	Figure 1	Peak Evaluation Techniques
17.1.2.	Figure 2	Typical Chromatogram
16.1.1.	Figure 3	Typical ICAL Summary
16.1.2.	Figure 4	Typical Instrument Performance Check (Tuning)
16.1.3.	Figure 5	Typical Internal Standard Area and Retention Time Summary
16.1.4.	Figure 6	Typical Sample Result Summary
16.1.5.	Figure 7	Typical LCS Report Summary
16.1.6.	Figure 8	Typical MS/MSD Report Summary
16.1.7.	Figure 9	Typical Case Narrative

17.2. Tables

17.2.1.	Table 1	Initial Calibration Intermediate Standard Preparation
17.2.2.	Table 2	Initial Calibration Verification Intermediate Standard Preparation
17.2.3.	Table 3	Surrogate/Internal Standards Preparation
17.2.4.	Table 4	Tuning Solution Standard Preparation
17.2.5.	Table 5	Typical Initial Calibration and QC Standards Concentration Levels
17.2.6.	Table 6	BFB Key Ion Abundance Criteria
17.2.7.	Table 7	Established DL, LOD and LOQ
17.2.8.	Table 8	Characteristic Ions for Purgeable Organic Compounds
17.2.9.	Table 9	Internal Standards with Corresponding Target Compounds and Surrogates Assigned for Quantitation

17.3. Appendices

17.3.1.	Appendix 1	Summary of Quality Control Procedures
17.3.2.	Appendix 2	Demonstration of Capability

17.4. Forms

17.4.1.	8260FA	Analytical Run Log
17.4.2.	8260FM	Instrument Maintenance Log

Figure 1: **PEAK EVALUATION TECHNIQUES**

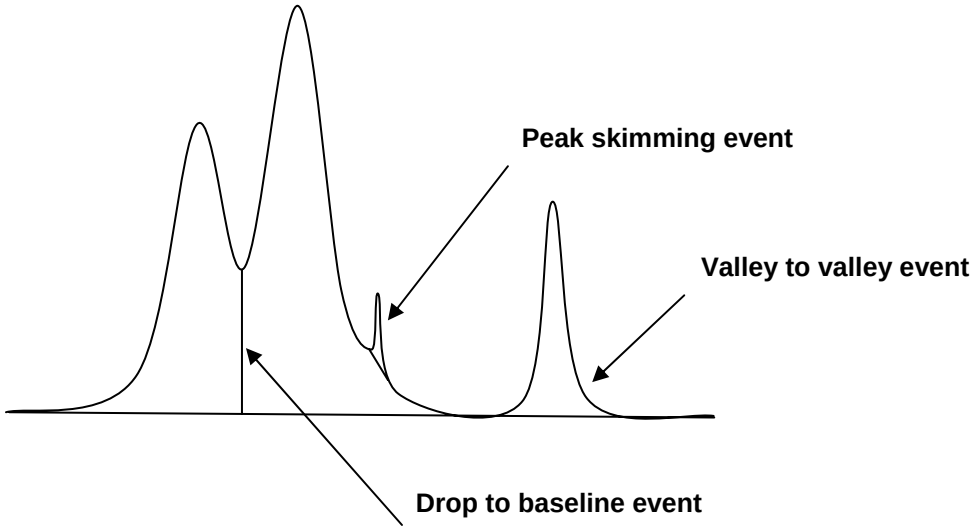
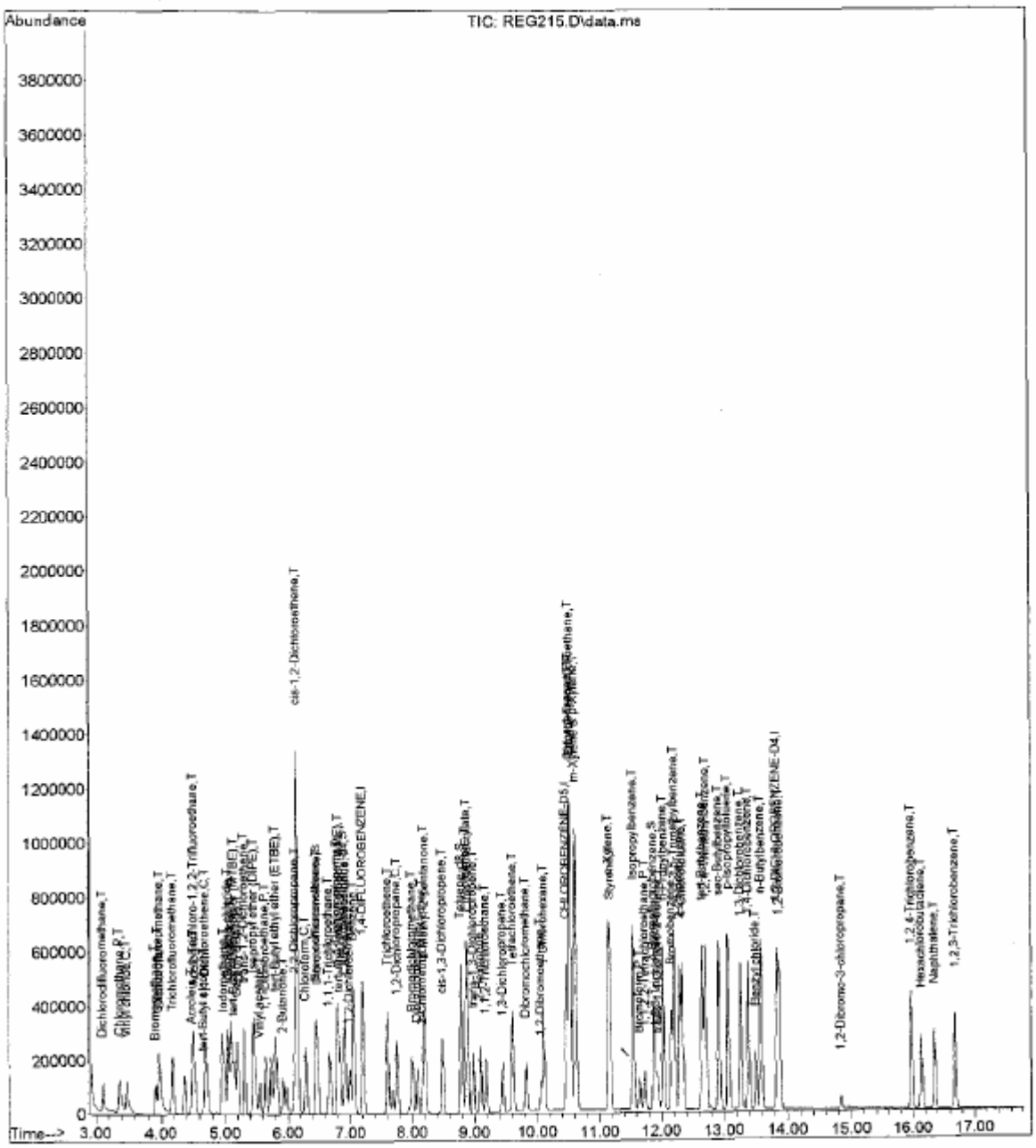


Figure 2: **TYPICAL CHROMATOGRAM**

Quantitation Report (Not Reviewed)

Data File : D:\Data\09E08\REG215.D Vial: 14
Acq On : 8 May 2009 16:45 Operator: CGM
Sample : IVOE2E081 Inst : E2
Misc : 10ppb 8260/50ppb KET-A-TBA/60ppb AC Multiplr: 1.00
Integrator: RTE
Quant Time: May 13 13:20:08 2009
Quant Results File: VOE2E08.RES

Quant Method : C:\msdchem\1\METHODS\VOE2E08.M
Quant Title : METHOD 8260 10mL
QLast Update : Wed May 13 13:16:50 2009
Response via : Initial Calibration
DataAcq Meth:VOE2E08.M



VOE2E08.M Wed May 13 13:20:09 2009 Page: 3

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Figure 3: **TYPICAL ICAL SUMMARY**

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E2
Beginning DateTime :05/08/09 12:03
Spike Units :PPB
IC File :REG208

Column Spec :RTX-502.2 ID :0.32MM
Ending DateTime :05/08/09 15:33
HPChem Method :VOE2E08

M	IDX	Parameters	.3 12:03 REG203	.5 12:26 REG204	1 12:49 REG205	2 13:13 REG206	5 13:36 REG207	10 14:00 REG208	30 14:23 REG209	50 14:47 REG210	100 15:10 REG211	200 15:33 REG212	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	7.2174
	2	Dichlorodifluoromethane	0.243	0.210	0.233	0.223	0.275	0.267	0.267	0.261	0.238	0.238	0.245	8.72	3.1069
	3	Chloromethane	------	0.891	0.649	0.552	0.523	0.509	0.468	0.458	0.400	0.403	0.539	28.34	3.3674
	4	Vinyl chloride	0.439	0.385	0.353	0.361	0.380	0.378	0.357	0.348	0.276	------	0.364	11.78	3.4775
	5	Bromomethane	0.192	0.242	0.195	0.194	0.217	0.219	0.236	0.251	0.233	0.239	0.222	9.78	3.9081
	6	Chloroethane	0.174	0.202	0.203	0.202	0.216	0.219	0.215	0.217	0.192	0.193	0.203	7.00	3.9543
	7	Dichlorofluoromethane	0.466	0.453	0.495	0.517	0.581	0.548	0.517	0.535	0.482	0.489	0.508	7.70	3.9653
	8	Trichlorofluoromethane	0.521	0.502	0.426	0.455	0.484	0.470	0.468	0.477	0.431	0.416	0.465	7.25	4.1832
5	9	Acrolein	0.028	0.026	0.029	0.030	0.032	0.028	0.029	0.030	0.028	0.031	0.029	6.59	4.4837
	10	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.178	0.227	0.217	0.196	0.239	0.238	0.227	0.236	0.220	0.217	0.220	8.89	4.5134
5	11	Acetone	0.079	0.071	0.069	0.062	0.069	0.052	0.055	0.057	0.051	0.058	0.062	14.78	4.5156
	12	1,1-Dichloroethene	0.346	0.374	0.392	0.371	0.420	0.403	0.386	0.401	0.371	0.361	0.383	5.81	4.6917
5	13	tert-Butyl alcohol	------	------	0.016	0.015	0.020	0.014	0.014	0.016	0.014	0.018	0.016	12.76	4.6697
	14	Iodomethane	0.285	0.360	0.368	0.407	0.455	0.465	0.438	0.456	0.410	0.406	0.405	13.66	4.9888
	15	Methylene chloride	0.505	0.478	0.462	0.479	0.499	0.471	0.449	0.459	0.412	0.416	0.463	6.69	5.0549
6	16	Acrylonitrile	0.090	0.096	0.100	0.091	0.102	0.084	0.086	0.089	0.082	0.090	0.091	7.35	5.0989
	17	Carbon disulfide	0.880	0.806	0.718	0.692	0.738	0.708	0.670	0.700	0.647	0.647	0.721	10.12	5.1979
	18	tert-Butyl methyl ether (MTBE)	0.485	0.532	0.533	0.509	0.591	0.501	0.507	0.527	0.483	0.517	0.519	5.97	5.1429
	19	trans-1,2-Dichloroethene	0.451	0.406	0.413	0.412	0.448	0.414	0.402	0.424	0.388	0.380	0.414	5.54	5.3091
	20	Isopropyl ether (DIPE)	1.136	0.993	1.019	1.051	1.159	1.055	1.018	1.058	0.964	0.969	1.042	6.22	5.4620
	21	Vinyl acetate	0.444	0.455	0.453	0.444	0.522	0.448	0.443	0.465	0.425	0.462	0.456	5.68	5.5501
	22	1,1-Dichloroethane	0.487	0.518	0.513	0.518	0.560	0.519	0.502	0.518	0.476	0.464	0.507	5.33	5.6392
	23	tert-Butyl ethyl ether (ETBE)	0.790	0.793	0.768	0.806	0.910	0.786	0.788	0.826	0.764	0.801	0.803	5.18	5.8021
5	24	2-Butanone	0.108	0.095	0.109	0.097	0.113	0.089	0.093	0.097	0.090	0.104	0.099	8.40	5.9132
	25	2,2-Dichloropropane	0.326	0.360	0.361	0.359	0.388	0.384	0.367	0.385	0.352	0.358	0.364	5.10	6.1223
	26	cis-1,2-Dichloroethene	0.514	0.509	0.496	0.483	0.511	0.479	0.455	0.481	0.437	0.421	0.479	6.67	6.1543
	27	Chloroform	0.476	0.447	0.455	0.465	0.497	0.464	0.440	0.462	0.424	0.417	0.455	5.27	6.2863
5	28	tert-Amyl alcohol (TAA)	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	29	Bromochloromethane	0.332	0.308	0.297	0.308	0.330	0.299	0.287	0.299	0.270	0.270	0.300	7.07	6.4525
	30	Dibromofluoromethane	------	0.315	0.328	0.355	0.373	0.349	0.346	0.362	0.328	0.328	0.343	5.56	6.4770
	31	1,1,1-Trichloroethane	0.393	0.390	0.396	0.405	0.445	0.429	0.411	0.432	0.399	0.396	0.410	4.68	6.6693
	32	tert-Amyl methyl ether (TAME)	0.724	0.640	0.657	0.604	0.661	0.584	0.592	0.625	0.581	0.625	0.629	6.95	6.8245
	33	1,2-Dichloroethane-d4	------	0.303	0.297	0.301	0.345	0.297	0.301	0.309	0.281	0.293	0.303	5.79	6.9148
	34	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	10.4694
	35	1,1-Dichloropropene	0.147	0.163	0.176	0.151	0.161	0.172	0.152	0.167	0.143	0.124	0.156	9.93	6.7981
	36	Carbon tetrachloride	0.432	0.492	0.483	0.472	0.455	0.497	0.437	0.477	0.412	0.354	0.451	9.75	6.9257
	37	1,2-Dichloroethane	0.431	0.440	0.406	0.413	0.402	0.395	0.363	0.387	0.329	0.301	0.387	11.39	6.9973
	38	Benzene	1.445	1.318	1.187	1.132	1.145	1.153	1.030	1.119	0.960	------	1.166	12.37	7.0627
	39	Trichloroethene	0.439	0.419	0.380	0.361	0.360	0.369	0.329	0.365	0.317	0.277	0.362	12.98	7.6081
	40	1,2-Dichloropropane	0.380	0.359	0.340	0.329	0.331	0.333	0.303	0.332	0.289	0.266	0.326	10.15	7.7610
20	41	1,4-Dioxane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	42	Bromodichloromethane	0.440	0.446	0.417	0.407	0.425	0.424	0.383	0.417	0.362	0.332	0.405	8.84	8.0031
	43	Dibromomethane	0.194	0.175	0.185	0.175	0.178	0.170	0.156	0.170	0.145	0.137	0.169	10.40	8.0791
	44	2-Chloroethyl vinyl ether	0.118	0.126	0.127	0.120	0.138	0.135	0.133	0.145	0.129	0.134	0.130	6.37	8.1693
5	45	4-Methyl-2-pentanone	0.270	0.271	0.294	0.254	0.275	0.242	0.245	0.264	0.231	0.236	0.258	7.70	8.2023
	46	cis-1,3-Dichloropropene	0.452	0.423	0.425	0.419	0.429	0.435	0.407	0.442	0.394	0.379	0.420	5.28	8.4885
	47	Toluene-d8	------	1.163	1.121	1.138	1.125	1.191	1.133	1.239	1.103	1.024	1.137	5.21	8.7942
	48	Toluene	1.261	1.121	1.134	1.070	1.099	1.122	1.038	1.143	1.021	0.950	1.096	7.65	8.8736
	49	Ethyl methacrylate	0.169	0.172	0.197	0.185	0.217	0.200	0.198	0.217	0.193	0.205	0.195	8.42	8.8813
	50	trans-1,3-Dichloropropene	0.345	0.320	0.315	0.331	0.337	0.340	0.323	0.354	0.317	0.320	0.330	4.02	8.9837

Figure 3 (cont.): **TYPICAL ICAL SUMMARY**

5	51	2-Hexanone	0.131	0.140	0.155	0.131	0.146	0.128	0.130	0.142	0.124	0.132	0.136	7.13	9.0938
	52	1,1,2-Trichloroethane	0.187	0.178	0.220	0.215	0.221	0.205	0.194	0.210	0.189	0.192	0.201	7.54	9.1818
	53	1,3-Dichloropropane	0.338	0.316	0.333	0.307	0.336	0.316	0.295	0.322	0.288	0.292	0.314	5.88	9.4470
	54	Tetrachloroethene	0.284	0.279	0.282	0.258	0.269	0.291	0.262	0.289	0.266	0.250	0.273	5.07	9.6110
	55	Dibromochloromethane	0.299	0.307	0.309	0.306	0.319	0.313	0.299	0.330	0.299	0.303	0.308	3.20	9.8212
	56	1,2-Dibromoethane	0.245	0.245	0.226	0.211	0.234	0.221	0.210	0.228	0.206	0.210	0.223	6.48	10.0611
	57	1-Chlorohexane	0.296	0.312	0.351	0.314	0.345	0.380	0.349	0.392	0.358	0.345	0.344	8.70	10.1084
	58	Chlorobenzene	0.896	0.869	0.798	0.779	0.775	0.822	0.756	0.841	0.767	0.723	0.803	6.71	10.5233
	59	1,1,1,2-Tetrachloroethane	0.362	0.335	0.335	0.328	0.344	0.343	0.320	0.354	0.317	0.292	0.333	6.02	10.5354
	60	Ethylbenzene	1.321	1.245	1.312	1.204	1.213	1.302	1.187	1.331	1.216	1.141	1.247	5.25	10.5354
2	61	m-Xylene & p-Xylene	1.007	0.942	0.937	0.898	0.926	0.967	0.900	1.017	0.934	0.873	0.940	4.91	10.6191
	62	o-Xylene	1.168	1.073	1.077	0.995	1.012	1.074	0.988	1.101	0.997	0.913	1.040	6.97	11.1484
	63	Styrene	0.720	0.670	0.702	0.688	0.714	0.762	0.716	0.821	0.740	0.701	0.723	5.92	11.1737
	64	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	13.8370
	65	Isopropylbenzene	2.356	2.408	2.391	2.389	2.578	2.600	2.456	2.776	2.749	2.521	2.522	5.99	11.5468
	66	Bromoform	0.292	0.316	0.342	0.335	0.407	0.350	0.357	0.400	0.404	0.421	0.362	11.98	11.6459
	67	1,1,2,2-Tetrachloroethane	0.432	0.525	0.524	0.494	0.567	0.477	0.470	0.517	0.497	0.513	0.502	7.36	11.7306
	68	4-Bromofluorobenzene	------	0.810	0.728	0.779	0.839	0.826	0.813	0.910	0.907	0.890	0.834	7.30	11.8744
	69	1,2,3-Trichloropropane	------	0.085	0.150	0.139	0.169	0.144	0.142	0.153	0.150	0.154	0.143	16.39	11.9123
	70	trans-1,4-Dichloro-2-butene	------	0.107	0.133	0.121	0.157	0.129	0.136	0.146	0.142	0.154	0.136	11.64	11.9453
	71	n-Propylbenzene	2.881	2.798	2.797	2.827	3.036	3.090	2.899	3.279	3.203	3.014	2.983	5.72	12.0310
	72	Bromobenzene	0.772	0.713	0.671	0.660	0.710	0.715	0.680	0.765	0.761	0.750	0.720	5.67	12.1642
	73	1,3,5-Trimethylbenzene	1.903	1.911	2.069	2.004	2.217	2.226	2.146	2.391	2.209	2.111	2.118	7.21	12.2082
	74	2-Chlorotoluene	1.982	1.892	1.923	1.801	1.919	1.952	1.793	2.011	1.927	1.793	1.899	4.16	12.2963
	75	4-Chlorotoluene	1.544	1.467	1.536	1.495	1.628	1.610	1.535	1.753	1.729	1.715	1.601	6.39	12.3403
	76	tert-Butylbenzene	1.950	2.047	2.140	2.118	2.328	2.354	2.293	2.525	2.285	2.162	2.220	7.59	12.6594
	77	1,2,4-Trimethylbenzene	2.032	1.882	1.956	2.006	2.207	2.203	2.115	2.328	2.164	2.088	2.098	6.36	12.7123
	78	sec-Butylbenzene	2.509	2.613	2.684	2.628	2.930	2.993	2.878	3.160	2.862	2.708	2.797	7.20	12.9236
	79	p-Isopropyltoluene	2.163	2.221	2.237	2.315	2.540	2.584	2.518	2.713	2.528	2.399	2.422	7.52	13.0765
	80	1,3-Dichlorobenzene	1.440	1.410	1.430	1.334	1.466	1.455	1.361	1.502	1.442	1.425	1.427	3.44	13.2647
	81	1,4-Dichlorobenzene	1.607	1.367	1.413	1.323	1.431	1.431	1.355	1.495	1.429	1.419	1.427	5.58	13.3858
	82	Benzyl chloride	0.908	0.889	0.918	0.870	1.003	0.931	0.941	1.013	0.959	1.067	0.950	6.47	13.5068
	83	n-Butylbenzene	1.847	1.937	2.070	1.948	2.194	2.208	2.138	2.286	2.201	2.042	2.087	6.83	13.5839
	84	1,2-Dichlorobenzene	1.491	1.286	1.342	1.282	1.413	1.358	1.294	1.375	1.314	1.305	1.346	4.94	13.8711
	85	1,2-Dibromo-3-chloropropane	0.121	0.077	0.103	0.099	0.127	0.103	0.105	0.110	0.107	0.116	0.107	12.84	14.8407
	86	1,2,4-Trichlorobenzene	0.878	0.790	0.816	0.821	0.902	0.895	0.875	0.950	0.900	0.839	0.867	5.65	15.9830
	87	Hexachlorobutadiene	0.218	0.311	0.340	0.331	0.352	0.379	0.346	0.385	0.366	0.321	0.335	14.16	16.1392
	88	Naphthalene	1.482	1.446	1.661	1.550	1.785	1.544	1.590	1.730	1.636	1.620	1.604	6.56	16.3572
	89	1,2,3-Trichlorobenzene	0.704	0.664	0.766	0.715	0.809	0.742	0.746	0.801	0.756	0.704	0.741	6.11	16.6884

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.8 Max_%RSD : 28.3

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = x0 + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
3	Chloromethane	0.02923	0.41361	0.9980
69	1,2,3-Trichloropropane	-0.00215	0.15213	0.9996

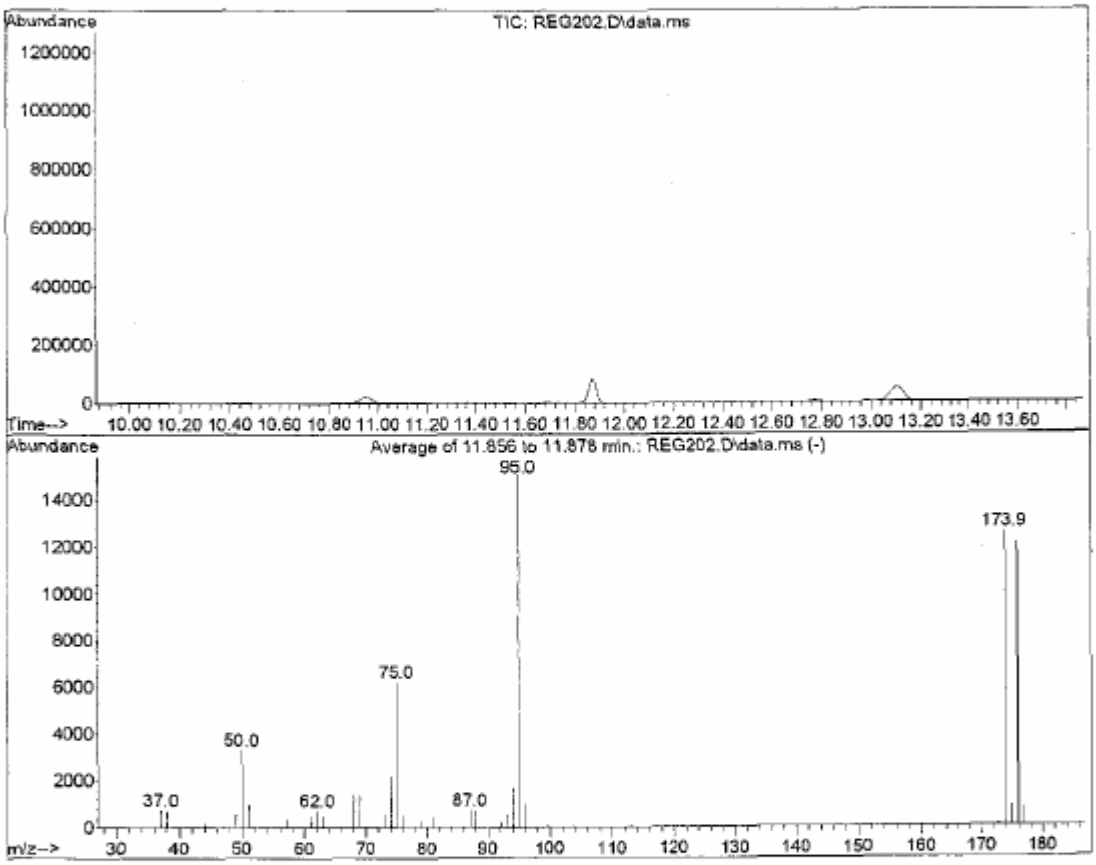
Figure 4: **TYPICAL INSTRUMENT PERFORMANCE CHECK (TUNING)**

BFB

```
Data Path : D:\Data\09E08\
Data File : REG202.D
Acq On    :  8 May 2009  11:08
Operator  : CGM
Sample    : BFBE2E10
Misc      : T/CHK
ALS Vial  : 1   Sample Multiplier: 1

Integration File: rteint.p

Method    : C:\msdchem\1\METHODS\VOE2E08.M
Title     : METHOD  8260  10mL
Last Update  : Wed May 13 13:05:40 2009
```



AutoFind: Scans 815, 816, 817; Background Corrected with Scan 810

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	3288	PASS
75	95	30	60	40.9	6175	PASS
95	95	100	100	100.0	15091	PASS
96	95	5	9	6.5	976	PASS
173	174	0.00	2	0.9	111	PASS
174	95	50	100	83.1	12540	PASS
175	174	5	9	6.8	849	PASS
176	174	95	101	96.3	12070	PASS
177	176	5	9	6.3	765	PASS

VOE2E08.M Wed May 13 13:06:56 2009 Page: 1

Figure 5: **TYPICAL INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY**

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REG208
Instrument ID: TOE2
GC Column: RTX502.2 ID: 0.32mm (mm)

Project: XYZ, INC.
SDG No.: 09E108
Date Analyzed: 05/08/09
Time Analyzed: 14:00
Heated Purge: (Y/N) N

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	437085	7.21	360505	10.47	188592	13.84
	UPPER LIMIT	874170	7.71	721010	10.97	377184	14.34
	LOWER LIMIT	218543	6.71	180253	9.97	94296	13.34
	SAMPLE ID						
1	VSTD010	507459	7.22	411195	10.47	226757	13.84
2	MBLK1W	516413	7.22	401562	10.47	236124	13.84
3	LCS1W	525586	7.22	424430	10.47	233099	13.84
4	LCD1W	520018	7.21	425171	10.47	230850	13.84
5	TRIP01-05052009	507617	7.22	396523	10.47	232631	13.84
6	TRIP02-05062009	472644	7.22	364071	10.47	210029	13.84
7	45MW13-05062009	499453	7.22	394036	10.47	231414	13.84
8	45MW13-05062009MS	504742	7.21	417810	10.47	234683	13.84
9	45MW13-05062009MSD	519198	7.22	424344	10.47	241377	13.84
10	45MW08-05052009	524027	7.22	400210	10.47	231882	13.84
11	45MW10-05052009	512150	7.22	407314	10.47	221461	13.84
12	45MW10D-05052009	543481	7.22	434322	10.47	229178	13.84
13	45MW11-05052009	612985	7.22	459226	10.48	234255	13.84
14	45MW12-05052009	509816	7.22	418635	10.48	240019	13.84

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
AREA UPPER LIMIT = + 50% of surrogate area
AREA LOWER LIMIT = - 50% of surrogate area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.
page 1 of 1

FORM VIII VOA-8260 1/2000

Figure 6: **TYPICAL SAMPLE RESULT SUMMARY REPORT**

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : XYZ, INC.	Date Collected: 05/06/09
Project : CLEAN WATER PROJECT	Date Received: 05/08/09
Batch No. : 09E108	Date Extracted: 05/08/09 22:51
Sample ID: 45MW13-05062009	Date Analyzed: 05/08/09 22:51
Lab Samp ID: E108-07	Dilution Factor: 1
Lab File ID: REG230	Matrix : WATER
Ext Btch ID: VOE2E11	% Moisture : NA
Calib. Ref.: REG208	Instrument ID : T-OE2

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,1-TCA	3.0	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TCA	ND	1.0	0.20
1,1-DCA	0.88F	1.0	0.20
1,1-DCE	1.5	1.0	0.20
1,1-DICHLOROPROPENE	ND	1.0	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.20
1,2,3-TRICHLOROPROPANE	ND	1.0	0.50
1,2,4-TRICHLOROBENZENE	ND	1.0	0.20
1,2,4-TRIMETHYLBENZENE	5.5	1.0	0.20
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DCB	ND	1.0	0.20
1,2-DCA	ND	1.0	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.20
1,2-DIBROMOETHANE (EDB)	ND	1.0	0.20
1,3,5-TRIMETHYLBENZENE	1.3	1.0	0.20
1,3-DCB	ND	1.0	0.20
1,3-DICHLOROPROPANE	ND	1.0	0.20
1,4-DCB	ND	1.0	0.20
1-CHLOROHEXANE	ND	1.0	0.20
2,2-DICHLOROPROPANE	ND	1.0	0.20
2-CHLOROTOLUENE	ND	1.0	0.20
4-CHLOROTOLUENE	ND	1.0	0.20
BENZENE	0.56F	1.0	0.20
BROMOBENZENE	ND	1.0	0.20
BROMOCHLOROMETHANE	ND	1.0	0.20
BROMODICHLOROMETHANE	ND	1.0	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	3.0	0.20
CARBON TETRACHLORIDE	ND	1.0	0.20
CHLOROBENZENE	ND	1.0	0.20
CHLOROETHANE	ND	1.0	0.20
CHLOROFORM	0.83F	1.0	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DCE	62	1.0	0.20
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.20
DIBROMOCHLOROMETHANE	ND	1.0	0.20
DIBROMOMETHANE	ND	1.0	0.20
DICHLORODIFLUOROMETHANE	ND	1.0	0.30
ETHYLBENZENE	5.3	1.0	0.20
HEXACHLOROBUTADIENE	ND	1.0	0.20
ISOPROPYL BENZENE	0.65F	1.0	0.20
M/P-XYLENE	30	2.0	0.50
METHYLENE CHLORIDE	ND	1.0	0.50
N-BUTYLBENZENE	0.34F	1.0	0.20
N-PROPYLBENZENE	0.62F	1.0	0.20
NAPHTHALENE	2.6	1.0	0.50
O-XYLENE	9.8	1.0	0.20
P-ISOPROPYLTOLUENE	0.37F	1.0	0.20
SEC-BUTYLBENZENE	0.26F	1.0	0.20
STYRENE	ND	1.0	0.20
TERT-BUTYLBENZENE	ND	1.0	0.20
TETRACHLOROETHENE	0.22F	1.0	0.20
TOLUENE	26	1.0	0.20
TRANS-1,2-DCE	0.40F	1.0	0.20
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.20
TCE	740J	1.0	0.20
TRICHLOROFLUOROMETHANE	ND	1.0	0.20
VINYL CHLORIDE	ND	1.0	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-140
TOLUENE-D8	107	70-140
4-BROMOFLUOROBENZENE	94	70-130

Figure 7: **TYPICAL LCS SUMMARY REPORT**

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: XYZ, INC.
PROJECT: CLEAN WATER PROJECT
BATCH NO.: 09E108
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VOE2E11Q VOE2E11L VOE2E11C
LAB FILE ID: REG226 REG222 REG223
DATE EXTRACTED: 05/08/0921:17 05/08/0919:44 05/08/0920:09 DATE COLLECTED: NA
DATE ANALYZED: 05/08/0921:17 05/08/0919:44 05/08/0920:09 DATE RECEIVED: 05/08/09
PREP. BATCH: VOE2E11 VOE2E11 VOE2E11
CALIB. REF: REG208 REG208 REG208

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	10.0	10.8	108	10.0	10.2	102	6	81-129	20
1,1,1-TCA	ND	10.0	10.2	102	10.0	9.64	96	6	67-132	20
1,1,2,2-Tetrachloroethane	ND	10.0	9.47	95	10.0	9.23	92	3	63-128	20
1,1,2-TCA	ND	10.0	10.7	107	10.0	10.3	103	4	75-125	20
1,1-DCA	ND	10.0	10.3	103	10.0	9.94	99	4	69-133	20
1,1-DCE	ND	10.0	10.5	105	10.0	9.92	99	5	68-130	20
1,1-Dichloropropene	ND	10.0	11.4	114	10.0	10.9	109	4	73-132	20
1,2,3-Trichlorobenzene	ND	10.0	10.2	102	10.0	9.96	100	3	67-137	20
1,2,3-Trichloropropane	ND	10.0	8.95	89	10.0	9.15	92	2	73-124	20
1,2,4-Trichlorobenzene	ND	10.0	10.3	103	10.0	10.0	100	3	66-134	20
1,2,4-Trimethylbenzene	ND	10.0	10.2	102	10.0	9.89	99	3	74-132	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.4	104	10.0	10.1	101	3	50-132	20
1,2-DCB	ND	10.0	10.1	101	10.0	9.81	98	2	71-122	20
1,2-DCA	ND	10.0	10.4	104	10.0	9.96	100	5	69-132	20
1,2-Dichloropropane	ND	10.0	10.7	107	10.0	10.2	102	5	75-125	20
1,2-Dibromoethane (EDB)	ND	10.0	10.4	104	10.0	9.72	97	7	80-121	20
1,3,5-Trimethylbenzene	ND	10.0	10.3	103	10.0	9.99	100	3	74-131	20
1,3-DCB	ND	10.0	10.0	100	10.0	9.59	96	4	75-124	20
1,3-Dichloropropane	ND	10.0	10.4	104	10.0	9.87	99	5	73-126	20
1,4-DCB	ND	10.0	9.83	98	10.0	9.57	96	3	74-123	20
1-Chlorohexane	ND	10.0	10.8	108	10.0	10.2	102	6	70-125	20
2,2-Dichloropropane	ND	10.0	9.81	98	10.0	9.62	96	2	69-137	20
2-Chlorotoluene	ND	10.0	9.48	95	10.0	9.30	93	2	73-126	20
4-Chlorotoluene	ND	10.0	9.63	96	10.0	9.37	94	3	74-128	20
Benzene	ND	10.0	10.3	103	10.0	9.71	97	6	81-122	20
Bromobenzene	ND	10.0	9.70	97	10.0	9.53	95	2	76-124	20
Bromochloromethane	ND	10.0	9.55	95	10.0	9.13	91	4	65-129	20
Bromodichloromethane	ND	10.0	10.3	103	10.0	10.1	101	1	76-121	20
Bromoform	ND	10.0	9.90	99	10.0	9.89	99	0	69-128	20
Bromomethane	ND	10.0	9.66	97	10.0	9.42	94	3	30-141	20
Carbon Tetrachloride	ND	10.0	11.0	110	10.0	10.2	102	8	66-138	20
Chlorobenzene	ND	10.0	10.6	106	10.0	10.1	101	5	81-122	20
Chloroethane	ND	10.0	9.91	99	10.0	10.0	100	1	58-133	20
Chloroform	ND	10.0	10.1	101	10.0	9.60	96	5	69-128	20
Chloromethane	ND	10.0	9.14	91	10.0	9.31	93	2	56-131	20
cis-1,2-DCE	ND	10.0	9.81	98	10.0	9.50	95	3	72-126	20
cis-1,3-Dichloropropene	ND	10.0	10.7	107	10.0	10.3	103	4	69-131	20
Dibromochloromethane	ND	10.0	10.6	106	10.0	10.3	103	3	66-133	20
Dibromomethane	ND	10.0	10.7	107	10.0	10.2	102	5	76-125	20
Dichlorodifluoromethane	ND	10.0	9.80	98	10.0	9.73	97	1	30-153	20
Ethylbenzene	ND	10.0	10.3	103	10.0	9.89	99	4	73-127	20
Hexachlorobutadiene	ND	10.0	10.5	105	10.0	9.96	100	5	67-131	20
Isopropyl Benzene	ND	10.0	10.2	102	10.0	9.80	98	4	75-127	20
m/p-Xylene	ND	20.0	20.8	104	20.0	19.9	100	4	76-128	20
Methylene Chloride	ND	10.0	9.70	97	10.0	9.50	95	2	63-137	20
n-Butylbenzene	ND	10.0	9.98	100	10.0	9.80	98	2	69-137	20
n-Propylbenzene	ND	10.0	9.77	98	10.0	9.47	95	3	72-129	20
Naphthalene	ND	10.0	10.1	101	10.0	9.52	95	5	54-138	20
o-Xylene	ND	10.0	10.5	105	10.0	10.0	100	5	80-121	20
p-Isopropyltoluene	ND	10.0	10.5	105	10.0	10.0	100	4	73-130	20
Sec-Butylbenzene	ND	10.0	10.3	103	10.0	9.89	99	4	72-127	20
Styrene	ND	10.0	10.7	107	10.0	10.1	101	5	65-134	20
Tert-Butylbenzene	ND	10.0	10.7	107	10.0	10.1	101	6	70-129	20
Tetrachloroethene	ND	10.0	11.3	113	10.0	10.4	104	8	66-128	20
Toluene	ND	10.0	10.6	106	10.0	10.2	102	4	77-122	20
Trans-1,2-DCE	ND	10.0	10.1	101	10.0	9.67	97	4	63-137	20
Trans-1,3-Dichloropropene	ND	10.0	10.6	106	10.0	10.4	104	2	59-135	20
TCE	ND	10.0	10.8	108	10.0	10.3	103	5	70-127	20
Trichlorofluoromethane	ND	10.0	9.36	94	10.0	9.47	95	1	57-129	20
Vinyl Chloride	ND	10.0	9.04	90	10.0	8.98	90	1	50-134	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.30	93	10.0	9.34	93	70-140
Toluene-d8	10.0	10.4	104	10.0	10.2	102	70-130

Figure 8: **TYPICAL MS/MSD REPORT SUMMARY**

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: XYZ, INC.
PROJECT: CLEAN WATER PROJECT
BATCH NO.: 09E108
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: 45MW13-05062009
LAB SAMP ID: E108-07 E108-07M E108-07S
LAB FILE ID: REG230 REG231 REG232
DATE EXTRACTED: 05/08/0922:51 05/08/0923:16 05/08/0923:39 DATE COLLECTED: 05/06/09
DATE ANALYZED: 05/08/0922:51 05/08/0923:16 05/08/0923:39 DATE RECEIVED: 05/08/09
PREP. BATCH: VOE2E11 VOE2E11 VOE2E11
CALIB. REF: REG208 REG208 REG208

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1,2-Tetrachloroethane	ND	10.0	10.4	104	10.0	10.3	103	1	81-129	20
1,1,1-TCA	2.95	10.0	13.0	100	10.0	12.4	95	5	67-132	20
1,1,2,2-Tetrachloroethane	ND	10.0	9.16	92	10.0	9.70	97	6	63-128	20
1,1,2-TCA	ND	10.0	10.7	107	10.0	10.5	105	3	75-125	20
1,1-DCA	0.882F	10.0	10.9	100	10.0	10.6	97	3	69-133	20
1,1-DCE	1.46	10.0	11.1	96	10.0	10.6	91	4	68-130	20
1,1-Dichloropropene	ND	10.0	10.9	109	10.0	10.7	107	2	73-132	20
1,2,3-Trichlorobenzene	ND	10.0	10.3	103	10.0	10.4	104	2	67-137	20
1,2,3-Trichloropropane	ND	10.0	8.65	87	10.0	8.71	87	1	73-124	20
1,2,4-Trichlorobenzene	ND	10.0	10.3	103	10.0	10.2	102	1	66-134	20
1,2,4-Trimethylbenzene	5.47	10.0	15.9	104	10.0	15.4	99	3	74-132	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	10.9	109	8	50-132	20
1,2-DCB	ND	10.0	9.62	96	10.0	9.43	94	2	71-122	20
1,2-DCA	ND	10.0	9.93	99	10.0	9.76	98	2	69-132	20
1,2-Dichloropropane	ND	10.0	10.5	105	10.0	10.3	103	1	75-125	20
1,2-Dibromoethane (EDB)	ND	10.0	9.94	99	10.0	10.1	101	2	80-121	20
1,3,5-Trimethylbenzene	1.28	10.0	11.4	101	10.0	11.0	97	4	74-131	20
1,3-DCB	ND	10.0	9.56	96	10.0	9.50	95	1	75-124	20
1,3-Dichloropropane	ND	10.0	9.95	99	10.0	10.1	101	2	73-126	20
1,4-DCB	ND	10.0	9.57	96	10.0	9.50	95	1	74-123	20
1-Chlorohexane	ND	10.0	11.0	110	10.0	10.8	108	2	70-125	20
2,2-Dichloropropane	ND	10.0	9.33	93	10.0	8.82	88	6	69-137	20
2-Chlorotoluene	ND	10.0	9.11	91	10.0	8.91	89	2	73-126	20
4-Chlorotoluene	ND	10.0	9.22	92	10.0	8.98	90	3	74-128	20
Benzene	0.564F	10.0	10.2	96	10.0	9.83	93	4	81-122	20
Bromobenzene	ND	10.0	9.20	92	10.0	9.20	92	0	76-124	20
Bromochloromethane	ND	10.0	9.27	93	10.0	8.82	88	5	65-129	20
Bromodichloromethane	ND	10.0	10.3	103	10.0	10.2	102	1	76-121	20
Bromoform	ND	10.0	9.42	94	10.0	9.61	96	2	69-128	20
Bromomethane	ND	10.0	10.2	102	10.0	9.80	98	4	30-141	20
Carbon Tetrachloride	ND	10.0	10.5	105	10.0	10.2	102	3	66-138	20
Chlorobenzene	ND	10.0	10.2	102	10.0	10.1	101	1	81-122	20
Chloroethane	ND	10.0	10.3	103	10.0	9.90	99	4	58-133	20
Chloroform	0.826F	10.0	10.5	97	10.0	10.1	93	4	69-128	20
Chloromethane	ND	10.0	9.91	99	10.0	9.44	94	5	56-131	20
cis-1,2-DCE	61.5	10.0	56.6	-49*	10.0	54.4	-71*	4	72-126	20
cis-1,3-Dichloropropene	ND	10.0	10.1	101	10.0	10.1	101	0	69-131	20
Dibromochloromethane	ND	10.0	10.3	103	10.0	10.4	104	1	66-133	20
Dibromomethane	ND	10.0	9.70	97	10.0	9.77	98	1	76-125	20
Dichlorodifluoromethane	ND	10.0	10.3	103	10.0	9.12	91	12	30-153	20
Ethylbenzene	5.32	10.0	15.5	102	10.0	15.3	99	1	73-127	20
Hexachlorobutadiene	ND	10.0	10.2	102	10.0	10.1	101	1	67-131	20
Isopropyl Benzene	0.650F	10.0	10.2	96	10.0	9.98	93	3	75-127	20
m/p-Xylene	30.2	20.0	50.3	100	20.0	49.6	97	1	76-128	20
Methylene Chloride	ND	10.0	9.60	96	10.0	9.27	93	4	63-137	20
n-Butylbenzene	0.343F	10.0	10.2	98	10.0	9.93	96	2	69-137	20
n-Propylbenzene	0.617F	10.0	10.1	95	10.0	9.65	90	4	72-129	20
Naphthalene	2.57	10.0	13.3	108	10.0	13.7	111	2	54-138	20
o-Xylene	9.84	10.0	20.1	102	10.0	19.8	99	1	80-121	20
p-Isopropyltoluene	0.369F	10.0	10.8	104	10.0	10.4	101	3	73-130	20
Sec-Butylbenzene	0.258F	10.0	10.3	101	10.0	10.1	99	2	72-127	20
Styrene	ND	10.0	10.9	109	10.0	10.8	108	1	65-134	20
Tert-Butylbenzene	ND	10.0	11.0	110	10.0	10.6	106	4	70-129	20
Tetrachloroethene	0.223F	10.0	10.8	106	10.0	10.8	106	0	66-128	20
Toluene	25.7	10.0	35.5	99	10.0	34.9	93	2	77-122	20
Trans-1,2-DCE	0.398F	10.0	10.3	99	10.0	9.66	93	6	63-137	20
Trans-1,3-Dichloropropene	ND	10.0	10.3	103	10.0	10.2	102	0	59-135	20
TCE	737J	10.0	717J	-203*	10.0	702J	-349*	2	70-127	20
Trichlorofluoromethane	ND	10.0	9.48	95	10.0	9.32	93	2	57-129	20
Vinyl Chloride	ND	10.0	9.31	93	10.0	8.75	88	6	50-134	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.74	97	10.0	9.45	94	70-140
Toluene-d8	10.0	10.2	102	10.0	10.3	103	70-140
4-Bromofluorobenzene	10.0	9.45	94	10.0	9.38	94	70-130

Figure 9: **TYPICAL CASE NARRATIVE**

CASE NARRATIVE

Client : XYZ, INC.

Project : CLEAN WATER PROJECT

SDG : 09E108

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of ten (10) water samples were received on 05/08/09 for Volatile Organics by GC/MS analysis, Method SW 5030B/8260B in accordance with AFCEE QAPP, Version 4.0

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source. Continuing calibration was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms for ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary form for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VOE2E11L/C were all within QC limits.
Percent recoveries for VOE2E13L/C were all within QC limits.

Matrix QC Sample
A set of MS/MSD was analyzed with the samples in this SDG.
Percent recoveries were within project QC limits except for results qualified with [*] in E108-07 M/S summary form, most likely due to matrix interference.
Check QC summaries form for details.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within projects QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.
One analyte in samples E108-01,-02,-03,-05T,-07 and three analytes in samples 09E108-04,-05 were manually integrated to correct improper integration.
Chromatograms of before and after manual integrations were retained with the initialed and corrected chromatograms.

Table 1: INITIAL CALIBRATION INTERMEDIATE STANDARD PREPARATION

ICAL/DCC Intermediate Standard	Stock Standard			Preparation (Solvent: Methanol)		Final Conc. (mg/L)
	Standard Name	Source	Conc. (mg/L)	Aliquot (µL)	Final Vol. (mL)	
I	1-Chlorohexane	AccuStandard	2000	50	2	50
	2-Chloroethylvinylether	CPI	2000	50	2	50
	Oxygenate Gasoline Additive	AccuStandard	2000-10000	50	2	50 - 250
	Custom VOA Mix	CPI	2000, 20000, 40000	50	2	50, 500, 1000
II	VOC Gas Mix	Ultra Scientific	2000	250	2	250
	Vinyl Acetate	CPI	2500	200	2	250
III	Carbon Disulfide	CPI	5000	100	2	250
IV	VOA Calibration Mix 1	Restek	5000	100	2	250
	Acrolein / Acrylonitrile	AccuStandard	5000	100	2	250

Table 2: INITIAL CALIBRATION VERIFICATION INTERMEDIATE STANDARD PREPARATION

ICV / LCS / MS Intermediate Standard	Stock Standard			Preparation (Solvent: Methanol)		Final Conc. (mg/L)
	Standard Name	Source	Conc. (mg/L)	Aliquot (µL)	Final Vol. (mL)	
I	1-Chlorohexane	Ultra Scientific	1000	100	2	50
	2-Chloroethylvinylether	AccuStandard	2000	50	2	50
	Chlorophenol	Restek	5000	20	2	50
	California Oxygenate Mix	Restek	2000 - 10000	50	2	50 - 250
	Custom 8260 Mega Mix	Restek	2000, 20000, 40000	50	2	50, 500, 1000
II	Volatile Organic Cpds Mix 6	Supelco	2000	250	2	250
	Vinyl Acetate	Restek	2000	250	2	250
III	TCL Volatile Mix 1	Supelco	2000	250	2	250
	Acrolein / Acrylonitrile	Ultra Scientific	2000	250	2	250

Table 3: SURROGATE / INTERNAL STANDARD PREPARATION

Intermediate Standard	Stock Standard			Preparation (Solvent: Methanol)		Final Conc. (mg/L)
	Standard Name	Source	Conc. (mg/L)	Aliquot (µL)	Final Vol. (mL)	
Surrogate	8260 Surrogate Mix	Restek	2500	200	2	250
Internal Standard	Custom 8260 Internal Standard Mix, 3-30	CPI	2500	200	2	250

Table 4: TUNING SOLUTION TANDARD PREPARATION

BFB Intermediate Standard	Stock Standard			Preparation (Solvent: Methanol)		Final Conc. (mg/L)
	Standard Name	Source	Conc. (mg/L)	Aliquot (µL)	Final Vol. (mL)	
Tuning Compound	BFB	Restek	5000	20	2	50

Table 5: TYPICAL INITIAL CALIBRATION AND QC STANDARDS CONCENTRATION LEVELS

ANALYTES	ICAL ANALYTE CONCENTRATIONS (µg/L) 25-ml Purge									ICV/DCC	LCS/MS
	1	2	3	4	5	6	7	8	9		
1,1,1,2-Tetrachloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1,1-Trichloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1,2,2-Tetrachloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1,2-Trichloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1-Dichloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1-Dichloroethene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,1-Dichloropropene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2,3-Trichlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2,3-Trichloropropane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2,4-Trichlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2,4-Trimethylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dibromo-3-chloropropane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dibromoethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dichlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dichloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dichloropropane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,3,5-Trimethylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,3-Dichlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1,3-Dichloropropane	0.3	0.5	1	2	5	10	20	30	40	10	10
1,4-Dichlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
1-Chlorohexane	0.3	0.5	1	2	5	10	20	30	40	10	10
2,2-Dichloropropane	0.3	0.5	1	2	5	10	20	30	40	10	10
2-Butanone (MEK)	1.5	2.5	5	10	25	50	100	150	200	50	50
2-Chloroethyl vinyl ether	0.3	0.5	1	2	5	10	20	30	40	10	10
2-Chlorotoluene	0.3	0.5	1	2	5	10	20	30	40	10	10
2-Hexanone	1.5	2.5	5	10	25	50	100	150	200	50	50
4-Chlorotoluene	0.3	0.5	1	2	5	10	20	30	40	10	10
4-Methyl-2-pentanone (MIBK)	1.5	2.5	5	10	25	50	100	150	200	50	50
Acetone	1.5	2.5	5	10	25	50	100	150	200	50	50
Acrolein	1.5	2.5	5	10	25	50	100	150	200	50	50
Acrylonitrile	1.5	2.5	5	10	25	50	100	150	200	50	50
Benzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromochloromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromodichloromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromoform	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromomethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Carbon disulfide	0.3	0.5	1	2	5	10	20	30	40	10	10
Carbon tetrachloride	0.3	0.5	1	2	5	10	20	30	40	10	10
Chlorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Chloroethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Chloroform	0.3	0.5	1	2	5	10	20	30	40	10	10
Chloromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
cis-1,2-Dichloroethene	0.3	0.5	1	2	5	10	20	30	40	10	10
cis-1,3-Dichloropropene	0.3	0.5	1	2	5	10	20	30	40	10	10
Dibromochloromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Dibromomethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Dichlorodifluoromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Diisopropyl ether (DIPE)	0.3	0.5	1	2	5	10	20	30	40	10	10
Ethyl Methacrylate	0.3	0.5	1	2	5	10	20	30	40	10	10
Ethylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Ethyl-tert-butyl ether (ETBE)	0.3	0.5	1	2	5	10	20	30	40	10	10
Freon 113	0.3	0.5	1	2	5	10	20	30	40	10	10
Hexachlorobutadiene	0.3	0.5	1	2	5	10	20	30	40	10	10
Iodomethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Isopropylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10

Table 5 (cont.) **TYPICAL INITIAL CALIBRATION AND QC STANDARDS CONCENTRATION LEVELS**

ANALYTES	ICAL ANALYTE CONCENTRATIONS (µg/L) 25-ml Purge									ICV/DCC	LCS/MS
	1	2	3	4	5	6	7	8	9		
m/p-Xylene	0.6	1	2	4	10	20	40	60	80	20	20
Methylene chloride	0.3	0.5	1	2	5	10	20	30	40	10	10
Methyl-t-butyl ether (MTBE)	0.3	0.5	1	2	5	10	20	30	40	10	10
Naphthalene	0.3	0.5	1	2	5	10	20	30	40	10	10
n-Butylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
n-Propylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
o-Xylene	0.3	0.5	1	2	5	10	20	30	40	10	10
p-Isopropyltoluene	0.3	0.5	1	2	5	10	20	30	40	10	10
sec-Butylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Styrene	0.3	0.5	1	2	5	10	20	30	40	10	10
tert-Amylmethyl ether (TAME)	0.3	0.5	1	2	5	10	20	30	40	10	10
tert-Butanol	1.5	2.5	5	10	25	50	100	150	200	50	50
tert-Butylbenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Tetrachloroethene	0.3	0.5	1	2	5	10	20	30	40	10	10
Toluene	0.3	0.5	1	2	5	10	20	30	40	10	10
trans-1,2-Dichloroethene	0.3	0.5	1	2	5	10	20	30	40	10	10
trans-1,3-Dichloropropene	0.3	0.5	1	2	5	10	20	30	40	10	10
trans-1,4-Dichloro-2-butene	0.3	0.5	1	2	5	10	20	30	40	10	10
Trichloroethene	0.3	0.5	1	2	5	10	20	30	40	10	10
Trichlorofluoromethane	0.3	0.5	1	2	5	10	20	30	40	10	10
Vinyl acetate	0.3	0.5	1	2	5	10	20	30	40	10	10
Vinyl chloride	0.3	0.5	1	2	5	10	20	30	40	10	10
1,2-Dichloroethane-d4	0.3	0.5	1	2	5	10	20	30	40	10	10
Bromofluorobenzene	0.3	0.5	1	2	5	10	20	30	40	10	10
Chlorobenzene-d5	0.3	0.5	1	2	5	10	20	30	40	10	10
Toluene-d8	0.3	0.5	1	2	5	10	20	30	40	10	10

Table 5 (cont.) TYPICAL INITIAL CALIBRATION AND QC STANDARDS CONCENTRATION LEVELS

Analytes	ICAL ANALYTE CONCENTRATIONS (µg/L) 5-ml Purge								ICV/DCC	LCS/MS
	1	2	3	4	5	6	7	8		
1,1,1,2-Tetrachloroethane	2	5	10	20	50	80	100	200	50	50
1,1,1-Trichloroethane	2	5	10	20	50	80	100	200	50	50
1,1,2,2-Tetrachloroethane	2	5	10	20	50	80	100	200	50	50
1,1,2-Trichloro-1,2,2-trifluoroethane	2	5	10	20	50	80	100	200	50	50
1,1,2-Trichloroethane	2	5	10	20	50	80	100	200	50	50
1,1-Dichloroethane	2	5	10	20	50	80	100	200	50	50
1,1-Dichloroethene	2	5	10	20	50	80	100	200	50	50
1,1-Dichloropropene	2	5	10	20	50	80	100	200	50	50
1,2,3-Trichlorobenzene	2	5	10	20	50	80	100	200	50	50
1,2,3-Trichloropropane	2	5	10	20	50	80	100	200	50	50
1,2,4-Trichlorobenzene	2	5	10	20	50	80	100	200	50	50
1,2,4-Trimethylbenzene	2	5	10	20	50	80	100	200	50	50
1,2-Dibromo-3-chloropropane	2	5	10	20	50	80	100	200	50	50
1,2-Dibromoethane	2	5	10	20	50	80	100	200	50	50
1,2-Dichlorobenzene	2	5	10	20	50	80	100	200	50	50
1,2-Dichloroethane	2	5	10	20	50	80	100	200	50	50
1,2-Dichloropropane	2	5	10	20	50	80	100	200	50	50
1,3,5-Trimethylbenzene	2	5	10	20	50	80	100	200	50	50
1,3-Dichlorobenzene	2	5	10	20	50	80	100	200	50	50
1,3-Dichloropropane	2	5	10	20	50	80	100	200	50	50
1,4-Dichlorobenzene	2	5	10	20	50	80	100	200	50	50
1-Chlorohexane	2	5	10	20	50	80	100	200	50	50
2,2-Dichloropropane	2	5	10	20	50	80	100	200	50	50
2-Butanone (MEK)	10	25	50	100	250	400	500	1000	250	250
2-Chloroethyl vinyl ether	2	5	10	20	50	80	100	200	50	50
2-Chlorotoluene	2	5	10	20	50	80	100	200	50	50
2-Hexanone	10	25	50	100	250	400	500	1000	250	250
4-Chlorotoluene	2	5	10	20	50	80	100	200	50	50
4-Methyl-2-pentanone (MIBK)	10	25	50	100	250	400	500	1000	250	250
Acetone	10	25	50	100	250	400	500	1000	250	250
Acrolein	10	25	50	100	250	400	500	1000	250	250
Acrylonitrile	10	25	50	100	250	400	500	1000	250	250
Benzene	2	5	10	20	50	80	100	200	50	50
Bromobenzene	2	5	10	20	50	80	100	200	50	50
Bromochloromethane	2	5	10	20	50	80	100	200	50	50
Bromodichloromethane	2	5	10	20	50	80	100	200	50	50
Bromoform	2	5	10	20	50	80	100	200	50	50
Bromomethane	2	5	10	20	50	80	100	200	50	50
Carbon disulfide	2	5	10	20	50	80	100	200	50	50
Carbon tetrachloride	2	5	10	20	50	80	100	200	50	50
Chlorobenzene	2	5	10	20	50	80	100	200	50	50
Chloroethane	2	5	10	20	50	80	100	200	50	50
Chloroform	2	5	10	20	50	80	100	200	50	50
Chloromethane	2	5	10	20	50	80	100	200	50	50
cis-1,2-Dichloroethene	2	5	10	20	50	80	100	200	50	50
cis-1,3-Dichloropropene	2	5	10	20	50	80	100	200	50	50
Dibromochloromethane	2	5	10	20	50	80	100	200	50	50
Dibromomethane	2	5	10	20	50	80	100	200	50	50
Dichlorodifluoromethane	2	5	10	20	50	80	100	200	50	50
Diisopropyl ether (DIPE)	2	5	10	20	50	80	100	200	50	50
Ethyl Methacrylate	2	5	10	20	50	80	100	200	50	50
Ethylbenzene	2	5	10	20	50	80	100	200	50	50
Ethyl-tert-butyl ether (ETBE)	2	5	10	20	50	80	100	200	50	50
Hexachlorobutadiene	2	5	10	20	50	80	100	200	50	50
Iodomethane	2	5	10	20	50	80	100	200	50	50
Isopropylbenzene	2	5	10	20	50	80	100	200	50	50

Table 5 (cont.) **TYPICAL INITIAL CALIBRATION AND QC STANDARDS CONCENTRATION LEVELS**

	ICAL ANALYTE CONCENTRATIONS (µg/L) 5-ml Purge									
Analytes	1	2	3	4	5	6	7	8	ICV/DCC	LCS/MS
m/p-Xylene	4	10	20	40	100	160	200	400	100	100
Methylene chloride	2	5	10	20	50	80	100	200	50	50
Methyl-t-butyl ether (MTBE)	2	5	10	20	50	80	100	200	50	50
Naphthalene	2	5	10	20	50	80	100	200	50	50
n-Butylbenzene	2	5	10	20	50	80	100	200	50	50
n-Propylbenzene	2	5	10	20	50	80	100	200	50	50
o-Xylene	2	5	10	20	50	80	100	200	50	50
p-Isopropyltoluene	2	5	10	20	50	80	100	200	50	50
sec-Butylbenzene	2	5	10	20	50	80	100	200	50	50
Styrene	2	5	10	20	50	80	100	200	50	50
tert-Amylmethyl ether (TAME)	2	5	10	20	50	80	100	200	50	50
tert-Butanol	10	25	50	100	250	400	500	1000	250	250
tert-Butylbenzene	2	5	10	20	50	80	100	200	50	50
Tetrachloroethene	2	5	10	20	50	80	100	200	50	50
Toluene	2	5	10	20	50	80	100	200	50	50
trans-1,2-Dichloroethene	2	5	10	20	50	80	100	200	50	50
trans-1,3-Dichloropropene	2	5	10	20	50	80	100	200	50	50
trans-1,4-Dichloro-2-butene	2	5	10	20	50	80	100	200	50	50
Trichloroethene	2	5	10	20	50	80	100	200	50	50
Trichlorofluoromethane	2	5	10	20	50	80	100	200	50	50
Vinyl acetate	2	5	10	20	50	80	100	200	50	50
Vinyl chloride	2	5	10	20	50	80	100	200	50	50
1,2-Dichloroethane-d4	2	5	10	20	50	80	100	200	50	50
Bromofluorobenzene	2	5	10	20	50	80	100	200	50	50
Toluene-d8	2	5	10	20	50	80	100	200	50	50

Table 6: BFB KEY ION ABUNDANCE CRITERIA

M/z	Required Intensity (relative abundance)
50	15 to 40% of m/z 95
75	30 to 60% of m/z 95
95	Base peak, 100% relative abundance
96	5 to 9% of m/z 95
173	Less than 2% of m/z 174
174	Greater than 50% of m/z 95
175	5 to 9% of m/z 174
176	Greater than 95% but less than 101% of m/z 174
177	5 to 9% of m/z 176

Table 7: ESTABLISHED DL, LOD AND LOQ

PARAMETER	Water (5mL Purge)			Water (25mL Purge)			Soil		
	DL	LOD	LOQ	DL	LOD	LOQ	DL	LOD	LOQ
Acetone	2.5	5	10	2.6	5	10	3	5	10
Acrolein	2.5	5	10	2.5	5	10	2.5	5	10
Acrylonitrile	2.5	5	10	2.5	5	10	2.5	5	10
Benzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Bromobenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Bromochloromethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Bromodichloromethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Bromoform	0.5	1	5	0.2	0.3	0.5	1	2	5
Bromomethane	1.1	2	5	0.2	0.3	0.5	1.8	2	5
tert-Butyl alcohol	7	10	25	2.5	5	10	9	10	20
2-Butanone (MEK)	2.5	5	10	2	4	10	2.5	5	10
n-Butylbenzene	0.7	1	5	0.2	0.2	0.5	0.7	1	5
sec-Butylbenzene	0.5	1	5	0.1	0.2	0.5	0.7	1	5
tert-Butylbenzene	0.5	1	5	0.1	0.2	0.5	0.6	1	5
Carbon disulfide	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Carbon tetrachloride	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Chlorobenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
2-Chloroethyl vinyl ether	1	2	5	0.5	1	2	1	2	5
Chloroethane	1	2	5	0.3	0.3	0.5	1	2	5
Chloroform	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1-Chlorohexane	0.5	1	5	0.1	0.2	0.5	0.6	1	5
Chloromethane	1	2	5	0.2	0.3	0.5	1	2	5
2-Chlorotoluene	0.5	1	5	0.1	0.2	0.5	0.8	1	5
4-Chlorotoluene	0.6	1	5	0.1	0.2	0.5	0.7	1	5
Isopropyl ether (DIPE)	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Dibromochloromethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2-Dibromo-3-chloropropane	1	2	5	0.25	0.5	1	1	2	5
1,2-Dibromoethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Dibromomethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1-Dichloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2-Dichloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2-Dichlorobenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,3-Dichlorobenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
trans-1,4-Dichloro-2-Butene	1	2	5	0.5	1	2	1	2	5
1,4-Dichlorobenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Dichlorodifluoromethane	1.3	2	5	0.2	0.3	0.5	1.2	2	5
1,1-Dichloroethene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
cis-1,2-Dichloroethene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
trans-1,2-Dichloroethene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Dichlorofluoromethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1-Dichloropropene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2-Dichloropropane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,3-Dichloropropane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
2,2-Dichloropropane	1	2	5	0.2	0.2	0.5	1	2	5
cis-1,3-Dichloropropene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
trans-1,3-Dichloropropene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
tert-Butyl ethyl ether (ETBE)	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Ethyl Methacrylate	1	2	5	0.25	0.5	1	1	2	5
Ethylbenzene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
2-Hexanone (MBK)	2.5	5	10	2	4	5	2.9	5	10

Table 7 (cont): ESTABLISHED DL, LOD AND LOQ

PARAMETER	Water (5mL Purge)			Water (25mL Purge)			Soil		
	DL	LOD	LOQ	DL	LOD	LOQ	DL	LOD	LOQ
Hexachlorobutadiene	0.5	1	5	0.2	0.3	0.5	1	2	5
Iodomethane	0.5	1	5	0.15	0.3	0.5	1	2	5
Isopropylbenzene	0.5	1	5	0.1	0.2	0.5	0.6	1	5
p-Isopropyltoluene	0.6	1	5	0.1	0.2	0.5	0.6	1	5
Methylene Chloride	0.5	1	5	0.3	0.5	1	1	2	5
4-Methyl-2-pentanone (MIBK)	2.5	5	10	2	4	5	2.8	5	10
tert-Butyl methyl ether	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Naphthalene	1	2	5	0.25	0.5	1	1	2	5
n-Propylbenzene	0.5	1	5	0.1	0.2	0.5	0.65	1	5
Styrene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
tert-Amyl methyl ether (TAME)	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1,1,2-Tetrachloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1,2,2-Tetrachloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Tetrachloroethene	0.5	1	5	0.15	0.2	0.5	0.5	1	5
Toluene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1,1-Trichloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,1,2-Trichloroethane	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2,3-Trichlorobenzene	0.5	1	5	0.15	0.3	0.5	1	2	5
1,2,4-Trichlorobenzene	0.5	1	5	0.15	0.3	0.5	1	2	5
Trichloroethene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
Trichlorofluoromethane	0.9	1	5	0.2	0.3	0.5	1.1	2	5
1,2,3-Trichloropropane	1	2	5	0.25	0.5	1	1	2	5
1,1,2-Trichloro1,2,2-trifluoroethane	1	2	5	0.2	0.3	0.5	1	2	5
1,2,4-Trimethylbenzene	0.5	1	5	0.1	0.2	0.5	0.6	1	5
1,3,5-Trimethylbenzene	0.5	1	5	0.1	0.2	0.5	0.6	1	5
Vinyl Acetate	1	2	5	0.25	0.5	1	1	2	5
Vinyl Chloride	0.6	1	5	0.1	0.2	0.5	1	2	5
m-Xylene & p-xylene	1	2	10	0.2	0.4	1	1	2	10
o-Xylene	0.5	1	5	0.1	0.2	0.5	0.5	1	5
1,2-Dichloroethane-d4	1	2	5	0.5	1	2	1	2	5
Toluene-d8	1	2	5	0.5	1	2	1	2	5
4-Bromofluorobenzene	1	2	5	0.5	1	2	1	2	5
Dibromofluoromethane	1	2	5	0.5	1	2	0.5	1	5

Table 8: CHARACTERISTIC IONS

ANALYTE	PRIMARY CHARACTERISTIC ION(S)	SECONDARY CHARACTERISTIC ION(S)
Acetone	43	58
Acetonitrile	41	40,39
Acrolein	56	55
Acrylonitrile	53	52, 51
Benzene	78	77, 52
Benzyl Chloride	91	126, 65, 125
Bromobenzene	156	51, 158
Bromochloromethane	49	128, 130
Bromoform	173	171, 175
Bromomethane	94	96
n-Butylbenzene	91	92, 134
sec-Butylbenzene	105	134
tert-Butylbenzene	119	91, 134
Carbon Disulfide	76	78
Carbon Tetrachloride[6]	119	117
Chlorobenzene	112	51, 77, 114
Chloroethane	64	49, 66
2-Chloroethyl vinyl ether	63	65, 106
Chloroform	83	85, 47
Chloromethane	50	52
2-Chlorotoluene	91	126
4-Chlorotoluene	91	126
1,2-Dibromo-3-chloropropane	157	155, 175
Dibromochloromethane	129	127. 131
1,2-Dibromoethane	107	109
Dibromomethane	93	95, 174
1,2-Dichlorobenzene	146	111, 148
1,3-Dichlorobenzene	146	111, 148
1,4-Dichlorobenzene	146	111, 148
cis-1,4-Dichloro-2-butene	75	53, 77, 124, 89
trans-1,4-Dichloro-2-butene	53	88
Dichlorodifluoromethane	85	87, 50
1,1-Dichloroethane	63	65, 83
1,2-Dichloroethane	62	98, 64
1,1-Dichloroethene	61	63, 96
cis-1,2-Dichloroethene	96	61, 98
trans-1,2-Dichloroethene	61	96, 98
1,2-Dichloropropane	63	41, 76
1,3-Dichloropropane	76	63, 78
2,2-Dichloropropane	77	97, 79, 41

[6] Quantitation ion was changed due to co-elution (Carbon tetrachloride – 117 to 119)

Table 8 (cont): CHARACTERISTIC IONS

ANALYTE	PRIMARY CHARACTERISTIC ION(S)	SECONDARY CHARACTERISTIC ION(S)
1,1-Dichloropropene[7]	77	110, 75
cis-1,3-Dichloropropene	75	77, 39, 110
trans-1,3-Dichloropropene	75	77, 39, 110
Ethylbenzene	91	106
Hexachlorobutadiene	225	223, 227
Hexachloroethane	201	166, 199, 203
2-Hexanone	43	58, 100
Iodomethane	142	127, 141
Isopropyltoluene	105	120, 79, 103
Methyl-t-butyl ether	73	57
Methylene chloride	49	84, 86
Methyl ethyl ketone	43	72
4-Methyl-2-pentanone	43	58, 85, 100
Naphthalene	128	127
n-Propylbenzene	91	65, 120
Styrene	104	78, 103
1,2,3-Trichlorobenzene	180	182, 145
1,2,4-Trichlorobenzene	180	182, 145
1,1,1,2-Tetrachloroethane	131	133, 119, 117
1,1,2,2-Tetrachloroethane	83	131, 85
Tetrachloroethene	164	129, 131, 166
Toluene	92	91
1,1,1 -Trichloroethane	97	99, 61
1,1,2 -Trichloroethane	97	83, 85, 99
Trichloroethene	130	97, 132, 95
Trichlorofluoromethane	101	103
1,2,3-Trichloropropane	75	61, 77
1,2,4-Trimethylbenzene	105	120
1,3,5-Trimethylbenzene	105	120, 119
Vinyl acetate	43	86
Vinyl chloride	62	64
o-Xylene	91	106
m-Xylene	91	106
p-Xylene	91	106
INTERNAL STANDARDS / SURROGATES		
1,4-Difluorobenzene	114	88
Chlorobenzene-d5	117	82, 119
1,2-Dichlorobenzene-d4	152	150
4-Bromofluorobenzene	95	174, 176
1,2-Dichloroethane-d4	65	102
Toluene-d8	98	100

[7] Quantitation ion was changed due to co-elution (1,1-Dichloropropene – 75 to 77)

Table 9: INTERNAL STANDARDS WITH CORRESPONDING TARGET COMPOUNDS AND SURROGATES ASSIGNED FOR QUANTITATION

1,4-DIFLUOROBENZENE	**CHLOROBENZENE-D_5**	**1,2-DICHLOROBENZENE-D_4**
Dichlorodifluoromethane	1,1-Dichloropropene	Bromoform
Chloromethane	Carbon Tetrachloride	Isopropyl Benzene
Vinyl Chloride	Benzene	Bromofluorobenzene
Bromomethane	1,2-Dichloroethane	Bromobenzene
Chloroethane	Trichloroethene	1,1,2,2-Tetrachloroethane
Trichlorofluorometh	1,2-Dichloropropane	1,2,3-Trichloropropane
1,1-Dichloroethene	Bromodichloromethane	1,4-Dichloro-2-butene
1,1,2-Trichloro-1,2,2-trifluoroethane	Dibromomethane	n-Propylbenzene
Acetone	2-Chloroethyl Vinyl Ether	2-Chlorotoluene
Iodomethane	cis-1,3-Dichloropropene	4-Chlorotoluene
Carbon Disulfide	4-Methyl-2-Pentanone	1,3,5-Trimethylbenzene
Methylene Chloride	Toluene-d_8	tert-Butylbenzene
Acrylonitrile	Toluene	124-Trimethylbenzen
trans-1,2-Dichloroe	trans-1,3-Dichloropropene	Sec-Butylbenzene
Acrolein	Ethyl Methacrylate	1,3-Dichlorobenzene
MTBE	1,1,2-trichloroethane	1,4-Dichlorobenzene
1,1-Dichloroethane	Tetrachloroethene	p-Isopropyltoluene
Vinyl Acetate	1,3-Dichloropropane	1,2-Dichlorobenzene
2,2-Dichloropropane	2-Hexanone	n-Butylbenzene
cis-1,2-Dichloroeth	Dibromochloromethane	1,2-Dibromo-3-Chlorpropane
2-Butanone	1,2-Dibromoethane	1,2,4-Trichlorobenzene
Bromochloromethane	Chlorobenzene	Hexachlorobutadiene
Chloroform	1-Chlorohexane	Naphthalene
1,1,1-Trichloroetha	1,1,1,2-Tetrachloroethane	1,2,3-Trichlorobenzene
1,2-Dichloroethane-d_4	Ethylbenzene	
	m/p-Xylenes	
	o-Xylene	
	Styrene	

Appendix 1: **SUMMARY OF QUALITY CONTROL PROCEDURES**

QC PROCEDURE	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	1st Rvw	2nd Rvw
Check of mass spectral ion intensities using BFB	Prior to initial calibration and calibration verification	Refer to criteria listed in Table 6	Retune instrument and verify		
Minimum of 6-point initial calibration(ICAL)	Initially; as needed	SPCCs : RF $\geq$ 0.1 for Bromoform, Chloromethane and 1,1-Dichloroethane RF $\geq$ 0.3 for Chlorobenzene and 1,1,2,2-Tetrachloroethane CCCs: Chloroform, 1,1-DCE, 1,2-DCP, Ethylbenzene, Toluene and Vinyl Chloride. RFs for CCCs: RSD≤30% and one option below: 1). For analytes with RSD ≤ 15%, use RRFm 2). For analytes with RSD>15% and r ≥0..995, use either Inverse Weighting Factor or Linear Least Squares 3). For analytes with RSD>15% and COD ≥0.99, use non-linear regression (6 pts for second order, 7 pts for third order).	Check for outliers. Otherwise, optimize the instrument then repeat initial calibration.		
Initial calibration verification (ICV)	After initial calibration	In the absence of PSR All analytes within ± 20% of expected value except for the following compounds due to erratic chromatographic behavior: Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane within $\pm$ 35% of expected value.	Verify second source standard. Prepare fresh standard and rerun ICV. If that fails, Optimize instrument and repeat ICAL.		
Evaluation of relative retention times (RRT)	Each sample	Within ± 0.06 RRT units	Correct the problem then reanalyze all samples analyzed since the last retention time check		
Continuing Calibration verification (CCV)	Daily, before sample analysis and every 12 hours of analysis time	SPCCs: Min. RF same as ICAL CCC : %Diff $\leq$ 20% (when using RFs) or drift (when using least squares regression or non-linear calibration)	Correct the problem then repeat initial calibration		
Internal Standard (IS)	All samples	Retention time ± 30 seconds from retention time of the midpoint standard in the ICAL; EICP area within -50% to +100% of ICAL midpoint standard	Inspect mass spectrometer and GC for malfunctions; mandatory reanalysis of samples analyzed while system was malfunctioning		
Method blank (MB)	One per preparation batch	No analytes detected >½ LOQ	Determine the source of contamination and correct the problem. Re-prep and re-analyze MB and all associated samples. Otherwise, apply "B" to specific analyte(s) on associated samples		
LCS	One LCS per preparation	Within project QC Limits	Re-prep and re-analyze the LCS and all associated samples		
MS/MSD	One MS/MSD per every 20 project samples per matrix	Within project QC Limits	Check if sample was properly spiked. If indicative of matrix interference, discuss in case narrative, otherwise re-prep and re-analyze the sample		
Surrogate	Every Sample, MB, LCS, MS/MSD, DCC	Within project QC Limits	Correct the problem then re-analyze		
Comments: Refer to PSR for Flagging Criteria. Report values between LOD and LOQ.			Reviewed by:		
			Date:		

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Appendix 2: **DEMONSTRATION OF CAPABILITY**

Final Report - Soil / Hazardous Waste PT

Study: HW0110

Opening Date: January 18, 2010 - Closing Date: March 4, 2010

Laboratory: EMAX Laboratories
1825 205th Street
Torrance, CA 90501

Contact: Kenette Pimentel, Quality Assurance Manager
310-618-8889 ext. 205

EPA Lab ID: CA00291

Volatiles (PT-VOA-SOIL) — Lot #: 7039-12

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4315	Acetone	10184802	SW 5035/SW 8260 B	µg/kg	303	240	103 - 495	Acceptable
4375	Benzene	10184802	SW 5035/SW 8260 B	µg/kg	105	94.4	62.6 - 144	Acceptable
4395	Bromodichloromethane	10184802	SW 5035/SW 8260 B	µg/kg	111	104	72.1 - 153	Acceptable
4400	Bromoform	10184802	SW 5035/SW 8260 B	µg/kg	<9.3	<5		Acceptable
4410	2-Butanone (MEK)	10184802	SW 5035/SW 8260 B	µg/kg	255	213	51.9 - 397	Acceptable
4455	Carbon tetrachloride	10184802	SW 5035/SW 8260 B	µg/kg	<9.9	<5		Acceptable
4475	Chlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	179	176	102 - 248	Acceptable
4575	Chlorodibromomethane	10184802	SW 5035/SW 8260 B	µg/kg	58.8	55.8	34.3 - 82.2	Acceptable
4505	Chloroform	10184802	SW 5035/SW 8260 B	µg/kg	110	111	66.4 - 153	Acceptable
4610	1,2-Dichlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	131	129	63.4 - 185	Acceptable
4615	1,3-Dichlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	50.5	48	17.6 - 74.7	Acceptable
4620	1,4-Dichlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	97.0	95	33.5 - 138	Acceptable
4630	1,1-Dichloroethane	10184802	SW 5035/SW 8260 B	µg/kg	44.0	43.9	24.4 - 64.2	Acceptable
4635	1,2-Dichloroethane	10184802	SW 5035/SW 8260 B	µg/kg	45.0	54	26.7 - 63.9	Acceptable
4655	1,2-Dichloropropane	10184802	SW 5035/SW 8260 B	µg/kg	80.8	79.9	47.5 - 109	Acceptable
4765	Ethylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	<9.0	<5		Acceptable
4975	Methylene chloride	10184802	SW 5035/SW 8260 B	µg/kg	108	100	50.4 - 157	Acceptable
5000	Methyl-tert-butyl ether (MTBE)	10184802	SW 5035/SW 8260 B	µg/kg	144	142	60.9 - 213	Acceptable
4995	4-Methyl-2-pentanone (MIBK)	10184802	SW 5035/SW 8260 B	µg/kg	232	176	102 - 337	Acceptable
5005	Naphthalene	10184802	SW 5035/SW 8260 B	µg/kg	93.3	78.3	52.8 - 134	Acceptable
5105	1,1,1,2-Tetrachloroethane	10184802	SW 5035/SW 8260 B	µg/kg	52.5	52.5	33.7 - 73.7	Acceptable
5110	1,1,2,2-Tetrachloroethane	10184802	SW 5035/SW 8260 B	µg/kg	152	133	78.9 - 220	Acceptable
5115	Tetrachloroethene	10184802	SW 5035/SW 8260 B	µg/kg	51.5	47.5	22.7 - 74.1	Acceptable
5140	Toluene	10184802	SW 5035/SW 8260 B	µg/kg	47.4	44.5	26.7 - 67.1	Acceptable
5155	1,2,4-Trichlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	151	133	75.2 - 190	Acceptable
5160	1,1,1-Trichloroethane	10184802	SW 5035/SW 8260 B	µg/kg	44.8	44.9	23.6 - 63.5	Acceptable
5165	1,1,2-Trichloroethane	10184802	SW 5035/SW 8260 B	µg/kg	32.2	29.9	20.1 - 47.2	Acceptable
5170	Trichloroethene	10184802	SW 5035/SW 8260 B	µg/kg	113	99.6	58.1 - 162	Acceptable
5180	1,2,3-Trichloropropane	10184802	SW 5035/SW 8260 B	µg/kg	61.0	53.9	42.5 - 72.3	Acceptable
5260	Xylenes, total	10184802	SW 5035/SW 8260 B	µg/kg	157	155	76.8 - 233	Acceptable
NELAC Experimental Analytes								
4385	Bromobenzene	10184802	SW 5035/SW 8260 B	µg/kg	68.7	69.1	48.2 - 85.0	Acceptable
4950	Bromomethane	10184802	SW 5035/SW 8260 B	µg/kg	100	74.7	20.0 - 137	Acceptable
4485	Chloroethane	10184802	SW 5035/SW 8260 B	µg/kg	100	88.5	20.0 - 149	Acceptable
4960	Chloromethane	10184802	SW 5035/SW 8260 B	µg/kg	<20	7.35		Acceptable
4570	1,2-Dibromo-3-chloropropane (DBCP)	10184802	SW 5035/SW 8260 B	µg/kg	124	97.6	71.2 - 161	Acceptable
4585	1,2-Dibromoethane (EDB)	10184802	SW 5035/SW 8260 B	µg/kg	181	163	121 - 219	Acceptable
4625	Dichlorodifluoromethane	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4640	1,1-Dichloroethene	10184802	SW 5035/SW 8260 B	µg/kg	110	98.2	63.3 - 161	Acceptable
4645	cis-1,2-Dichloroethene	10184802	SW 5035/SW 8260 B	µg/kg	<10	<5		Acceptable
4700	trans-1,2-Dichloroethene	10184802	SW 5035/SW 8260 B	µg/kg	74.7	69.1	41.4 - 102	Acceptable
4680	cis-1,3-Dichloropropene	10184802	SW 5035/SW 8260 B	µg/kg	60.5	60.2	40.6 - 78.9	Acceptable
4685	trans-1,3-Dichloropropene	10184802	SW 5035/SW 8260 B	µg/kg	<10	<5		Acceptable
4860	2-Hexanone	10184802	SW 5035/SW 8260 B	µg/kg	177	145	67.6 - 257	Acceptable
4900	Isopropylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	88.0	85.6	45.5 - 124	Acceptable
5100	Styrene	10184802	SW 5035/SW 8260 B	µg/kg	83.2	82	54.1 - 111	Acceptable
5175	Trichlorofluoromethane	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
5235	Vinyl chloride	10184802	SW 5035/SW 8260 B	µg/kg	140	85.6	60.9 - 181	Acceptable
Additional State Specific Analytes								
4320	Acetonitrile	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4325	Acrolein	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4340	Acrylonitrile	10184802	SW 5035/SW 8260 B	µg/kg	76.0	70	22.7 - 129	Acceptable
4390	Bromochloromethane	10184802	SW 5035/SW 8260 B	µg/kg	136	135	40.9 - 232	Acceptable

Appendix 2 (Cont.): **DEMONSTRATION OF CAPABILITY**

Volatiles (PT-VOA-SOIL) cont'd								Lot #: 7039-12
NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd								
4435	n-Butylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	65.9	62	19.8 - 112	Acceptable
4440	sec-Butylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	144	137	43.3 - 245	Acceptable
4445	tert-Butylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	180	172	54.0 - 306	Acceptable
4450	Carbon disulfide	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4465	Chloroacetaldehyde	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
5765	bis(2-Chloroethyl)ether	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
5760	bis(2-Chloroethoxy)methane	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
5780	bis(2-Chloroisopropyl)ether	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4500	2-Chloroethylvinylether	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4535	2-Chlorotoluene	10184802	SW 5035/SW 8260 B	µg/kg	40.8	51	12.2 - 69.4	Acceptable
4540	4-Chlorotoluene	10184802	SW 5035/SW 8260 B	µg/kg	153	151	45.9 - 260	Acceptable
4595	Dibromomethane	10184802	SW 5035/SW 8260 B	µg/kg	52.5	50.7	16.2 - 91.8	Acceptable
4660	1,3-Dichloropropane	10184802	SW 5035/SW 8260 B	µg/kg	147	137	44.1 - 250	Acceptable
4665	2,2-Dichloropropane	10184802	SW 5035/SW 8260 B	µg/kg	84.7	85.1	25.4 - 144	Acceptable
4670	1,1-Dichloropropene	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
9375	DIPE	10184802	SW 5035/SW 8260 B	µg/kg	113	108	34.0 - 193	Acceptable
4840	Hexachloroethane	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4835	Hexachlorobutadiene	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4835	Hexachlorobutadiene	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
4910	p-Isopropyltoluene	10184802	SW 5035/SW 8260 B	µg/kg	40.4	39	12.1 - 68.7	Acceptable
5090	n-Propylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	36.4	34.9	10.9 - 61.9	Acceptable
4370	TAME	10184802	SW 5035/SW 8260 B	µg/kg	56.1	54.8	16.8 - 95.4	Acceptable
5150	1,2,3-Trichlorobenzene	10184802	SW 5035/SW 8260 B	µg/kg	99.1	91.1	29.7 - 168	Acceptable
5210	1,2,4-Trimethylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	155	149	46.4 - 263	Acceptable
5215	1,3,5-Trimethylbenzene	10184802	SW 5035/SW 8260 B	µg/kg	42.8	42	12.9 - 72.8	Acceptable
5225	Vinyl acetate	10184802	SW 5035/SW 8260 B	µg/kg	<20	<5		Acceptable
5250	o-Xylene	10174808	SW 5035/SW 8021 B	µg/kg	62.6	67.8	18.8 - 106	Acceptable
5250	o-Xylene	10184802	SW 5035/SW 8260 B	µg/kg	62.6	61.1	18.8 - 106	Acceptable
5240	m+p-Xylene	10184802	SW 5035/SW 8260 B	µg/kg	94.8	93.6	28.4 - 161	Acceptable

Final Report - Water Pollution Proficiency Testing

Study: WP0110

Opening Date: January 4, 2010 - Closing Date: February 18, 2010

Laboratory: EMAX Laboratories
1825 205th Street
Torrance, CA 90501

Contact: Kenette Pimentel, Quality Assurance Manager
310-618-8889 ext. 205

EPA Lab ID: CA00291

Volatiles (PT-VOA-WP)								Lot #: 8094-26
NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4375	Benzene	10184802	SW 5030 C/SW 8260 B	µg/L	17.1	16	11.4 - 22.8	Acceptable
4395	Bromodichloromethane	10184802	SW 5030 C/SW 8260 B	µg/L	61.1	67	43.2 - 82.5	Acceptable
4400	Bromoform	10184802	SW 5030 C/SW 8260 B	µg/L	86.1	82.4	56.1 - 119	Acceptable
4950	Bromomethane	10184802	SW 5030 C/SW 8260 B	µg/L	30.0	21.4	12.0 - 48.0	Acceptable
4455	Carbon tetrachloride	10184802	SW 5030 C/SW 8260 B	µg/L	22.4	25.5	12.7 - 31.0	Acceptable
4475	Chlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	64.7	63.2	46.6 - 81.0	Acceptable
4485	Chloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	90.5	80.3	36.2 - 145	Acceptable
4505	Chloroform	10184802	SW 5030 C/SW 8260 B	µg/L	80.8	82.4	56.0 - 104	Acceptable
4960	Chloromethane	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
4575	Dibromochloromethane	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
4610	1,2 Dichlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	85.9	82.1	59.8 - 111	Acceptable
4615	1,3 Dichlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	62.1	60.2	42.0 - 79.2	Acceptable
4620	1,4 Dichlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	25.0	24.9	16.5 - 32.4	Acceptable
4635	1,2 Dichloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	21.5	21.8	14.9 - 29.2	Acceptable
4640	1,1-Dichloroethene	10184802	SW 5030 C/SW 8260 B	µg/L	25.3	26.1	13.4 - 37.0	Acceptable
4700	trans-1,2-Dichloroethene	10184802	SW 5030 C/SW 8260 B	µg/L	23.2	22.1	12.3 - 34.6	Acceptable
4655	1,2-Dichloropropane	10184802	SW 5030 C/SW 8260 B	µg/L	61.1	59.2	40.0 - 80.7	Acceptable
4685	trans-1,3-Dichloropropene	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
4765	Ethylbenzene	10174808	SW 5030 C/SW 8021 B	µg/L	12.6	12.8	8.31 - 16.8	Acceptable
4765	Ethylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	12.6	12.1	8.31 - 16.8	Acceptable
4835	Hexachlorobutadiene	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
4975	Methylene Chloride	10184802	SW 5030 C/SW 8260 B	µg/L	106	110	65.0 - 146	Acceptable
4995	4-Methyl-2-pentanone (MIBK)	10184802	SW 5030 C/SW 8260 B	µg/L	36.9	31.9	13.5 - 59.0	Acceptable
5005	Naphthalene	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
5100	Styrene	10184802	SW 5030 C/SW 8260 B	µg/L	35.4	36.1	23.2 - 47.9	Acceptable
5110	1,1,2,2-Tetrachloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	140	120	83.3 - 202	Acceptable
5115	Tetrachloroethene	10184802	SW 5030 C/SW 8260 B	µg/L	19.1	19.1	9.61 - 25.3	Acceptable
5140	Toluene	10184802	SW 5030 C/SW 8260 B	µg/L	38.6	37.3	26.8 - 48.7	Acceptable
5155	1,2,4-Trichlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
5160	1,1,1-Trichloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	77.3	85.4	48.1 - 101	Acceptable
5165	1,1,2-Trichloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	32.9	31.2	23.0 - 43.5	Acceptable
5170	Trichloroethene	10184802	SW 5030 C/SW 8260 B	µg/L	0.00	<5		Acceptable
5175	Trichlorofluoromethane	10184802	SW 5030 C/SW 8260 B	µg/L	60.6	75.4	24.2 - 96.9	Acceptable
5235	Vinyl chloride	10184802	SW 5030 C/SW 8260 B	µg/L	36.5	31.2	14.6 - 58.4	Acceptable
5260	Xylenes, total	10184802	SW 5030 C/SW 8260 B	µg/L	204	204	117 - 272	Acceptable
NELAC Experimental Analytes								
4630	1,1-Dichloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	73.7	72.9	50.7 - 101	Acceptable
4645	cis-1,2-Dichloroethene	10184802	SW 5030 C/SW 8260 B	µg/L	110	93.9	80.8 - 145	Acceptable
4680	cis-1,3-Dichloropropylene	10184802	SW 5030 C/SW 8260 B	µg/L	67.2	69.1	47.0 - 87.4	Acceptable
4860	2-Hexanone	10184802	SW 5030 C/SW 8260 B	µg/L	154	203	79.7 - 226	Acceptable
5000	Methyl tert-butyl ether (MTBE)	10184802	SW 5030 C/SW 8260 B	µg/L	89.4	87.5	57.2 - 125	Acceptable
Additional State Specific Analytes								
4315	Acetone	10184802	SW 5030 C/SW 8260 B	µg/L	295	358	110 - 575	Acceptable
4320	Acetonitrile	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4325	Acrolein	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4340	Acrylonitrile	10184802	SW 5030 C/SW 8260 B	µg/L	108	101	43.2 - 173	Acceptable
4385	Bromobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4390	Bromochloromethane	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4410	2-Butanone (MEK)	10184802	SW 5030 C/SW 8260 B	µg/L	18.3	21.5	3.36 - 36.6	Acceptable
4435	n-Butylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable

Appendix 2 (Cont.): **DEMONSTRATION OF CAPABILITY**

Volatiles (PT-VOA-WP) cont'd								Lot #: 8094-26
NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd								
4440	sec-Butylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4445	tert-Butylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4450	Carbon disulfide	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4500	2-Chloroethylvinylether	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4535	2-Chlorotoluene	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4540	4-Chlorotoluene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4570	1,2-Dibromo-3-chloropropane (DBCP)	10184802	SW 5030 C/SW 8260 B	µg/L	102	96.7	40.8 - 163	Acceptable
4585	1,2-Dibromoethane (EDB)	10184802	SW 5030 C/SW 8260 B	µg/L	110	103	44.0 - 176	Acceptable
4595	Dibromomethane	10184802	SW 5030 C/SW 8260 B	µg/L	119	114	47.6 - 190	Acceptable
4625	Dichlorodifluoromethane	10184802	SW 5030 C/SW 8260 B	µg/L	6.00	<5	0.00 - 10.8	Acceptable
-	Dichlorofluoromethane	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4660	1,3-Dichloropropane	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4665	2,2-Dichloropropane	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4670	1,1-Dichloropropene	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
4900	Isopropylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
4910	p-Isopropyltoluene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
5090	n-Propylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<10	<5		Acceptable
5105	1,1,1,2-Tetrachloroethane	10184802	SW 5030 C/SW 8260 B	µg/L	43.1	46.9	17.2 - 69.0	Acceptable
5150	1,2,3-Trichlorobenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
5180	1,2,3-Trichloropropane	10184802	SW 5030 C/SW 8260 B	µg/L	62.4	59.6	25.0 - 99.8	Acceptable
5210	1,2,4-Trimethylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<20	<5		Acceptable
5215	1,3,5-Trimethylbenzene	10184802	SW 5030 C/SW 8260 B	µg/L	<20	<5		Acceptable
5225	Vinyl acetate	10184802	SW 5030 C/SW 8260 B	µg/L	<5	<5		Acceptable
5240	m+p-Xylene	10184802	SW 5030 C/SW 8260 B	µg/L	136	137	54.4 - 218	Acceptable
5250	o-Xylene	10184802	SW 5030 C/SW 8260 B	µg/L	67.5	66.9	27.0 - 108	Acceptable

Page 1

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 2 ☐

Start Date: ☐ 5-ml Purge ☐ 25-ml Purge Book # AD3 -019

BATCH _____

Sample Prep. ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH	Matrix W Cl_2	Matrix S	Notes
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Instrument No.	D3
INITIAL CALIBRATION REFERENCE	
DATE	
ICAL ID	

STANDARDS		
NAME	ID	CONC. (mg/L)
DCC		
DCC		
DCC		
BFB		
IS/SURR.		
LCS		
LCS		
LCS		

SOLVENT	ID
METHANOL	
DATA FILE	

Electronic Data Archival	
Location	Date
HPCHEM_VOA/TOD3	

Comments: _____

Analyzed By: _____

Date Disposed: _____

Disposed By: _____

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8260FM: **INSTRUMENT MAINTENANCE LOG**

EMAX LABORATORIES, INC

Page 1

INSTRUMENT MAINTENANCE LOG

Instrument No: 05 Month: Year: 201_ Book # : MD3-005

DATE						
Bake Trap (210°C-260°C)						
Column Head Pressure (2-60 psi)						
Injector Port Temperature (160°C-220°C)						
Interface Temperature (250°C-280°C)						
Verify Computer Date and Time						
Check Gas Pressure (Daily)						
Check IS/Surrogate auto injection vial as appropriate (Daily)						
Check the foreline pump oil level (Weekly)						
AutoTune the MSD (As needed)						
Analyst's initial						
Trouble Shooting						
Problem(s) Encountered						
Return-to-Control (Analyst Initial)						

Code	Problems Encountered	Code	Corrrective Action

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APPENDIX B

ACCIDENT PREVENTION PLAN

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FINAL

Accident Prevention Plan

Appendix B to Work Plan

Preliminary Assessment/Site Inspection
Installation Restoration Program Site 75
Agricultural Well KAYO-SB
Naval Weapons Station Seal Beach
Seal Beach, California

June 21, 2011

Prepared for:

U.S. Department of the Navy
Naval Facilities Engineering Command, Southwest
San Diego, California

Prepared under:

Contract Number: N62473-09-D-2613
Delivery Order Number: 0018
DCN: AMJV-2613-0018-0006

Prepared by:

Accord MACTEC Joint Venture
1231 E. Dyer Road, Suite 265
Santa Ana, California 92705

and

Richard Brady and Associates
3710 Ruffin Road
San Diego, California 92123

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Final

Accident Prevention Plan

Preliminary Assessment/Site Inspection
Installation Restoration Program Site 75
Agricultural Well KAYO-SB

Naval Weapons Station Seal Beach
Seal Beach, California

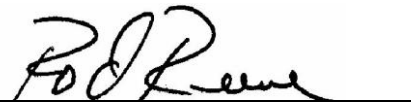
June 21, 2011

Contract Number N62473-09-D-2613
Delivery Order Number 0018

DCN Number: AMJV-2613-0018-0006

Prepared for:
Naval Facilities Engineering Command Southwest
1220 Pacific Highway, San Diego, California 92132-5190

REVIEW AND APPROVAL

Project Manager: Plan Preparer	 Qihai Chen Accord MACTEC Joint Venture	(626) 617-2171 Phone	June 21, 2011 Date
Program Manager: Plan Approval	 Rod Reeve Accord MACTEC Joint Venture	(760) 560-7714 Phone	June 21, 2011 Date
QC Manager: Plan Concurrence	 Yu Zeng Accord MACTEC Joint Venture	(858) 248-2083 Phone	June 21, 2011 Date

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TABLES

FIGURES

ATTACHMENTS

ABBREVIATIONS AND ACRONYMS

AEI	Accord Engineering, Inc.
AHA	Activity Hazard Analysis
AMJV	Accord MACTEC Joint Venture
APP	Accident Prevention Plan
bpm	beats per minute
BRADY	Richard Brady and Associates
DSITMS	direct sample ion trap mass spectrometry
EAP	Employee Assistance Program
HAZWOPER	Hazardous Waste Operations and Emergency Response
HR	heart rate
HSO	health and safety officer
IDW	investigation-derived waste
JSA	Job Safety Analysis
MACTEC	MACTEC Engineering and Consulting, Inc.
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVWPNSTA	Naval Weapons Station
OHS	occupational health and safety
OSHA	Occupational Safety and Health Administration
PA/SI	Preliminary Assessment/Site Inspection
PID	Photo-Ionization Detector
POC	point of contact
PPE	personal protective equipment
Project Team	comprised of AMJV and BRADY
RAC	risk assessment code
ROICC	Regional Officer In Charge of Construction
RPM	remedial project manager
Site 75	Installation Restoration Program Site 75
SSHP	Site Safety and Health Plan
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency

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1.0 BACKGROUND INFORMATION

The following information is presented as part of the background information required by the U.S. Army Corps of Engineers (USACE) Health and Safety Manual EM 385-1-1 to be included in an Accident Prevention Plan (APP), Activity Hazard Analysis (AHA), and Site Safety and Health Plan (SSHP) for the following project:

Contractor:	Accord MACTEC Joint Venture Contract Number: N62473-09-D-2613
Project Name:	Preliminary Assessment/Site Investigation, Installation Restoration Program Site 75, Agricultural Well KAYO-SB, Naval Weapons Station Seal Beach, Seal Beach, California

This APP, which contains the AHAs in Section 9 and the SSHP as Attachment 1, is prepared under the guidance of Naval Facilities Engineering Command Southwest (NAVFAC SW) for use at Naval Weapons Station (NAVWPNSTA) Seal Beach by the Project Team. The Project Team is comprised of Accord MACTEC Joint Venture (AMJV; Accord Engineering, Inc. [AEI] and MACTEC Engineering and Consulting, Inc. [MACTEC]) and Richard Brady and Associates (BRADY). This APP provides information to assist the Project Team's field personnel and supervisors in recognizing, understanding, and avoiding potential health and safety hazards associated with well installation and soil and groundwater sampling activities.

Installation Restoration Program Site 75 (Site 75), at the location of former agricultural well KAYO-SB, is located on the eastern side of the base approximately 1,500 feet south of Bolsa Avenue and approximately 400 feet west of Bolsa Chica Road. Well KAYO-SB was used as an irrigation source for a portion of NAVWPNSTA Seal Beach that was leased for crop production.

The objective of this PA/SI is to evaluate whether the volatile organic compounds (VOCs) previously discovered in groundwater from former agricultural well KAYO-SB, located on U.S. Navy (Navy) property, originate from a source within the Navy property line. Additionally, this investigation will provide characterization data to better understand the nature and local extent of contamination, assess the exposure pathways to human health and the environment, and refine the conceptual site model for Site 75 sufficient to determine if there is a need for further investigation.

Groundwater contamination was discovered in a well-water sample collected in September 2004 by the Orange County Water District. Analytical results from well KAYO-SB at that time showed the following VOC impact:

- trichloroethene – 25.3 micrograms per liter (μg/L)
- 1,1-dichloroethane – 13.8 μg/L
- 1,1-dichloroethene – 30.3 μg/L
- tetrachloroethene – 1.8 μg/L
- 1,1,1-trichloroethane – detected at trace levels

Based on the Orange County Water District sampling results, the Navy mandated the 2006 destruction of well KAYO-SB in order to eliminate human exposure to the contaminated groundwater and to prevent any future use of the well for crop-irrigation purposes.

The proposed well installations for this investigation include installation of an array of cluster monitoring wells designed to sample transmissive strata of interest. Key to the well design will be dynamic integration of the near real-time VOC and hydrogeologic data collected during the drilling phase for well-design use prior to the actual well installation.

The completed wells will yield groundwater elevation data and groundwater laboratory analytical results. These data will be used to address the main investigative objective concerning the source of the groundwater contamination at Site 75. Additionally, these data may allow identification of potential responsible parties.

The primary work elements for this Preliminary Assessment/Site Inspection (PA/SI) that require an AHA and SSHP include, but are not limited to, the following field activities at NAVWPNSTA Seal Beach:

- Install up to nine monitoring wells to depths of approximately 310 feet below ground surface using sonic drilling technology.
- Conduct high–density, real time, on-site VOC screening by U.S. EPA Method 8265 using direct sample ion trap mass spectrometry (DSITMS)
- Conduct two groundwater sampling events using low flow sampling techniques.

The phases of work and hazardous activities for this project that require an AHA and SSHP are as follows:

- General safe work practices, including emergency response.
- Driving to NAVWPNSTA Seal Beach and on base when working at the Site 75.
- Working with and around heavy equipment associated with groundwater monitoring well installation.
- Working in traffic controlled areas associated with groundwater monitoring well installation.
- Lifting and logging of soil boring materials that may potentially contain various VOC contaminants.
- Entering and exiting areas with potential history of unexploded ordnance (UXO). Hazards and responses associated with UXO is discussion further in Section 3 and 5 of the SSHP.
- Working in environments with potential animal, plant, and environmental hazards.
- Using low flow sampling equipment to conduct two groundwater-sampling events.

2.0 STATEMENT OF SAFETY AND HEALTH POLICY

Project Team personnel are the company's most important asset. Therefore, the prevention of job-related injuries and illnesses takes precedence over other considerations. AMJV's policy is to provide and maintain a safe and healthy working environment and to follow practices that will safeguard employees and result in improved efficiency. Safety is everyone's responsibility.

- **AMJV management** is responsible for providing the resources necessary to maintain a safe working environment, for establishing health and safety policies, and for ensuring policy implementation.
- **AMJV supervisors** are responsible for implementing health and safety policies and ensuring that day-to-day activities are conducted in a safe and healthy manner.
- **AMJV employees** are responsible for adhering to established health and safety policies and for performing their tasks in a manner that does not endanger themselves, others, or property.
- **AMJV subcontractors** are responsible for adhering to established health and safety policies and for performing their tasks in a manner that does not endanger themselves, others, or property.

The goals of the Health and Safety Program are described below.

It is AMJV policy to:

- Create a safe and healthy workplace and to ensure the health and safety of personnel involved in field, office, and other activities;
- Build respect for the environment;
- Continually improve occupational health and safety (OHS) performance;
- Integrate OHS considerations into business decision making;
- Represent best practices for health and safety management;
- Provide resources and training to carry out OHS policy;
- Support each AMJV field team in implementing APPs;
- Communicate AMJV OHS policy to the community, employees, and affected parties;
- Conform to the spirit of all applicable laws and regulations and ensure compliance with applicable federal, state, and local regulations regarding OHS;
- Provide a method for identifying hazards and reducing the risk of illness, injury, or death;
- Affirm the AMJV culture and commitment to best practice and individual responsibility; and
- Integrate safety and health across management systems for sustained, overall improvement and business excellence.

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3.0 RESPONSIBILITIES AND LINES OF AUTHORITY

This section describes the responsibilities of project personnel and discusses lines of authority between project personnel and NAVFAC SW.

The following program personnel and organizations are associated with Site 75 field activities. The organizational structure will be reviewed and updated as necessary during the course of the project.

Name	Title/Responsibility	Telephone No.
NAVWPNSTA Seal Beach		
Pei-Fen Tamashiro	NAVWPNSTA Seal Beach Point of Contact (POC)	Office: (562) 626-7897
Scott Kehe	NAVWPNSTA FEAD & Engineer in Charge (EIC)	Cell: (949) 726-2506
Dave Jenkins	NAVWPNSTA Explosive Safety	Office: 626-7096
NAVFAC SW		
Brenda Reese	NAVFAC SW Remedial Project Manager (RPM)	Office: (619) 532-4209
Narciso Ancog	NAVFAC SW Quality Assurance (QA) Officer	Office: (619) 532-3046
AMJV		
Rod Reeve	Program Manager	Office: (858) 771-3537 Cell: (760) 560-7714
Qihai Chen	Project Manager	Office: (858) 771-5339 Cell: (626) 617-2171
James Albright	Site Health and Safety Officer	Office: (714) 241-7200 Cell: (714) 492-5210
BRADY		
Jesse MacNeil	QA Manager	Office: (858) 634-4549
Tim Shields	Program Manager	Office: (858) 634-4514
Fred Essig	Project Manager	Office: (858) 634-4552
Jim Pierce	Data Manager	Office: (858) 634-4551

The Project Team's Project Managers and Site Health and Safety Officer (HSO) will be responsible for implementation and enforcement of the provisions of this APP. Their duties and the expectations for Project Team employees are described in the following sections.

3.1 Project Manager

The AMJV and BRADY Project Managers have ultimate responsibility for the implementation of the requirements set forth in this APP. Some responsibilities may be delegated to site- or task-dedicated personnel who report directly to the Project Manager. The Project Manager shall regularly confer with project personnel regarding APP compliance.

3.2 Site Health and Safety Officer

The Site HSO has been appointed by the Project Manager to be responsible for job safety inspections and for monitoring overall job site safety. The Site HSO will also be responsible for field implementation of tasks and procedures contained in this APP, including verifying that personnel working on site sign the APP Acknowledgement Agreement and daily Tailgate Safety Meeting forms (Attachment 2). In case of an emergency, the Site HSO will be responsible for establishing communication with emergency response organizations. Emergency contact information and phone numbers are listed in SSHP (Attachment 1) and will be posted on site at all times.

The Site HSO will have, at a minimum, Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and required 8-hour updates. The health and safety credentials of the field team are presented in Attachment 3. In addition, the Site HSO will have advanced fieldwork experience and will be familiar with health and safety requirements specific to the project. The Site HSO will also maintain the Site Log (Attachment 2).

3.3 Project Team Personnel

Project Team personnel are expected to fully participate in implementing this APP by providing documentation for required training, attending site safety meetings, wearing task-designated personal protective equipment (PPE), complying with site health and safety rules, and advising the Site HSO of health and safety concerns at a particular site.

3.4 Pre-Task Safety and Health Analysis

The USACE Safety and Health Requirements Manual specifies that a competent person be at each project site (USACE 2008). For this project, the competent person is the Site HSO who will be responsible for conducting regular, pre-work safety indoctrination meetings and tailgate safety meetings. During sonic drilling activities, the drilling subcontractor will provide a qualified and competent operator for the operation of the drilling equipment.

The subjects to be discussed at site-specific, pre-work safety indoctrination meetings are described in further detail in Section 5.0.

Other health and safety-related issues that may arise before on-site activities begin will also be discussed during the pre-work briefing. Personnel and visitors entering the site with the purpose of working on the tasks described in this APP will be required to review this APP, attend pre-work safety indoctrination meetings and tailgate safety meetings, and sign the APP Acknowledgement Agreement and the daily Tailgate Safety Meeting forms (Attachment 2).

3.5 Lines of Authority

This APP applies to activities and personnel performing activities during field inspection, documentation, and interviews. Enforcement of the APP will be rigorous. The Site HSO has the responsibility to act upon any health and safety issues that should arise and the authority to stop fieldwork if he or she deems that an unsafe work condition has developed or may develop. The Site HSO will collaborate with the Project Manager and the regulatory representatives who enforce the APP. Personnel who violate the APP will be verbally notified on first violation and the infraction will be noted by the Site HSO in a field logbook. On the second violation, the violator will be notified in writing, and the Project Manager and the violator's supervisor will be notified. A third violation will result in a written notification and

eviction of the violator from Site 75. The written notification will be sent to a human resource representative and the Site HSO.

Personnel will be encouraged to report to the Site HSO any conditions or practices that they consider detrimental to their health or safety or other personnel whom they believe are in violation of applicable health and safety standards. Such reports may be made orally or in writing without fear of retribution. Personnel who believe that an imminent danger threatens human health or the environment will be encouraged first to perform any necessary emergency procedures according to their formal training and then to immediately notify the Site HSO for further direction and follow up.

At least one copy of this APP will be available to site personnel during field activities. Minor changes in APP procedures will be discussed at the beginning of each workday by the Site HSO during the tailgate safety meeting. Significant plan revisions must be discussed with the Project Manager and Site HSO.

Clear and willful violations and disregard of established health and safety policies may result in disciplinary action including employment termination in accordance with company policy. Each employee found to be in noncompliance shall have the infraction documented and placed in his or her personnel file. The office manager is responsible for and authorized to cite employees for health and safety infractions. However, violations may be reported to the office manager by other employees if documentation or substantiation of the violation is available. Infractions will be discussed with the employee, at which time he or she may provide evidence indicating lack of wrongdoing.

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4.0 SUBCONTRACTORS AND SUPPLIERS

4.1 Identification of Subcontractor and Suppliers

BRADY is providing both technical and field support for this project. Their field personnel will be involved in both the groundwater monitoring well installation and the groundwater sampling activities.

Boart Longyear™ will provide sonic drilling services for the installation of seven groundwater monitoring wells. During sonic drilling activities, Boart Longyear will provide a qualified and competent operator for the operation of the drilling equipment.

EFR Environmental Service, Inc. will provide investigation-derived waste (IDW) disposal services for all IDW generated during field activities.

4.2 Means for Controlling and Coordinating Subcontractors

Each subcontractor will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete assigned tasks. In particular, each subcontractor is responsible for equipping its personnel assigned to this project with all required PPE.

4.3 Safety Responsibilities of Subcontractors

AMJV considers subcontractors to be experts in all aspects of the work operations they are tasked to provide. Each subcontractor, therefore, is responsible for compliance with those regulatory requirements that pertain to the services provided. All subcontractors are expected to perform their operations in accordance with their own individual safety policies and procedures to ensure that hazards associated with the performance of work activities are properly controlled. Copies of safety documentation for the subcontractor's work activities will be provided to AMJV for review prior to the start of on-site activities. In the event that subcontractor procedures/requirements conflict with requirements specified in this APP, the more stringent guidance will be adopted.

Hazards not listed in this APP, but known to any subcontractor or known to be associated with a subcontractor's services, must be identified and addressed during the daily field safety briefing prior to beginning work operations. Material Safety Data Sheet for chemicals used in groundwater sampling, sample preservation, and equipment calibration are included in Attachment 4. The Site HSO has the authority to halt any subcontractor operations and to remove any subcontractor or subcontractor employee from the work area for failure to comply with established health and safety procedures or for operating in an unsafe manner.

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5.0 TRAINING

5.1 Pre-Work Meeting Topics

The subjects to be discussed in site-specific, pre-work safety indoctrination meetings are as follows:

- Names of the Site HSO and the designated alternate
- Site history, as appropriate
- Safety concerns related to sonic drilling equipment
- Work tasks for the Site 75 field activities
- Hazardous materials that may be encountered on site
- Hazards that may be encountered on site, including heat stress, and biohazards such as spiders, snakes, scorpions, and poison oak
- "Buddy System" recommendations when necessary
- PPE, including type or types of respiratory protection to be used for work tasks
- Training requirements, when necessary
- Environmental surveillance equipment use and maintenance
- Action levels and situations requiring upgrade or downgrade of protection level
- Site control measures including site communications, control zones, and safe work practices
- Decontamination procedures when necessary
- Emergency response plans for field activities
- Emergency communication signals and codes
- Emergency meeting location (main gate of the base or any other secondary gate that is used to enter or exit the base)
- Environmental incident emergency procedures
- Personnel exposure and incident emergency procedures (in case of falls, exposure to hazardous substances, and other hazardous situations)
- Potential UXO hazards on site
- Emergency procedures for fire and explosion
- Emergency telephone numbers (cell phone numbers and land line numbers)
- Emergency contact information and hospital routes
- Other health and safety-related issues that may arise before on-site activities begin

5.2 Mandatory Training and Certifications

The Project Manager, Site HSO and key field personnel have completed, at a minimum, the OSHA 40-hour HAZWOPER training and required 8-hour updates for the activities to be performed at NAVWPNSTA Seal Beach. The health and safety credentials of the field team are presented in Attachment 3.

Workers must receive additional training, when required by OSHA standards, on specific job hazards. When entering sensitive areas such as the airfield and firing ranges, the field supervisor and other key field personnel will be escorted by NAVWPNSTA Seal Beach representatives.

5.3 Emergency Response Training

Emergency response training for this project is limited to situations associated with general work practice and field inspection activities. The training topics for emergency response are listed in Section 5.1 and will be covered in the pre-work indoctrination meeting.

5.4 Safety Meeting Requirements

The onsite Project Team personnel will be required to attend the daily, pre-work indoctrination training as described in Section 5.1.

The USACE Safety and Health Requirements Manual specifies that a competent person be at each project site (USACE 2008). For this project, the competent person is the Site HSO. The Site HSO will conduct the tailgate safety meeting. During sonic drilling activities, the drilling subcontractor will provide a competent operator for the operation of the drilling equipment.

Personnel and visitors entering the site with the purpose of working on the tasks described in this APP will be required to review this APP and sign the APP Acknowledgement Agreement form; on-site personnel also will be required to sign the Tailgate Safety Meeting form (Attachment 2).

5.5 OSHA Voluntary Protection Program

NAVWPNSTA Seal Beach is a Voluntary Protection Program (VPP) Challenge site and requires all prime contractors and subcontractors to comply with OSHA standards, DOD, Navy and NAVWPNSTA Seal Beach Safety and Health regulations.

NAVFAC contractors must comply with the above regulations as well as any other regulations specified in the contract. All prime contractors and subcontractors shall observe the following while on base:

Employers Shall:

- Record and report all injuries of their employees per 29CFR1904
- Provide a safe and healthful work environment for their employees
- Require their employees to follow safety rules, standards, and regulations
- Take action to hold employees accountable for non-compliance of safety rules, standards, and regulations
- Review work sites daily to identify any existing workplace hazards and get them corrected, or implement interim controls to protect employees

Employees Shall:

- Comply with all safety rules, standards, and regulations
- Report unsafe conditions and safety hazards to their supervisor
- Mentor co-workers in safety and health
- Report all on the job injuries to their supervisor immediately

Security Requirements:

- All personnel working onboard NAVWPNSTA Seal Beach are required to have and display an ID badge issued by the Security Pass & ID Office.
- Badge applications can be obtained from the Pass & ID Office at the Main Gate. Badges will be issued on a per visit basis. Badges issued for extended periods are available through the RAPIDGATE entry protocol system.
- During periods of increased Force Protection Condition (FPCON), access may be restricted without prior notice.
- All vehicles entering NAVWPNSTA Seal Beach and detachments are required to be registered with the Pass & ID Office.
- The following documents are required for registration.
    - Valid state driver's license and registration
    - Proof of insurance
- Any questions please contact the Pass & ID Office at (562) 626-7230 between 0700-1600.

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6.0 SAFETY AND HEALTH INSPECTIONS

Field inspections or audits are conducted to ensure that the APP is being properly implemented at Site 75. The field audit should be conducted under the direction and guidance of the Site HSO. The audit will include a general evaluation of the overall implementation of the APP at Site 75. For example, the auditor should inspect work zones, observe PPE usage and monitoring procedures, and note general site housekeeping.

The Field Audit Checklist (Attachment 2) may be used by the inspector to evaluate field procedures. If the form is not used, an audit should include, at a minimum, the following:

- Records review (including training, safety briefing, APP sign-off, and other information)
- Work zone information
- Monitoring procedures and equipment, if any
- PPE clothing and equipment
- Decontamination information, if any

Completed audit checklists must be maintained with the project files. The inspector will provide a copy of the completed checklist, including any deficiencies, to the Site HSO and the Project Manager.

The Project Manager is responsible for ensuring that deficiencies are remedied in a timely manner.

Field inspections should be conducted at least monthly for each month that work is being performed in the field. During a field inspection, if the inspector discovers any unsafe practices or conditions that may endanger site personnel or create an environmental risk, immediate corrective action will be taken. If such action is not possible, the inspector will have the authority to shut down the operation to prevent serious injury or exposure to site personnel.

The Site HSO should also conduct regular inspections of site conditions, facilities, and equipment. To make safety inspections effective, a checklist of items that should be inspected (Attachment 2) should be used for each inspection.

AMJV is not aware of external inspection requirements from agencies such as the United States Environmental Protection Agency (U.S. EPA), California Department of Health Services, California OSHA, or other agencies.

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7.0 ACCIDENT REPORTING

7.1 Exposure Data

AMJV maintains a weekly record of hours worked. The Payroll Supervisor summarizes the project-specific data for the Project Manager every Thursday by extracting the data from the payroll software.

7.2 Accident Investigations, Reports, and Logs

All accidents require follow up (investigation and analysis) and reporting. Attachment 2 includes the Accident and Illness Investigation Report (or equivalent documentation). This report must be completed and submitted to the AMJV Project Manager immediately after an incident. The AMJV Project Manager will review the report and then forward it to the Site HSO for review. The report must include proposed actions to prevent similar incidents from occurring. The Site HSO must be fully informed of the corrective action process so that he or she may implement applicable elements of the process at other sites.

The AMJV Project Manager will report recordable incidents to the NAVFAC SW RPM, base POC, and FEAD by telephone or by e-mail immediately or as soon as practicable and within 24 hours.

7.3 Major Accidents

All accidents involving personal injury or exposure to potentially hazardous materials during any field activity must be reported immediately to the AMJV Project Manager. The Accident and Illness Investigation Report form should be used to document the accident. It is important to report all exposures and injuries even though the incident is not considered serious or no adverse health effects or symptoms are apparent at the time of occurrence. The following require immediate accident notification: a fatal injury, a permanent total disability, a permanent partial disability, the hospitalization of three or more people resulting from a single occurrence, or property damage of $200,000 or more.

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8.0 PLANS AND PROCEDURES REQUIRED BY THE SAFETY MANUAL

Details of activities and required procedures for this project are in the PA/SI Site 75 Work Plan. The following sections present a general description of plans required by the safety manual.

8.1 Required Plans

The activities covered by this APP, as detailed in Section 1.0, are to:

- Install up to nine monitoring wells at depths of up to 300 feet using sonic drilling technology.
- Conduct high-density, real-time, on-site VOC screening by U.S. EPA Method 8265 using DSITMS.
- Conduct two groundwater sampling events using low flow sampling techniques.

Table 8-1 contains a list of occupational risk and compliance plans that may be required by USACE EM 385-1-1, whether each plan is applicable to this project, and if so, its location in this APP. The following subsections present a general description of plans applicable to this project according to the safety manual.

Table 8-1. Summary of Required Occupational Risk and Compliance Plans

Plan	USACE EM 385-1-1 Section	Location in This APP
Layout plans	04.A.01	N/A
Emergency Response Plans:	-	-
(1) Procedures and Tests	01.E.01	N/A
(2) Spill Plans	01.E.01; 06.A.02	N/A
(3) Firefighting Plan	01.E.01; 19	N/A
(4) Posting of Emergency Telephone Numbers	01.E.05	Section 8.2
(5) Man Overboard/Abandon Ship	19.A.04	N/A
(6) Medical Support	03.A.02; 03.D	Section 8.3
Plan for Prevention of Alcohol and Drug Abuse	01.C.02	Section 8.4
Site Sanitation Plan	02	N/A
Access and Haul Road Plan	04.B	N/A
Hearing Protection and Noise Control	05.C	Section 8.5
Respiratory Protection Plan	05.G	N/A
Health Hazard Control Program	06.A	AHA and SSHP
Hazard Communication Program	06.B.01	N/A
Process Safety Management Plan	06.B.04	N/A
Lead Abatement Plan	06.B.05	N/A
Asbestos Abatement Plan	06.B.05	N/A
Radiation Safety Program	06.E.03.a	N/A
Abrasive Blasting	06.H.01	N/A
Heat/Cold Stress Monitoring Plan	06.I.02	AHA and SSHP
Crystalline Silica Monitoring Plan (Assessment)	06.M	N/A
Night Operations Lighting Plan	07.A.08	N/A
Fire Prevention Plan	09.A	N/A

Table 8-1. Summary of Required Occupational Risk and Compliance Plans

Plan	USACE EM 385-1-1 Section	Location in This APP
Wild Land Fire Management Plan	09.K	N/A
Hazardous Energy Control Plan	12.A.01	N/A
Critical Lift Plan	16.H	N/A
Contingency Plan for Severe Weather	19.A.03	N/A
Float Plan	19.F.04	N/A
Site-Specific Fall Protection and Prevention Plan	21.C	N/A
Demolition Plan (to include engineering survey)	23.A.01	N/A
Excavation/Trenching Plan	25.A.01	N/A
Emergency Rescue (Tunneling)	26.A.	N/A
Underground Construction Fire Prevention and Protection Plan	26.D.01	N/A
Compressed Air Plan	26.I.01	N/A
Formwork and Shoring Erection and Removal Plans	27.C	N/A
Pre-Cast Concrete Plan	27.D	N/A
Lift Slab Plans	27.E	N/A
Steel Erection Plan	27.F.01	N/A
Site Safety and Health Plan	28.B	Attachment 1
Blasting Safety Plan	29.A.01	N/A
Diving Plan	30.A.13	N/A
Munitions and Explosives of Concern Response Plan	33.A	N/A
Confined Space Program	34.A	N/A

Notes:
N/A Not applicable to this project
Prepared by/Date: Qihai Chen 06/21/2011
Checked by/Date: Rod Reeve 06/21/2011

8.2 Posting of Emergency Contact Phone Numbers

The emergency information listed in the SSHP (Attachment 1), provides the names and telephone numbers of emergency contact personnel and route maps to the nearest hospitals.

NOTE: ***The site-specific pages listing this information will be posted on site or will be readily available during field activities.***

8.3 Medical Support

In the event of a medical emergency, personnel will notify the appropriate emergency organization and will take direction from the Site HSO. In the event of a fire, explosion, or spill at the site (within the AMJV work area), the Site HSO will notify the appropriate local, state, and federal agencies.

Maps showing the routes from the work site covered by this APP to the nearest hospitals are provided in the SSHP (Attachment 1).

A person who becomes ill or injured during work may require decontamination. If the exposure or injury is minor, any decontamination necessary will be completed and first aid should be administered prior to patient transport. If the patient's condition is serious, partial decontamination will be completed (such as complete disrobing of the person and redressing the person in clean coveralls or wrapping the person in a blanket). First aid will be administered until an ambulance or paramedics arrive. Emergency response

personnel must be informed of the potential for contamination, and decontamination must be completed prior to transporting the injured person off site. All injuries and illnesses must be reported immediately to the Project Manager and Site HSO. In addition, at least two of the Project Team personnel on site will be trained in CPR, first aid, and bloodborne pathogen training.

8.4 Prevention of Alcohol and Drug Abuse Plan

The following plan for the prevention of alcohol and drug abuse will be implemented.

1. In accordance with the applicable company's Substance Abuse Policy, employees are not allowed to be under the influence of alcohol or drugs during site activities. If an employee is suspected of being under the influence of drugs or alcohol, they will be removed from the job site, and a mandatory drug test will be administered.

2. Employees are required to submit to testing under the circumstances described below:

    a. Whenever there is reasonable suspicion that the employee has or may have used drugs or alcohol in violation of established policy. "Reasonable suspicion" determinations will be made by personnel who have received training on the signs and symptoms of alcohol misuse and drug use.

    b. Whenever an employee causes or contributes to a work-related incident.

3. Random drug and alcohol tests may be conducted on employees in safety-sensitive positions and other positions as state or local law permits.

4. The refusal to submit to any drug or alcohol test that is required under established policy will result in the employee's immediate termination of employment.

5. The following conduct by employees is prohibited:

    a. Reporting for work or remaining on duty after the employee has consumed alcohol in any amount.

    b. Consuming alcohol at any time during an employee's workday or at company sponsored events or celebrations. This includes, but is not limited to, while an employee is on or off the premises of the company, as well as during the employee's meal and other break periods. This prohibition does not include the authorized and reasonable consumption of alcohol by an employee of legal drinking age at business functions or activities sponsored by the Company or a client. However, an employee who is requested to submit to a "reasonable suspicion" alcohol test as a result of such drinking and whose breath alcohol test result is 0.04 or greater will be considered to have consumed more than a reasonable amount and will be in violation of this policy.

    c. Engaging in any illegal or unauthorized use of drugs at any time while on or off duty.

    d. Engaging in the unlawful or unauthorized manufacture, distribution, dispensation, solicitation, sale, purchase, transfer or possession of drugs or alcohol while on employer-paid time, on the employer's premises, in the employer's vehicles, or while otherwise engaged in activities for or on behalf of the employer.

6. Employees who voluntarily self-identify themselves as having a drug or alcohol problem and who voluntarily request assistance for such problem will be referred to a substance abuse professional for an evaluation and for an appropriate counseling, treatment, or rehabilitation program, if recommended.

7. An Employee Assistance Program (EAP) will be provided and will include information concerning the effects and consequences of alcohol and drug use on an individual's health, work, and personal life, as well as the signs and symptoms of an alcohol or drug problem. In addition, the EAP will provide referral services to employees and their families seeking help with problems resulting from alcohol misuse and drug use.

8.5 Hearing Protection and Noise Control

Hearing protection will be required when sound pressure levels exceed the Permissible Exposure Levels, or PEL, outlined in Table 8-1, or as desired by individual workers when working around noise-producing equipment. Employees who may be exposed to hazardous noise must be participants in a hearing conservation program that meets the requirements of 29 CFR Part 1910.95. Hearing protection worn by personnel will comply with the requirements of 29 CFR Part 1910.95(j), and will provide a minimum noise reduction rating (NRR) of 21. Hearing protection will be worn at all times when normal conversation becomes difficult at distances of 3 feet or less, such as during the operation of heavy equipment. As a minimum, protection against the effects of hazardous noise exposure will be enforced whenever the sound-pressure level exceeds the limits and exposure times specified in Table 3-1.

Table 8-2. Permissible Noise Exposures

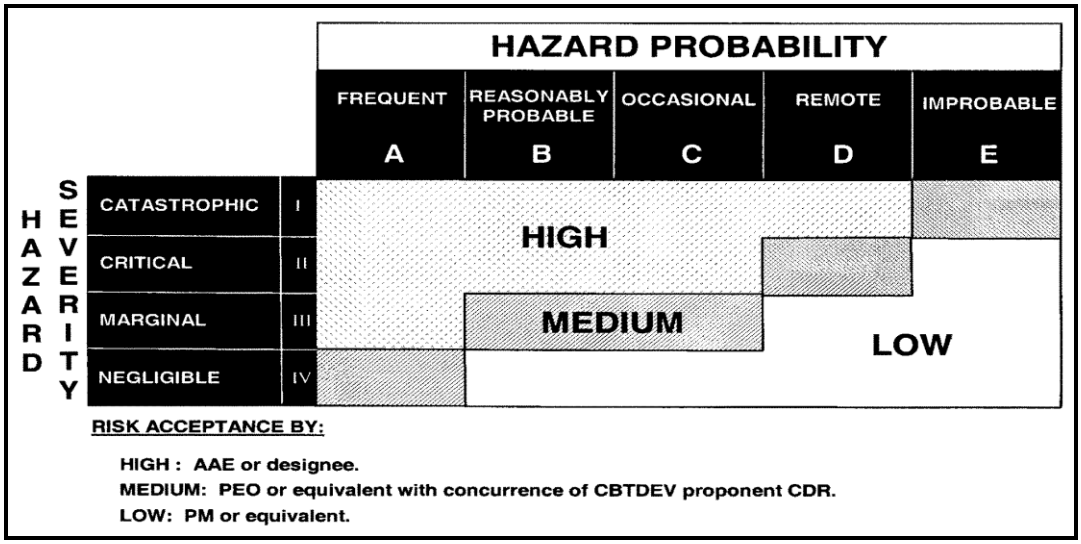
Duration (hours)	Sound-pressure level dB(A) slow response
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
½	110
¼	115

dB(A) = decibel A-weighted sound level

9.0 RISK MANAGEMENT PROCESSES

Site-specific hazards and controls are provided in this section as AHAs for the Site 75 field activities. Subcontractors will provide separate AHAs for activities that are performed by them.

Figure 9-1. Definition of Risk Assessment Code (RAC)



Notes:
Source: AR 70-1 Risk Decision Matrix.
Hazard Severity as specified in Table 9-1.
Hazard Probability as specified in Table 9-2.

Table 9-1. Incident Severity Categories

Severity of Incident	Category	Definition of Severity
Catastrophic	I	Could result in death or permanent, total disability and loss exceeding $1 million.
Critical	II	Could result in permanent, partial disability, injuries, or occupational illness that may result in hospitalization of at least three personnel, loss exceeding $200,000 but less than $1 million, and major system or subsystem loss.
Marginal	III	Could result in injury or occupational illness resulting in one or more lost work day(s) and loss exceeding $20,000 but less than $200,000.
Negligible	IV	Could result in injury or illness not resulting in a lost workday and loss exceeding $2,000 but less than $20,000.

Note: Adapted from MIL-STD-882D, 10 February 2000

Table 9-2. Incident Probability Levels

Probability Level of Incident	Category	Definition of Probability Level
Frequent	A	Continuously experienced
Probable	B	Will occur frequently
Occasional	C	Will occur several times
Remote	D	Unlikely, but can reasonably be expected to occur
Improbable	E	Unlikely to occur, but possible

Note: Adapted from MIL-STD-882D, 10 February 2000

Activity Hazard Analyses for Site 75 are presented in the tables below. These analyses were prepared by Qihai Chen (AMJV) and reviewed by Rod Reeve (AMJV). Additional Job Safety Analyses prepared by Boart Longyear for sonic drilling activities are presented in Attachment 5.

Table 9-3. Mobilization/Demobilization AHA

Activity/Phase	Potential Hazards	Recommended Actions / Controls	RAC
Mobilization/Site Setup/ Field Activities	1 Auto Accident	• Stay alert and be aware of other traffic around you. • Obey all traffic laws. • Use reduced speed during inclement weather. • Wear seat belt.	Med II (D)
	2 Struck by Passing Vehicles	• Park field-support vehicles as far from roads and public right-of-ways as possible. • Wear high visibility orange or green reflective vest when traffic hazards exist. • Look both ways before crossing a street. • Place traffic cones around field vehicles and support vehicles. If necessary, place cones in the road or public right-of-way and/or post a flag person to alert and direct all traffic.	Med II (D)
	3 Slip, Trip, Fall, Laceration, Cut, Abrasion to Skin	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work. • Create awareness though active monitoring of the site and field activities. • Wear proper clothing and safety equipment (gloves, boots, hard hats, eye protection, high-visibility orange or green reflective safety vest). • Have certification in first aid treatment and procedures. • Conduct daily health and safety briefings. • Ensure all personnel are trained in a proper response in case of an emergency.	Low III (D)
	4 Wild Animals and Insects	• Instruction in recognition and identification of wild animals and hazardous insects. • Wear protective clothing. • Stay away from potential animal burrows • Apply insect repellants. • If necessary, treat infested area with insecticides.	Med III (B)
	5 Poisonous Plants	• Instruction in recognition and identification of poisonous plants. • Wear protective clothing. • When practical, remove and destroy plant. • Cleanse affected body area with soap and water.	Low III (D)
	6 Material in Eyes, Foot Injuries, Head Injuries	• Use protective eyewear • Wear steel-toe boots. • If foot puncture hazard exists, employ the use of Rhino Tuff Insoles®. • Wear hard hat if overhead hazards exist.	Low III (D)

Table 9-3. Mobilization/Demobilization AHA

	7 Exposure to Severe Inclement Weather	• Wear clothing suitable for weather and work conditions. • During warm weather conditions, the minimum clothing allowed shall be a short sleeve shirt, long pants, and protective footwear. • Apply sunscreen lotion. • During cold weather conditions, dress in layers for appropriate level of warmth.	Low IV (D)
	8 Exposure to Chemical Hazards	• Wear appropriate levels of protective clothing (as outlined below). • When applicable, monitor for organic vapors and dust in work zones and breathing zones (as outlined in Sampling Activity Hazard Analysis). • Wash hands before eating and drinking. • Remove and properly store or dispose of contaminated clothing before leaving the work site.	Low III (D)
	9 Pinching Fingers, Dropping Objects on Feet, Back Strain	• Wear gloves and steel-toe boots • Never lift more than 50 pounds without mechanical assistance • Use proper lifting techniques.	Low III (D)
Equipment/ PPE to be Used	**Inspection Requirements**	**Training Requirements/ Procedures**	
• PID to monitor for volatile organic compounds (VOCs).	• Daily, ensure battery is charged and PID is calibrated.	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and SSHP prior to start of field activities. • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted.	
• First aid kit, fire extinguisher, potable eyewash station.	• Daily, ensure eye-wash station contains appropriate volume of clean, fresh water. • Follow manufactures instructions. Ensure fire extinguisher is properly certified.		
• Level D: Hard hat, short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, traffic safety vest, chemically-protective gloves when collecting and handling samples. • Use standard cloth or leather gloves when handling equipment.	• Daily		

Table 9-4. Underground Utilities Clearance AHA

Activity / Phase	Potential Hazards	Recommended Actions / Controls	RAC
Locating, marking, and clearing underground utilities.	1 Pinching Fingers, Dropping Objects on Feet, Back Strain	• Wear gloves and steel-toe boots • Never lift more than 50 pounds without mechanical assistance • Use proper lifting techniques.	Low III (D)
	2 Slip, Trip, Fall	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work.	Low III (D)
Equipment/PPE to be Used	**Inspection Requirements**	**Training Requirements / Procedures**	
• Level D: Short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples. • Use standard cloth or leather gloves when handling equipment.	Daily	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and the SSHP prior to the start of field activities. • Use safe lifting procedures • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted. • Obtain Navy as-built, if possible. Contact Underground Service Alert and have them conduct a subsurface survey of the site prior to commencing work.	

Table 9-5. Groundwater Monitoring Well Installation AHA

Activity/Phase	Potential Hazards	Recommended Actions/Controls	RAC
Mobilization/Site Setup/ Groundwater Monitoring Well Installation	1 Auto Accident	• Stay alert and be aware of other traffic around you. • Obey all traffic laws. • Use reduced speed during inclement weather. • Wear seat belt.	Med II (D)
	2 Struck by Passing Vehicles	• Park field-support vehicles as far from roads and public right-of-ways as possible. • Wear high-visibility orange or green reflective vest when traffic hazards exist. • Look both ways before crossing a street. • Place traffic cones around field vehicles and support vehicles. If necessary, place cones in the road or public right-of-way and/or post a flag person to alert and direct all traffic.	Med II (D)
	3 Slip, Trip, Fall, Laceration, Cut, Abrasion to Skin	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work. • Create awareness though active monitoring of the site and field activities. • Wear proper clothing and safety equipment (gloves, boots, hard hats, eye protection, high-visibility orange or green reflective safety vest). • Have certification in first aid treatment and procedures. • Conduct daily health and safety briefings. • Ensure all personnel are trained in a proper response in case of emergency.	Low III (D)
	4 Wild Animals and Insects	• Instruction in recognition and identification of wild animals and hazardous insects. • Wear protective clothing. • Stay away from potential animal burrows • Apply insect repellants. • If necessary, treat infested area with insecticides.	Med III (B)
	5 Poisonous Plants	• Complete instruction in recognition and identification of poisonous plants. • Wear protective clothing. • When practical, remove and destroy plant. • Cleanse affected body area with soap and water.	Low III (D)
	6 Material in Eyes, Foot Injuries, Head Injuries	• Use protective eyewear. • Wear steel-toe boots. • If foot puncture hazard exists, employ the use of Rhino Tuff Insoles®. • Wear hard hat if overhead hazards exist.	Low III (D)
	7 Exposure to Severe Inclement Weather	• Wear clothing suitable for weather and work. • During warm weather conditions, the minimum clothing allowed shall be a short-sleeve shirt, long pants, and protective footwear. • Apply sunscreen lotion. • During cold weather conditions, dress in layers for appropriate level of warmth.	Low IV (D)

Table 9-5. Groundwater Monitoring Well Installation AHA

Activity/Phase	Potential Hazards	Recommended Actions/Controls	RAC
	8 Exposure to Chemical Hazards	• Wear appropriate levels of protective clothing (as outlined below). • When applicable, monitor for organic vapors and dust in work zones and breathing zones (as outlined in Sampling Activity Hazard Analysis). • Wash hands before eating and drinking. • Remove and properly store or dispose of contaminated clothing before leaving the work site.	Low III (D)
	9 Pinching Fingers, Dropping Objects on Feet, Back Strain	• Wear gloves and steel-toe boots. • Never lift more than 50 pounds without mechanical assistance. • Use proper lifting techniques.	Low III (D)
	10 Sonic drill rig	• Wear hard hat. • Stay clear of moving mechanical parts. • Follow instructions from the operator and be aware of your surroundings. • Make sure the sonic drill rig is on solid footing.	Med II (D)

Equipment / PPE to be Used	Inspection Requirements	Training Requirements/Procedures
• PID to monitor for VOCs.	• Ensure battery is charged and PID is calibrated on a daily basis.	• All field personnel will have HAZWOPER 40-hour training, CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and SSHP prior to start of field activities. • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted. • Sonic drill rig operator is the only person allowed to operate the sonic drill rig. He/she will be in charge of providing safety guidelines when working near the drill rig.
• Level D: Hard hat, short- sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples (as necessary). • Use standard cloth or leather gloves when handling equipment.	• Daily	
• First aid kit, fire extinguisher.	• Ensure fire extinguisher is properly certified.	
• Sonic drill rig.	• Operator will inspect the vehicle to ensure all mechanical parts are working properly.	

Table 9-6. Groundwater/Soil Sampling AHA

Activity/Phase	Potential Hazards	Recommended Actions/Controls	RAC
Mobilization/Site Setup/ Groundwater/Soil Sampling	1 Auto Accident	• Stay alert and be aware of other traffic around you. • Obey all traffic laws. • Use reduced speed during inclement weather. • Wear seat belt.	Med II (D)
	2 Struck by Passing Vehicles	• Park field-support vehicles as far from roads and public right-of-ways as possible. • Wear high-visibility orange or green reflective vest when traffic hazards exist. • Look both ways before crossing a street. • Place traffic cones around field vehicles and support vehicles. If necessary, place cones in the road or public right-of-way and/or post a flag person to alert and direct all traffic.	Med II (D)
	3 Slip, Trip, Fall, Laceration, Cut, Abrasion to Skin	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work. • Create awareness though active monitoring of the site and field activities. • Wear proper clothing and safety equipment (gloves, boots, hard hats, eye protection high-visibility orange or green reflective safety vest). • Have certification in first aid treatment and procedures. • Conduct daily health and safety briefings. • Ensure all personnel are trained in proper response in case of an emergency.	Low III (D)
	4 Wild Animals and Insects	• Instruction in recognition and identification of wild animals and hazardous insects. • Wear protective clothing. • Stay away from potential animal burrows • Apply insect repellants. • If necessary, treat infested area with insecticides.	Med III (B)
	5 Poisonous Plants	• Complete instruction in recognition and identification of poisonous plants. • Wear protective clothing. • When practical, remove and destroy plant. • Cleanse affected body area with soap and water.	Low III (D)
	6 Material in Eyes, Foot Injuries, Head Injuries	• Use protective eyewear. • Wear steel-toe boots. • If foot puncture hazard exists, employ the use of Rhino Tuff Insoles®. • Wear hard hat if overhead hazards exist.	Low III (D)
	7 Exposure to Severe Inclement Weather	• Wear clothing suitable for weather and work. • During warm weather conditions, the minimum clothing allowed shall be a short-sleeve shirt, long pants, and protective footwear. • Apply sunscreen lotion. • During cold weather conditions, dress in layers for appropriate level of warmth.	Low IV (D)

Table 9-6. Groundwater/Soil Sampling AHA

Activity/Phase	Potential Hazards	Recommended Actions/Controls	RAC
	8 Exposure to Chemical Hazards	• Wear appropriate levels of protective clothing (as outlined below). • When applicable, monitor for organic vapors and dust in work zones and breathing zones (as outlined in Sampling Activity Hazard Analysis). • Wash hands before eating and drinking. • Remove and properly store or dispose of contaminated clothing before leaving the work site.	Low III (D)
	9 Pinching Fingers, Dropping Objects on Feet, Back Strain	• Wear gloves and steel-toe boots. • Never lift more than 50 pounds without mechanical assistance. • Use proper lifting techniques.	Low III (D)
Equipment / PPE to be Used	**Inspection Requirements**	**Training Requirements/Procedures**	
• PID to monitor for VOCs.	• Ensure battery is charged and PID is calibrated on a daily basis.	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and SSHP prior to start of field activities. • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted.	
• Level D: Hard hat, short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples (as necessary). • Use standard cloth or leather gloves when handling equipment.	• Daily.		
• First aid kit, fire extinguisher.	• Ensure fire extinguisher is properly certified.		

Table 9-7. Sample Collection and Preparation AHA

Activity/Phase	Potential Hazards	Recommended Actions/Controls	RAC
Collecting and Handling Groundwater/Soil Samples	1 Exposure to chemical hazards	• Wear appropriate levels of personal protective clothing (as outline in the SSHP). • When applicable, monitor for organic vapors and dust in the work zones and breathing zones (as outlined in the SSHP). • Wash hands before eating and drinking. • Ensure that samples are contained in the appropriate sample containers for each media. • Properly label each container indicating the sample matrix and required analytical procedure. • Package samples appropriately (e.g., bubble wrap) to avoid damage during transport, which may result in a chemical or physical hazard.	Low III (D)
Equipment/ PPE to be Used	**Inspection Requirements**	**Training Requirements/Procedures**	
• Glass and plastic bottles.	• All samples will be inspected prior to shipment or courier pickup by the field sampler. This inspection will be required to ensure a safe and secure sample environment for the transporter.	• Field personnel will also be instructed on sample preparation techniques.	
• Level D: short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples. • Use standard cloth or leather gloves when handling equipment.	• Daily.	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor trading. • Field personnel will be required to read and understand the Work Plan and SSHP prior to start of field activities. • The project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that will be performed.	

Table 9-8. Decontamination and IDW Disposal AHA

Activity / Phase	Potential Hazards	Recommended Actions / Controls	RAC
Decontamination of Equipment and IDW Disposal	1 Exposure to chemical hazards	• Wear appropriate levels of personal protective clothing (as outline below). • When applicable, monitor for organic vapors and dust in work zones and breathing zones. • Wash hands before eating and drinking. • Ensure that waste is contained in drums; properly label each drum.	Low III (D)
	2 Pinching Fingers, Dropping Objects on Feet	• Wear gloves and steel-toe boots.	Low III (D)
	3 Handling drums and back strain	• Never lift more than 50 pounds without mechanical assistance; use proper lifting techniques.	Low III (D)
	4 Spills from drums	• Make sure the drums are properly sealed. • Store drums in designated areas where they are primary and secondary containment.	Low III (D)
	5 Slip, Trip, Fall	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work.	Low III (D)
Equipment/PPE to be Used	**Inspection Requirements**	**Training Requirements / Procedures**	
• Drum dolly	Daily	• Field personnel will be instructed on the proper use of the drum dolly.	
• Level D: Short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples. • Use standard cloth or leather gloves when handling equipment.	Daily	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and the SSHP prior to the start of field activities. • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted.	

Table 9-9. Survey of New Groundwater Monitoring Well AHA

Activity / Phase	Potential Hazards	Recommended Actions / Controls	RAC
Set up survey equipment and conduct the survey of the new groundwater monitoring well.	1 Pinching Fingers, Dropping Objects on Feet, Back Strain	• Wear gloves and steel-toe boots. • Never lift more than 50 pounds without mechanical assistance. • Use proper lifting techniques. • When opening well, use proper sized wrenches. • When opening well, use tool brace under lid to avoid finger injury due to lid falling on well collar.	Low III (D)
	2 Slip, Trip, Fall	• Inspect work area and equipment for hazardous conditions and correct situation before continuing with other work.	Low III (D)
Equipment/PPE to be Used	**Inspection Requirements**	**Training Requirements / Procedures**	
• Level D: Short-sleeve shirt, full-length pants, safety-toe boots, safety glasses, chemically-protective gloves when collecting and handling samples. • Use standard cloth or leather gloves when handling equipment.	Daily	• All field personnel will have HAZWOPER 40-hour training and CPR, first aid, and bloodborne pathogen training. • At least one field personnel will have HAZWOPER supervisor training. • Field personnel will be required to read and understand the Work Plan and the SSHP prior to the start of field activities. • Use safe lifting procedures. • AMJV project manager and health and safety officer will ensure that field personnel are specifically trained in the field tasks that they are required to perform. • Daily tailgate health and safety briefings will be conducted.	

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ATTACHMENT 1

SITE SAFETY AND HEALTH PLAN

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Site Health and Safety Plan

Attachment 1 to APP

Preliminary Assessment/Site Inspection
Installation Restoration Program Site 75
Agricultural Well KAYO-SB
Naval Weapons Station Seal Beach
Seal Beach, California

June 21, 2011

Prepared for:

U.S. Department of the Navy
Naval Facilities Engineering Command, Southwest
San Diego, California

Prepared under:

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Prepared by:

Accord MACTEC Joint Venture
1231 E. Dyer Road, Suite 265
Santa Ana, California 92705

and

Richard Brady and Associates
3710 Ruffin Road
San Diego, California 92123

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APPENDICES

ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
AEI	Accord Engineering, Inc.
AMJV	Accord MACTEC Joint Venture
BPM	beats per minute
BRADY	Richard Brady and Associates
Cal/OSHA	California OSHA
CCR	*California Code of Regulations*
CFR	*Code of Federal Regulations*
cm^3	cubic centimeters
CPR	cardio-pulmonary respiration
DSITMS	direct sample ion trap mass spectrometry
ERT	emergency response team
FID	flame ionization detector
HAZMAT	hazardous materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSO	Health and Safety Officer
LEL	lower explosive limit
MACTEC	MACTEC Engineering and Consulting, Inc.
mg/m^3	milligrams per cubic meter
NA	not applicable
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVWPNSTA	Naval Weapons Station
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PID	photoionization detector
POC	point-of-contact
PPE	personal protective equipment
PPM	parts per million
Project Team	comprised of AMJV and BRADY
Site 75	Installation Restoration Program Site 75
SSHP	Site Safety and Health Plan

ABBREVIATIONS AND ACRONYMS (continued)

STEL	short-term exposure limit
TWA	time-weighted average
VOC	volatile organic compound
WNV	West Nile virus
U.S. EPA	United States Environmental Protection Agency
UXO	unexploded ordnance

1.0 PROJECT AND BACKGROUND INFORMATION

1.1 Plan Purpose and Use

This Site Safety and Health Plan (SSHP) was developed for field activities related to the Preliminary Assessment/Site Inspection at Installation Restoration Site 75 (Site 75) Agricultural Well KAYO-SB, Naval Weapons Station (NAVWPNSTA) Seal Beach, Seal Beach, California. The SSHP provides health and safety information to assist the Project Team of Accord MACTEC Joint Venture (AMJV; comprised of Accord Engineering, Inc. [AEI] and MACTEC Engineering and Consulting, Inc. [MACTEC]) and Richard Brady and Associates (BRADY). This plan will be used at NAVWPNSTA Seal Beach by the Project Team's field personnel and supervisors to recognize, understand, and avoid potential health and safety hazards associated with groundwater monitoring well installation and groundwater sampling activities. This SSHP was prepared to generally comply with the Department of Navy Environmental Restoration Program Manual, August 2006; EM 385-1-1, U.S. Army Corps of Engineers Safety and Health Requirements Manual, September 2008; NIOSH/OSHA Guidance Manual for Hazardous Waste Site Activities, October 1985; and the following regulations as they apply to the work to be performed:

- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), *Code of Federal Regulations* (CFR)
  - 29 CFR 1910 – Occupational Safety and Health Standards
  - 29 CFR 1910.1020 – Access to Employee Exposure and Medical Records
  - 29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response
  - 29 CFR 1910.134 – Respiratory Protection
  - 29 CFR 1910.165 – Employee Alarm Systems
  - 29 CFR 1910.1030 – Bloodborne Pathogens
  - 29 CFR 1910.1200 – Hazardous Communication
  - 29 CFR 1913.10 – Rules for Agency Practice and Procedure Concerning OSHA Access to Employee Medical Records
  - 29 CFR 1926 – Safety and Health Regulations for Construction
  - 29 CFR 1926.65 – Hazardous Waste Operations and Emergency Response
- U.S. Environmental Protection Agency (U.S. EPA)
  - Title 40 CFR 265.16 – Hazardous Waste Training
- California Division of Occupational Safety and Health Regulations (Cal/OSHA), *California Code of Regulations* (CCR), Title 8 – Industrial Relations
  - 8 CCR 3200 – General Industry Safety Orders
  - 8 CCR 3204 – Access to Employee Exposure and Medical Records
  - 8CCR 3395 – Heat Illness Prevention
  - 8 CCR 5144 – Respiratory Protection

- 8 CCR 5192 – Hazardous Waste Operations and Emergency Response
- 8 CCR 5194 – Hazard Communication
- 8 CCR 5207(F) – Bloodborne Pathogens
- 8 CCR 6184 – Employee Alarm Systems

1.2 Site Description Summary

Location:	Site 75, Naval Weapons Station Seal Beach, Seal Beach, California
Use:	Active military base
Surrounding Land Uses:	Agriculture, commercial, and residential
Site Topography:	Generally flat
Weather Conditions:	Windy and arid
Wind Direction	West/southwest
Area Affected:	Site 75, former agricultural well KAYO-SB

1.3 Project Background

Site 75 is the former agricultural well KAYO-SB, located near the eastern boundary of NAVWPNSTA Seal Beach in an unimproved area of the base. Well KAYO-SB was used as an irrigation source for a portion of NAVWPNSTA Seal Beach that was leased for crop production. Research conducted for this investigation at Site 75 identified no previous involvement (including chemical storage, disposal, release, or generation) with chemicals of potential concern at the Site.

Numerous potential off-site sources are also under consideration. An environmental data records search obtained from Environmental FirstSearch Network for this project identified 233 sites within a 1-mile radius of the location of former agricultural well KAYO-SB (Work Plan Appendix C). Identified off-site locations include waste streams and/or releases of chlorinated petroleum hydrocarbons, several of which have the potential for transport to the Site based upon current identified groundwater conditions.

The objective of the PA/SI is to evaluate whether the volatile organic compounds (VOCs) previously discovered in groundwater from former agricultural well KAYO-SB, located on U.S. Navy (Navy) property, originate from a source within the Navy property line. Additionally, this investigation is designed to provide characterization data to better understand the nature and local extent of contamination, assess the exposure pathways to human health and the environment, and refine the conceptual site model for Site 75 sufficient to determine if there is a need for further investigation.

Groundwater contamination was discovered in a well-water sample collected in September 2004, by the Orange County Water District. Analytical results from well KAYO-SB at that time showed the following VOC impact:

- trichloroethene – 25.3 micrograms per liter (µg/L)
- 1,1-dichloroethane – 13.8 µg/L
- 1,1-dichloroethene – 30.3 µg/L
- tetrachloroethene – 1.8 µg/L
- 1,1,1-trichloroethane – detected at trace levels.

Based on the Orange County Water District sampling results, the Navy mandated the 2006 destruction of well KAYO-SB in order to eliminate human exposure to the contaminated groundwater and to prevent any future use of the well for crop-irrigation purposes (Haley and Aldrich 2005).

The proposed well installations for this investigation include installation of an array of nested monitoring wells designed to sample transmissive strata of interest. Key to the well design will be dynamic integration of the near real-time VOC and hydrogeologic data collected during the drilling phase for well-design use prior to the actual well installation.

The completed wells will yield groundwater elevation data and groundwater laboratory analytical results. These data will be used to address the main investigative objective concerning the source of the groundwater contamination at Site 75. Additionally, these data may allow identification of potential responsible parties.

1.4 Project Description

Scope of Work:

The primary work elements for this project include, but are not limited to, the following:

- Continuous-coring sonic drilling techniques and logging by a Professional Geologist to identify hydraulically transmissive strata.
- High-density, real-time, on-site, VOC screening by U.S. EPA Method 8265 – direct sample ion trap mass spectrometry (DSITMS).
- Systematic planning meetings during the field operations to design monitoring well screened intervals using the drilling logs and DSITMS data.
- One monitoring well to be installed near the location of former well KAYO-SB.
- Pairs of monitoring wells to be installed (targeting two depths) at two other locations on base.
- Two monitoring wells to be installed at two other locations off base.
- Two groundwater sampling events at each of the seven new wells for fixed base laboratory analysis of VOCs by U.S. EPA Method 8260.
- Groundwater depth measurements and fixed base analytical data to evaluate hydraulic gradient(s) and VOC concentration gradient.

Anticipated/Known Chemicals:	VOCs, including trichloroethane, trichloroethene, dichloroethane, and dichloroethene
Anticipated Start Date:	July 2011
Field Work Duration:	July 2011 through November 2011

1.5 Project Personnel

Project Manager (AMJV):	Qihai Chen	(626) 617-2171
Project Manager (BRADY):	Fred Essig	(858) 634-4552
Site Health and Safety Officer:	James Albright	(714) 492-5210

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2.0 ORGANIZATION AND RESPONSIBILITIES

2.1 Project Manager

The Project Manager has responsibility for 1) determining whether Project Team field personnel have had and are current in the requisite training, 2) determining whether Project Team field personnel are current in their medical examinations, and 3) having a SSHP developed for and available at the project location. The Project Manager is to provide a copy of the SSHP to the Project Team field personnel for their review prior to their arrival at the work location.

To comply with the provisions of the OSHA Hazard Communication Standard Title 29 CFR 1910.1200 and Title 8 CCR 5194, the Project Manager is required to provide the subcontractor with a copy of this SSHP prior to the start of the project. The SSHP will serve to provide information only to the subcontractor on the potential hazards at the site and possible control measures. The subcontractor is required to have their own SSHP incorporating the requirements of this SSHP as a minimum.

2.2 Field Supervisor

The Field Supervisor has ultimate responsibility for directing fieldwork practices and activities. The Field Supervisor is responsible for utilizing the buddy system, for obtaining and having available equipment or other materials specified in this project SSHP, and for communicating daily with the Project Manager.

The responsibilities of the Field Health and Safety Coordinator described in the following section become the responsibilities of the Field Supervisor when the Field Supervisor is also designated as the Field Health and Safety Coordinator.

2.3 Field Health and Safety Coordinator

The Field Health and Safety Coordinator is responsible for the field implementation of the SSHP requirements. This includes daily communication of specific requirements to Project Team field personnel and consultation with the Field Supervisor, the Project Manager, and the Site HSO on health and safety requirements or issues.

2.4 Field Personnel

Project Team field personnel are responsible for reading, understanding, and complying with the project SSHP. They are responsible for notifying the Field Supervisor or the Field Health and Safety Coordinator of unsafe conditions or activities, accidents, injuries, and chemical exposures.

Project Team field personnel are responsible for continuously monitoring each other and field conditions to help limit accidents and injury to personnel and the risk that fieldwork will endanger off-site persons.

2.5 Site Health and Safety Officer

The Site HSO is ultimately responsible for evaluating field compliance with health and safety requirements and the provisions contained within this project SSHP. Full responsibilities include the following:

- Assisting in implementing and maintaining a health and safety program that is consistent with the intent of Health and Safety philosophy.
- Acting as a resource for health and safety issues and concerns.
- Making sure Project Team personnel who have functional health and safety responsibilities have the necessary resources and support to complete those responsibilities effectively.
- Providing support for the preparation and review of health and safety plans and task-specific safe operating procedures.
- Developing and implementing specific project and/or equipment safety operating procedures, in conjunction with the Field Health and Safety Coordinator.
- Assisting the Field Health and Safety Coordinator in the performance of health and safety activities.
- Overseeing the health and safety training for office personnel.
- Reviewing accident/injury forms, and investigating job site accidents, injuries, or illness should they occur during a project.

3.0 HAZARD IDENTIFICATION

3.1 Health Hazard Evaluation

Various chemicals could be present in the pore water and groundwater to be sampled. The anticipated concentrations of these chemicals in the samples, if any, are expected to be fairly dilute, but are, to a certain extent, dependent upon the amount of contaminant present. A health hazard evaluation for the general chemical groups that may be present at Site 75 is provided in Sections 3.1.1 through 3.1.3.

3.1.1 Solvents

The solvents used include organic halogenated compounds. Halogenated solvents, as a general class of chemicals, can pose central nervous system depression and skin and mucous membrane irritant hazards. The irritation potential can be extensive because of the defatting of the skin and cell damage. These compounds can also produce several other acute toxicities, such as liver and kidney toxicity, and cardiac irregularities induced by a sensitization of the heart. Accidental human poisonings have shown that these and occasionally other organ toxicities may be produced by acute exposures to halogenated or organic solvents.

Solvents can present ingestion, inhalation, and skin absorption toxic hazards. They can present tissue damage hazards dependent upon specific constituents. Some are carcinogens or potential carcinogens and some are reproductive toxins. Some are semi-volatile and some are volatile. However, solvents, if any, are expected to be in low concentrations from volatilization and dilution. Minor residuals can be expected. They are considered to present a low hazard potential to site workers due to the anticipated low concentrations.

3.1.2 Heavy Metals

Heavy metals exhibit a wide range of toxicological properties. Some metals are carcinogenic agents, skin and mucous membrane irritants, skin or muscle sensitizers, reproductive toxins, kidney toxins, and nerve toxins. Metals in the occupational setting are primarily absorbed into the body by either inhalation or ingestion. Some metals can present skin irritation and skin sensitization hazards. The hazard potential for metals is considered to be low.

3.1.3 Petroleum Hydrocarbons

Petroleum hydrocarbons, including the full range from gasoline to heavy oils, are a complex mixture of paraffinic, naphthenic, and aromatic hydrocarbons. Some of these constituents are human carcinogens and potential human carcinogens. Lighter fuels are volatile, heavier fuels are semi-volatile, and oils are generally not volatile. The lighter compounds are more toxic than the heavier ones, but are anticipated to be in low concentrations from volatilization and dilution. Petroleum hydrocarbons are considered to present a low hazard potential to field personnel due to the anticipated low concentrations.

3.2 Physical and Biological Hazard Evaluation

Potential physical hazards include slips/trips/falls, heavy lifting (back) injuries, heat stress, vehicle traffic, snakes, vermin, insects, drowning, marine life, and spiders. Table 3-1 identifies physical hazards at the sampling sites at NAVWPNSTA Seal Beach.

The degree of flammable hazards is dependent upon the amount of the substance in the samples. It is not anticipated to be significant. Most flammable substances are expected to have evaporated to a degree that flammable liquid or flammable vapors would not be present in sufficient concentrations to pose a fire or explosion hazard. Personnel should be alert to unusual odors and smoking. Open flames or other sources of ignition are not allowed when conducting sampling operations.

Table 3-1 identifies the physical hazards that may exist at NAVWPNSTA Seal Beach.

Table 3-1. Physical/Biological Hazards at NAVWPNSTA Seal Beach

Work Activity	Physical Hazards						
	Heavy Equipment	Slip/Trip/Fall	Vehicle Traffic	Heavy Lifting	Heat Stress	Snakes/Vermin/Stinging Insects/Spiders/ Marine Life	Unexploded Ordnance
Groundwater Monitoring Well Installation	●	●	●	●	●	●	●
Groundwater Sampling	●	●	●	●	●	●	●

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3.3 Protective Measures

Protective measures should be consistent with those used for any skin-contact hazard. Personal protective equipment (PPE), including glasses and gloves, should be worn during the sampling events. PPE is discussed in further detail in section 4.

3.4 Shallow, Rapid-Moving Stream Safety

Site 75 is located adjacent to a flood control channel, which has the potential to contain a rapid-moving water body during a storm event. Discussion about the potential hazard of falling into the flood control channel is discussed further in Section 5.10.

3.5 Unexploded Ordnance

NAVWPNSTA Seal Beach has a history of being used for bombardment practice and therefore has a potential of having unexploded ordnance (UXO). If Site 75 indicates the potential for UXO, the Navy will conduct a UXO survey and, if necessary, provide site clearance prior to any geophysical surveys or exploratory trenching. UXO response and procedures are discussed in detail in section 5.

4.0 PERSONAL PROTECTIVE EQUIPMENT

PPE for site workers is selected and used based upon existing and potential hazards, and the requirements of 29 CFR, Part 1910.120 (8 CCR, Section 5192). Different levels of personal protection will be provided to workers depending on specific work tasks performed. The selection of PPE requires an evaluation of chemical contaminants and physical hazards that may be encountered.

This SSHP complies with 29 CFR, Part 1910.132 (8 CCR, Sections 3380–3390), which states that all PPE for eyes, face, head, and extremities (e.g., protective clothing, respiratory protection devices, and protective shields and barriers) will be provided, used, and maintained in a sanitary and reliable condition. PPE is required wherever hazards are posed by the work processes, environment, or chemicals or mechanical irritants that may cause injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact. The use of appropriate PPE on site will be determined by the Site HSO.

The U.S. EPA level categories are as follows:

- Level A: Used when the greatest level of skin, eye, and respiratory protection is needed and consists of a totally encapsulated suit with supplied breathing air.
- Level B: Used when the highest level of respiratory protection is needed, but a lesser level of skin protection is required.
- Level C: Used when criteria for using air-purifying respirators are met, and a lesser level of skin protection is required.
- Level D: Used only as a work uniform and in an area without respiratory hazards.

4.1 Level D PPE

It is anticipated that Level D PPE will used during field activities. PPE for Level D includes:

- Coveralls (cotton and/or disposable) or long-sleeve shirt with work pants
- Boots (leather or rubber) with steel-toe and shank; non-slip soles
- Rubber over boots or disposable booties (as required)
- Safety glasses or goggles; face shield when handling liquids
- Hard hat
- High-visibility safety vest (required)
- Gloves, as required by task (leather work gloves with inner nitrile gloves)
- Hearing protection (as required)
- N95 dusk mask (as required)

4.2 Level C and Higher PPE

Level C and higher PPE are not anticipated for this project. If site conditions change to require a potential upgrade in PPE, prior to updating the SSHP, all work will be stopped immediately until the situation is fully evaluated and the site workers have been advised of any new PPE requirements.

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5.0 HAZARD ANALYSIS

Sections 5.1 through 5.14 identify safe work practices for the field activities scheduled at Site 75. These practices are designed to help the field personnel work safely. Although the following practices are intended to incorporate federal OSHA and Cal/OSHA requirements, subcontractors and other employers at Site 75 are responsible for complying with the health and safety requirements set forth in this SSHP, their own health and safety programs, and for monitoring the actions and accepting sole responsibility for the health and safety of their employees.

5.1 Contaminant Avoidance

- Avoid unnecessary direct contact with contaminated surfaces, equipment, soils, and liquids.
- Do not sit, kneel, or lean on contaminated surfaces or drums.
- Walk around puddles or obvious areas of contamination.
- Do not place monitoring or other equipment on contaminated surfaces.

5.2 Fire and Explosion

Although the potential for a flammable hazard is expected to be low, field personnel must be attentive to this danger and guard against carelessness. Vapors of flammable liquids are typically heavier than air; therefore, the vapors will tend to concentrate near the ground, in low-lying areas, in pockets, and in pipes. Field personnel will avoid potential problems from fire/explosion by not smoking or operating spark-ignition equipment within 50 feet of where explosive or flammable gases, liquids, and solids are located. A 5-pound, ABC-rated fire extinguisher will be available in each field vehicle for use to fight very small fires.

5.3 Chemical Splashes and Spills

Exposure of field personnel to undiluted chemicals is not anticipated. Some pore water and groundwater samples may contain some chemical contaminants; however, based on Orange County Water District results, the VOCs in the water are expected to be less than 1 mg/kg and result in airborne concentrations below the permissible exposure limits (PEL) (both the time-weighted average [TWA] and the short-term exposure limit [STEL]). However, to limit exposure to even these diluted constituents, Project Team field personnel are to wear appropriate chemical-resistant gloves and PPE to help prevent potential dermal exposure to accidental splashes or spills that may occur during sampling.

5.4 Heat Stress

If the ambient air temperature is expected to be above 85ºF, or personal protective clothing is worn (regardless of temperature), heat stress monitoring will be required to help prevent heat stress illnesses from occurring. Adequate shade in which field personnel can rest and 2 gallons of water or electrolyte solution (such as Gatorade®) per person per day should be available to help prevent dehydration and the onset of heat stress illnesses. The HSO will observe workers for heat-stress symptoms and record observations. Symptoms of heat stress include profuse sweating, headache, skin flushing, dizziness, confusion, and rapid heart rate. Body-core temperature will be monitored when conditions warrant. Workers exhibiting a body core temperature of 100.4 °F or greater (measured at the eardrum) will be

removed to a cooler area or activity until body core temperature returns to below 99 °F. Section 5.4.1 summarizes the physical conditions, signs, and symptoms associated with heat stress illnesses. Section 5.4.2 discusses standard procedures to prevent these illnesses.

5.4.1 Heat Stress Illnesses

Heat stress illnesses include:

- **Heat Stroke – a life threatening situation** in which the victim's body-temperature control system, which produces sweating to cool the body, stops working. Body temperature can rise quickly to levels that can cause brain damage and death. Typically, patients exhibiting signs of heat stroke will have an oral temperature of 104°F and above.
- **Heat Exhaustion –** a less dangerous condition that results from loss of body fluids. This fluid loss causes blood flow to decrease in vital organs, resulting in a form of shock. In addition, sweat does not evaporate properly due to high humidity, layers of clothing, or PPE, resulting in inadequate cooling of the body. Heat exhaustion can quickly turn into heat stroke.
- **Heat Cramps –** muscular spasms with pain, due to the loss of electrolytes through sweating. These cramps usually involve the abdomen, legs, or arms and usually occur several hours after the physical exertion has stopped.
- **Heat Rash** – commonly referred to as "prickly heat rash." Small, red, fluid-filled blisters caused by excessive moisture and chafing clothing.

Preventing heat stress illness is particularly important because a person suffering from a heat stress illness may be predisposed to additional injuries. The signs, symptoms and first aid for heat stress illnesses are listed in Table 5-1.

Table 5-1. Heat Stress Symptoms and First Aid

Forms of Heat Stress	Signs/Symptoms	First Aid
Heat Stroke	Hot, red skin. Constricted (small) pupils. High body temperature. Unusually dry skin.	Call 911 immediately and care for shock. Move to cool area. Have victim lie down flat and elevate the head and shoulders slightly. Remove as much clothing as decency permits. Apply ice pack or cool towel behind neck, knee, and armpits. If person is not vomiting and is conscious and coherent, give sips of cool water or ice chips to lower core body temperature.
Heat Exhaustion	Cool, pale, moist skin. Heavy sweating. Normal body temperature. Dilated (large) pupils. Headache, nausea, dizziness, and vomiting.	Move to cool area. Have victim lie down, elevating feet by 1 to 1½ feet. Loosen clothing. Apply wet towels. Call 911 or transport to medical facility. Give glass of water every 15 minutes, prior to or during transport.
Heat Cramps	Muscular pain aches.	If symptoms occur on the job, move to cool place and give glass of water or electrolyte solution every 15 minutes.
Heat Rash	Small, red, fluid-filled blisters.	Wash gently with soap and water. Apply lotion.

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5.4.2 Heat Stress Monitoring

Heat stress monitoring by the heart rate method, as described below, should be performed to help prevent heat stress illness from occurring. The Heat Stress Monitoring Form will be filled out in the field to ensure heat stress monitoring.

- Count personnel's heart rate by the radial pulse for 1 minute at the beginning of the day and prior to start of activities. Note values.
- At the beginning of the first break period, count the heart rate for one minute. Wait 30 seconds and count the heart rate a second time. Note values.
- If the initial heart rate exceeds 110 beats per minute (BPM), shorten the next work cycle by 1/3. The person is to rest until the heart rate decreases to below 90 BPM.
- If the heart rate does not decrease by 10 BPM between each successive measurement (a total reduction of 20 BPM), shorten the next work cycle by 1/3. The person is to rest until the heart rate has dropped at least 20 BPM or decreases to below 90 BPM, whichever is lower.
- Repeat procedure at the next break. If the conditions identified above are encountered, the break period should be doubled and the work cycle shortened by 1/3 again.

In the event that field personnel have to wear semipermeable (e.g., Tyvek®) or impermeable (e.g., Saranex™) protective cloth when ambient temperatures are 70°F or above, physiological monitoring will be required. Physiological monitoring under these conditions is discussed further in Section 6.4.

5.5 Illumination

Scheduled field activities should be performed during daylight hours. It is anticipated that no activities will be performed at night. However, in the event field activities are to be performed during non-daylight hours, portable lighting is to be used. Portable lights are to be provided to each field team.

5.6 Slips, Trips, and Falls

Open manholes, ravines, potholes, loose gravel, algae covered rocks, wet conditions, or other ground-surface obstacles could result in injury from slips, trips, or falls. Work areas will be kept free of debris, loose equipment, and tools. All open manholes will be protected by a barrier guard or a field team member stationed next to it in order to prevent an unauthorized entry. Project Team field personnel are to become familiar with the general terrain and practice care when working in such areas. Steel-toe boots will be worn in the field. A cellular phone or a two-way radio will be on personnel at all times.

5.7 Vehicle Traffic

Field personnel could be endangered by motor vehicles at NAVWPNSTA Seal Beach during the setup, use, and demobilization of equipment in areas of vehicle traffic. Project Team field personnel will adhere to NAVWPNSTA Seal Beach traffic policies by contacting all necessary traffic and security POCs to schedule planned field activity (with a 24 hour notice) when required. Field personnel shall become familiar with traffic patterns at NAVWPNSTA Seal Beach, and wear high-visibility, Class 2, orange reflective safety vests. If needed, temporary traffic control zones and the use of safety traffic cones, barricades, signs, and/or flashing lights will be implemented to warn motorists of field work.

5.8 Vehicle Operation

California driving regulations and recognized safe driving practices will be observed by Project Team personnel. These regulations include maintaining speeds within posted limits, wearing seat belts while the vehicle is in motion, stopping at intersections, giving the right-of-way to other vehicles and pedestrians, and reducing speed and using headlights in adverse weather conditions. While operating a vehicle, vehicle operators shall have in their possession a valid driver's license, vehicle registration, and evidence of insurance. Vehicle operators will be fully qualified and experienced in the operation of the vehicle being driven. The vehicle operator and the occupants shall wear seat belts. It is the vehicle operator's responsibility to ensure that mandatory seat belt requirements are enforced. Trailers or mobile home equipment shall be pulled only by vehicles designed and properly equipped to pull such equipment. Use of cell phones (hand-held or hands-free) while operating a moving vehicle is prohibited.

5.9 Heavy Lifting

When lifting heavy objects, such as manhole covers/grates or equipment, personnel will lift with their legs using proper equipment, e.g., lifting back support belts and/or lifting/leverage devices. Begin lifting with a firm footing and get a good grip on the object with both hands. Then, keeping the back straight and vertical and with body weight over the feet, lift with the legs. When possible, two or more personnel should lift heavy objects together. If an object weighs over 50 pounds, field personnel will seek assistance from another field team member. Personnel will be trained in proper lifting procedures.

5.10 Falling Into Water

Site 75 is located adjacent to a flood control channel, which can be hazardous during storm events. But because no fieldwork will be conducted during a storm event, AMJV does not anticipate field personnel to encounter the potential hazard of falling into moving water.

5.11 Drips and Splashes

Project Team field personnel could be exposed to chemical preservatives and microorganisms from minor drips or splashes resulting from overfilling groundwater sample containers during field operations. Field personnel will wear chemically resistant gloves and eye protection to help prevent potential dermal exposures.

5.12 Snakes, Vermin, Insects, and Spiders

Snakes

There is a low possibility that snakes may be encountered during fieldwork at some locations. If one of the team members is bitten by a snake, remain calm and move the victim to a cool place. As quickly as possible, transport the victim to the hospital. Do not attempt to suck the venom from the bite or place a tourniquet on the victim.

Vermin

Rats, mice, squirrels, and rabbits are carriers of disease. The most serious diseases associated with these species include rabies, plague, and Hantavirus. Where vermin are identified in work areas, the Site

HSO shall be immediately notified. Vermin bites shall be immediately reported, and medical care shall be obtained.

Currently, cases of Hantavirus have been reported in 26 states, including all regions of the United States, as well as parts of Canada. Cases of Hantavirus have been associated with activities that bring humans into contact with rodent excreta (droppings or urine) and saliva. Activities that may bring humans into contact with the etiologic agents causing infection include the following situations:

- Working in areas of field crops
- Occupying previously vacant cabins, buildings, or outhouses
- Cleaning outbuildings
- Disturbing rodent-infested areas
- Visiting areas where rodent populations have increased
- Entering into crawlspaces or other potentially rodent-infested areas

This disease may be transmitted through broken skin, contact with conjunctivae, ingestion of contaminated food or water, or inhalation of aerosols. Humans may be infected when infective saliva or excreta are inhaled as aerosols produced directly from rodents. The disease may also be transmitted when fresh or dried materials contaminated by rodent excreta are disturbed. Personnel should not perform work in abandoned buildings or enclosed areas contaminated with rodent droppings, debris, or nesting sites. The Site HSO should be contacted for further guidance.

Workers shall be advised that if a fever or respiratory illness develops within 45 days of the potential exposure, they should seek medical attention and inform the physician of potential Hantavirus exposure.

Because of the inherent, physical, bite danger involved and the potential diseases involved, especially with rodent urine and feces, Project Team field personnel will not approach and should take measures to avoid wild animals, snakes or other reptiles, and rodents.

Insects

Bees, wasps, and yellow-jackets may present a potential hazard on this project. An insect bite or sting can cause great pain, allergic reaction, inflammation and infection. If not treated correctly, some bites/stings may cause serious illness or death. Commonly seen symptoms include pain, irritation, swelling, heat, redness, and itching. Hives may occur. First-aid treatment for an insect bite/sting is to remove the stinger, if present. Do not break the sac attached to the stinger. Wash the area of the bite/sting with soap and water, then apply an ice pack for several minutes to relieve any pain and swelling. If serious reaction occurs, treat the bite/sting as you would a snake bite and seek medical assistance immediately.

Over the last couple of years, there have been an increasing number of occurrences of Africanized honeybees in Southern California. They are similar to European honeybees, but respond faster and sting in greater numbers. People may encounter Africanized honeybee nests in common areas, such as empty boxes, cans, old buckets, or other containers; old tires; infrequently used vehicles; lumber piles; holes and cavities in fences, trees, or the ground; sheds, garages and other buildings; and low decks or spaces under buildings.

Precautionary measures should be taken near possible nesting sites, which include listening for buzzing, using care when entering sheds or outbuildings, and being alert when performing work. If a nest or swarm is found, leave area at once and contact the NAVWPNSTA Seal Beach Point of Contact (POC) and the Project Team Site HSO.

If attacked by bees, run away as fast as you can into a shelter or as far as needed until they stop pursuing you. A bee can fly at speeds from 12 to 15 miles per hour and most healthy humans can outrun them. So, RUN and KEEP RUNNING! Africanized honeybees have been known to follow people for more than a quarter mile. If stung, remove the stinger by scraping with a fingernail, knife blade, credit card, or straight-edged object. Do not squeeze the stinger because the pressure may release more venom from the stinger sac. Wash the sting area with soap and water, then apply an ice pack for several minutes to relieve the pain and swelling. Contact emergency medical assistance if short breath or allergic reactions occur.

Ticks are normally found in wooded and bushy areas. When walking through tall brush areas, field personnel should periodically check themselves and their coworkers for ticks. Warm months (spring through early fall) are the most predominant time for this hazard. Ticks burrow into the skin. It is essential to remove the entire tick as soon as it is found. Perform periodic buddy checks to look for signs of tick bites, especially upon leaving heavily vegetated areas. Project Team personnel, visitors, and subcontractors should perform a more detailed check of their bodies when showering in the evening. Ticks prefer moist areas of the body and will migrate to those locations. Tick bites are common but can be avoided by using insect repellants such as DEET (N,N-diethyl-m-toluamide) and wearing light colored clothing.

Tick bites may result in Lyme disease or Rocky Mountain spotted fever. Lyme disease is a spirochete-type bacterial infection that is transmitted to humans and some animals by two species of ticks. In the Pacific coastal United States, the disease is spread by the western black-legged tick (or deer tick) is more prevalent. The adult female is red-brown with black legs, about 1/8-inch long; males are smaller and entirely brownish-black. Both are teardrop shaped. This tick can be found on wild grasses and low vegetation in both urban and rural settings. Ticks do not fly, jump, or drop from trees. Rather, they climb to the tips of vegetation, typically along animal trails or paths, and wait for a host to brush against them. Symptoms of Lyme disease include chills, fever, headache, fatigue, stiff neck, and aching bones. Lyme disease presents itself as a rash with a small welt in the center. Symptoms of Rocky Mountain spotted fever include chills, fever, headache, fatigue, stiff neck, and aching bones. Spotted fever presents itself as red spots under the skin.

It usually takes about 24 hours of tick attachment to a host for disease to be transmitted. The symptoms can begin as early as a few days after a bite or take as long as two weeks before appearing. Symptoms include headache, chills, fever and rash-much like the flu. If bitten, carefully remove the tick using blunt tweezers. Grasp the tick close to the skin and pull straight out with a steady pressure. Check to see that the entire tick has been removed. Clean with warm, soapy water and then apply an antiseptic. Be observant, and if any of the above symptoms develop, contact your doctor immediately.

Mosquitoes have also been suspect in the transmission of Lyme disease. In addition, mosquitoes have been identified in the transmission of West Nile virus (WNV). WNV is a potentially serious illness. Experts believe WNV is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. The easiest and best way to avoid WNV is to prevent mosquito bites. When you are outdoors, use insect repellent containing a U.S. EPA-registered active ingredient (DEET, picaridin [KBR 3023], or oil of lemon eucalyptus [PMD]). Many mosquitoes are most active at dusk and

dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors during these hours. Avoid mosquito breeding sites where standing water may accumulate. People typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito.

Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will not show any symptoms at all. Up to 20 percent of the people who become infected have symptoms such as fever, headache, body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach, and back. Symptoms can last for only a few days, though even healthy people have become sick for several weeks. About 1 in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness, and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.

There is no specific treatment for WNV infection. In cases with milder symptoms, people experience symptoms such as fever and aches that pass on their own, although even healthy people have become sick for several weeks. In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing, and nursing care. Milder WNV illness improves without treatment, and people do not necessarily need to seek medical attention for this infection, though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately.

Spiders

Spiders may present a hazard on this project. They may be encountered in shady, protected rock/wood piles, under logs or bark, in old buildings, and other relatively unbothered places, such as under manhole covers and drain inlets. Spiders can inflict painful bites that can cause local reaction, sweating, nausea, muscle cramps, fever, and chills.

The female black widow spider is usually black with a red spot or hourglass-shaped mark on her round abdomen; the male is smaller and usually has light streaks on his abdomen. The brown recluse spider (fiddle spider) is usually grayish to reddish-brown and sometimes light tan or cream colored, with a black, fiddle-like marking on the head and thorax. The venom from the brown recluse spider is capable of causing coma and kidney failure in its victim. Field personnel suspected of being bitten by a black widow or brown recluse spider will seek immediate medical attention. If possible, kill the spider and take it with you for positive species identification. Wolf spiders are commonly found in California. They are large hairy spiders, up to 3 to 4 inches across. They are a mottled, gray-brown color, which helps them hide in sand, gravel, leaves and other debris. Female wolf spiders carry their young on their backs. Except for one group, wolf spiders do not spin webs. They tend to burrow into the earth and hide. They are aggressive, come after their prey, and are fast runners. Because of their impressive size and aggressiveness, wolf spiders can easily incite panic. Bites from a wolf spider can cause pain, redness, and swelling. The large jaws/fangs can cause a tear in the skin as they bite. Swollen lymph glands may develop. The skin area at the bite may turn black. Swelling and pain can last up to 10 days.

Precautionary measures for the presence of spiders should be taken near possible nesting sites. These measures include being alert when performing work in these areas, taking care when opening manhole covers and drain inlets, always wearing gloves, and never reaching into spaces with unprotected arms. If a spider's nest is found, avoid the nest if possible (spiders are seldom aggressive and usually only bite if threatened or injured); otherwise, to minimize the potential for bites, displace spider webs in the work area by knocking down the web, spiders, and eggs with a stick and crushing them underfoot.

5.13 Poisonous Plants

Poisonous plants are not anticipated at NAVWPNSTA; however, poison ivy, poison oak, and poison hemlock may be encountered. Spring and summer are the most common times of the year for poison ivy and oak. Poison ivy and oak have three leaves on each stem and grow as a vine or bush. Although poison ivy and poison oak usually have three leaves, additional leaves are not unusual in western oak. The leaves of these plants are shiny and coated with an oily chemical, which causes the allergic reaction. The oils are also in the stems, vines, and roots of these plants. Poison ivy rash is produced by an allergic reaction to the oil. The medical term is allergic contact dermatitis. Repeated exposure to the plants usually results in an increasingly more severe reaction. The first exposure to poison ivy will not result in a reaction or rash but the body develops an immune response that will become increasingly more severe with subsequent exposures. Gloves, boots, or other tools that have the resin on them can cause poison ivy if re-exposed even several months after you last used them. The common symptoms of exposure are a red, streaky rash indicating where the resin has contacted the skin, a patch of vesicles (water blisters), intense itching, and swelling. Fever, nausea, and chills may develop in severe cases. Treatment should be to wash the affected area with soap and water. Washing off with soap and water immediately after exposure will limit the severity of the reaction. If the resin is absorbed into the skin, a skin rash still may occur depending on the victim's sensitivity. The longer you wait to wash off the resin, the worse the reaction will be. Commercially available lotions or a paste of baking soda and water may reduce the discomfort.

5.14 Unexploded Ordnance

UXO results from the military's use of munitions during live-fire training or testing. UXO is considered the most dangerous category of military munitions. Although the conditions that define military munitions as UXO are specific, employees should consider any munitions or suspect munitions they encounter during sampling activities as UXO and as extremely dangerous.

It is important to know that military munitions (e.g., UXO):

- Come in many shapes and sizes. (Some will look new and others will look old and rusty. Some will look like bullets or bombs. Some will look like pointed metal pipes, soda cans, small balls, or even an old car muffler.)
- May be clearly visible, or may be partially or completely hidden.
- May be easy or virtually impossible to recognize as a military munitions.

UXOs can be found:

- On top of the ground, or partially or completely buried in the ground or by vegetation, sand, or snow.
- In or under high grass or bushes.
- Under water, in lakes or streams, or the ocean.
- UXO may look like a bullet or bomb, or may be in many pieces. *Even small pieces of UXO can be dangerous.*

Although chances are low, UXO may be present at Site 75. If the site history indicates a potential for UXO, the Navy will conduct a UXO survey and, if necessary, provide site clearance prior to any geophysical surveys or exploratory trenching. In the event of discovering UXO, these procedures will be followed:

- Stop all work activities immediately upon discovering potential UXO.
- Contact supervisor and HSO. AMJV personnel and subcontractors will not handle any ordnance item. Only trained explosive-ordnance-disposal personnel will handle UXO.
- Terminate use of all equipment that may generate electromagnetic waves (i.e., cellular phones, radios, lasers, generators, and alternators) for a distance of 200 yards.
- Do not disturb the object suspected as being UXO.
- Vacate employees from the area and move to a minimum distance of 200 yards from the UXO.
- Resume work upon clearance of the area by qualified UXO personnel.

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6.0 HAZARD MONITORING

During fieldwork at Site 75, any potentially toxic air contaminants, explosive gas mixtures, and/or potentially hazardous noise levels will be monitored, as necessary. All monitoring will be conducted by a qualified AMJV Site HSO (i.e., James Albright or his designee) and monitored readings will be recorded in a logbook.

Monitoring instruments used during site activities may include a photoionization detector (PID) or flame ionization detector (FID), colorimetric indicator tubes, respirable dust meter, an explosimeter fitted with the manufacturer's leaded gasoline filter, and a sound-level meter or a noise dosimeter. Table 6-1 summarizes instrument calibration and maintenance procedures.

Table 6-1. Instrument Calibration and Maintenance Information

Instrument	Calibration Data
Respirable dust meter	Daily, per user manual.
PID	Each day zero and span with ambient air and isobutylene standards. Adjust zero and span after lunch break, or whenever zero appears to drift.
FID	Each day zero and span with ambient air and methane standards. Calibrate with a low-range and mid-range standard or calibrate at 10 ppm (parts per million) on both scales. Adjust zero and span hourly or whenever zero appears to drift.
Low-volume air sample pump	Calibrate with burette or autocalibrator both before and after sampling. Check flow during shift at break.
Combustible gas indicator	Calibrate daily with methane or gas mixture (nominal 50% lower explosive limit).
Ear-insertable core-temperature monitor	Check response daily before work begins.

Note:

All direct-read air monitoring equipment will be calibrated daily, in accordance with manufacturer's recommendations and standard industrial hygiene practice.

6.1 Chemical/Air Monitoring

Chemical monitoring will be conducted during all intrusive operations near worker breathing zones, as needed. Table 6-2 summarizes the action levels for compounds. Explosive gases will also be monitored at the borehole, as needed.

Table 6-2. Monitoring Methods and Action Levels for Characterized[a] Mixtures Using Screening Survey Instruments

Hazard	Locations	Method	Action Level[b]	Protection Action
Total organic vapor	Site 75	PID or FID	Background to 10 ppm	No action required
			> 10 ppm	Engineering controls such as mechanical ventilation to dilute vapors will be used as a first line of defense; Level B will be used if necessary.
			> 50 ppm	Engineering controls and supplied air protection, Level B
			> 100 ppm	**STOP WORK**
Combustible gas	Site 75	Explosimeter or FID	< 10% LEL	No action required
			10 to 20% LEL	Start continuous monitoring; permit only classified electrical equipment and non-sparking tools
			> 20% LEL	**STOP WORK;** ascertain source of gas

Notes:

a Carcinogenic and highly toxic materials verified absent from atmosphere.

b All action levels are sustained readings observed above background.

LEL = lower explosive limit

6.2 Environmental Monitoring

If contaminant exposures reach action levels in worker breathing zones and work continues (in Level "C" protection), perimeter monitoring will be conducted at the outer edge of the controlled area. If contaminants reach action levels in any perimeter area, work will be suspended until engineering controls or natural ventilation allows ambient area contaminant concentrations to fall below acceptable (action) levels.

6.3 Area Monitoring

Where intrusive activities are performed, monitoring will be conducted in areas suspected to be contaminated with VOCs or any combination of contaminants. Direct-read monitoring will be performed for detection of VOCs in air (see Table 6-2 for action levels).

6.4 Personnel Monitoring

Personnel monitoring will be initiated if VOC action levels equaled or exceeded (see Table 6-2) and/or if personnel are required to work using respiratory protection for periods of more than 1 hour.

Tables 6-3 and 6-4 present action levels for heat stress and frequency of monitoring. Personnel exhibiting heat-stress symptoms will stop work as stated in Section 5.4. Body-core temperature will be monitored when conditions warrant.

Table 6-3. Action Levels for Heat Stress

Type of Measurement	Action Level	Action
Ear-insertable core temperature	100.4°F or greater	Remove from work
Ear-insertable core temperature	< 99°F	Return to work

Table 6-4. Frequency of Physiological Monitoring for Fit and Acclimated Workers

Adjusted Temperature[a]	Normal Work Ensemble[b]	Impermeable Ensemble
90°F (32.2°C) or above	after each 45 minutes of work	after each 15 minutes of work
86.5°F–90°F (30.8°C–32.2°C)	after each 60 minutes of work	after each 30 minutes of work
82.5°F–86.5°F (28.1°C–30.8°C)	after each 90 minutes of work	after each 60 minutes of work
76.5°F–82.5°F (25.3°C–28.1°C)	after each 120 minutes of work	after each 90 minutes of work
72.5°F–76.5°F (22.5°C–25.3°C)	after each 150 minutes of work	after each 120 minutes of work

Notes:

a. Calculate the adjusted air temperature (T_a adj.) with the following equation:

T_a adj. (°F) = T_a (°F) + (13 X %sunshine / 100)

Measure air temperature (T_a) with a standard mercury-in-glass thermometer with the bulb shielded from radiant heat.

Estimate %sunshine by judging what percent of time the sun is not covered by clouds that are thick enough to attenuate shadow (e.g., 100% sunshine = no cloud cover and a sharp, distinct shadow; 0% sunshine = no shadow).

b. A normal work ensemble consists of coveralls or other clothing with long pants.

Acronyms/Abbreviations:

°C – degrees Celsius

°F – degrees Fahrenheit

6.5 Dust Monitoring

It is not anticipated that dust monitoring will be required on this project. If dust exposure becomes a concern, it will be monitored by the Site HSO or his designee. Dust exposure is monitored with a forward-scattering, pulsed-light-emitting-diode sensing configuration. This system measures total dust or respirable dust; however, individual toxic constituents are not determined. Action levels for toxic dust are established based upon assumed or estimated airborne concentrations of various constituents. Actions levels may be modified as detailed analytical information becomes available. Table 6-5 provides baseline action levels for total dust and various toxic metals. Dust monitoring is performed at sites where a potential for exposure to toxic metal dusts or toxic nonvolatile or semivolatile compounds exists. For this investigation, actions levels for toxic respirable dust will be 0.05 milligrams per cubic meter (mg/m^3).

Table 6-5. Action Levels for Dusts

Hazard	Method	Action Level[a]	Protection Action
Heavy Metals			
as Total Dust (no toxic constituents)	Dust-monitoring Mini-RAM	< 1 mg/m^3	No action required
		> 1 mg/m^3	Air-purifying respirator
as Total Dust (toxic constituents present)	Dust-monitoring Mini-RAM	> 0.5 mg/m^3	Air-purifying respirator
as Metal[b]			
Chromium	Personal monitoring	> 0.5 mg/m^3	Air-purifying respirator
Chromium (VI)		> 0.05 mg/m^3	Air-purifying respirator
Nickel (sol)		> 0.1 mg/m^3	Air-purifying respirator
Nickel (insol)		> 1.0 mg/m^3	Air-purifying respirator
Mercury (alkyl)		> 0.01 mg/m^3	Air-purifying respirator
Zinc		> 1.0 mg/m^3	Air-purifying respirator
Vanadium		> 0.05 mg/m^3	Air-purifying respirator
Lead		> 0.05 mg/m^3	Air-purifying respirator
Cobalt		> 0.05 mg/m^3	Air-purifying respirator
Copper		> 0.2 mg/m^3	Air-purifying respirator
Cadmium		> 0.05 mg/m^3	Air-purifying respirator
Selenium		> 0.2 mg/m^3	Air-purifying respirator
Arsenic		> 0.01 mg/m^3	Air-purifying respirator

Notes:

a. above background.

b. Based on American Conference of Governmental Industrial Hygienists threshold limit value.

mg/m^3 = milligrams per cubic meter

7.0 DECONTAMINATION AND SANITATION

The primary focus of any decontamination program is to minimize the spread of contaminated material beyond a given site. Each field location will have a decontamination station based on the level of exposure established by the HSO and the hazardous work permit.

7.1 Personnel Decontamination

AMJV anticipates that Level D PPE will be used for all activities. A minimal decontamination procedure (i.e., washing exposed skin with soap and water) will be required.

7.2 Vehicle and Equipment Decontamination

The primary focus of any decontamination program is to minimize the spread of contaminated material beyond a given site. During field activities, the use of a variety of vehicles and small equipment is anticipated. The level of potential contamination for vehicles and equipment at these sites is "low" for support vehicles used in uncontaminated areas and/or for nonintrusive field activities.

7.3 Apparel Decontamination

Single-use PPE clothing will be disposed in accordance with the IDW Management Plan.

7.4 Hazardous Waste Minimization Practices

Personnel working in controlled areas will minimize generation of hazardous waste. To minimize cross-contamination, disposal materials, wrapping, and packaging will not be brought into controlled areas unless required. Separate waste containers will be set up for trash, nonhazardous waste, and potentially hazardous waste.

7.5 Testing Requirements following Decontamination

The HSO will visually inspect all items and equipment after decontamination and before being transported from the controlled area. Generally, visual inspection of items is sufficient, eliminating the need to test for chemical contamination.

7.6 Certification of Decontamination

A "certification of decontamination" will be prepared prior to releasing any government-furnished equipment from areas where field activities are conducted to uncontrolled areas. The HSO will maintain a decontamination record log for all other equipment.

7.7 Subcontractor Requirements

Subcontractors will notify the HSO before removing equipment from controlled areas.

7.8 Decontamination Area Arrangements

Specific areas will be designated for waste storage, vehicle and equipment decontamination, emergency supplies, and other necessary equipment.

7.9 Waste Storage Area and Decontamination Area

A waste storage area will be established at the base for temporary storage of IDW (see the site-specific Work Plans and Sampling and Analysis Plans for specifics of IDW storage and location). This area is limited to waste storage activities only. Any fieldwork that may cause the spread of contaminated IDW outside the waste storage area is prohibited.

7.10 Sanitation

Numerous restroom facilities are located at NAS North Island near the project sites. Since all field personnel will have appropriate NAVFAC SW contractor identification badges, most of the restroom facilities will be open to them. Should restroom facilities not exist in certain areas, adequate breaks will be given to field personnel to use restroom facilities at the food court area at the Naval Exchange located near the main gate.

8.0 EMERGENCY RESPONSE PLAN

This section describes emergency response planning procedures to be implemented for Site 75. It is consistent with local, state, and federal disaster and emergency management plans and is designed to comply with applicable provisions of 29 CFR 1910.38. The following sections discuss pre-emergency planning, personnel roles and lines of authority, emergency recognition and prevention, evacuation routes and procedures, emergency contacts and notifications, hospital route directions, emergency medical treatment procedures, protective equipment failure, fire or explosion, weather-related emergencies, spills or leaks, emergency equipment and facilities, and reporting. The emergency response procedures noted in the following sections will be continually exercised, and lessons learned from the exercises will be critiqued.

8.1 Pre-Emergency Planning

During the pre-work briefing and daily tailgate safety meetings, all on-site employees will be trained in the site communication systems and site evacuation routes. The emergency response provisions will be reviewed on a regular basis by the AMJV Site HSO and will be revised, if necessary, to ensure that they are adequate and consistent with prevailing site conditions.

In the event of a medical emergency or fire during fieldwork at NAVWPNSTA Seal Beach, call "(562) 626-7333" to get in touch with the base emergency response team or the standard "911" from the on-site mobile phone.

If emergency workers respond to the site, the on-site health and safety representative will brief the emergency workers on the potential chemical hazards of the site, exposure routes and personal-protection recommendations. The AMJV emergency response designee will be Mr. James Albright. The Emergency Response Critique Form, which shall be completed after an emergency response incident occurs, is presented in Appendix C. The Emergency Response Critique Form will be used by field personnel to evaluate and critique the emergency response incident for lessons learned to improve future emergency response actions.

A mobile telephone will be available during all field activities. On a daily basis and at each work location, the Site HSO and/or field team leader will verify that mobile phones are operational.

8.2 Personnel Roles and Lines of Authority

The AMJV Site HSO has the primary responsibility for responding to emergency situations and for responding appropriately to ensure the safety of site personnel and the public. Possible actions may include evacuation of personnel from the site area. The Site HSO is also responsible for ensuring that corrective measures have been implemented, appropriate authorities have been notified, and follow-up reports have been completed.

For work at NAVWPNSTA Seal Beach, the AMJV Site HSO shall communicate directly with the Navy remedial project manager in an emergency.

Personnel are required to report all injuries, illnesses, spills, fires, and property damage to the Site HSO. The Site HSO must be notified of any on-site emergencies and is responsible for ensuring that the appropriate emergency procedures described in this section are followed.

8.3 Emergency Recognition and Prevention

On-site personnel will be made familiar with hazard information associated with Site 75 and with techniques of hazard recognition through pre-work training and site-specific briefings.

8.4 Evacuation Routes and Procedures

In the event of an emergency that necessitates evacuation of a work task area or the site, the Site HSO shall contact all nearby personnel using the on-site communications to advise the personnel of the emergency. The personnel will proceed along site roads to a safe distance upwind from the hazard source. Personnel will remain in that area until the Site HSO or an authorized individual provides further instructions.

In the event of a major catastrophe where communication is not available, AMJV and their subcontractors will meet at a designated rally point. The designated rally point for NAVWPNSTA Seal Beach is the north gate located at the corner of Westminster Boulevard and AT Road.

8.5 Medical Emergencies

First-aid equipment and an eyewash unit meeting ANSI Standard Z358.1-2004 will be carried in the vehicles utilized by the field teams. In the event of a medical emergency, the Site HSO will be responsible for coordinating first aid and/or requesting aid from an emergency medical service. Only personnel current in first aid/CPR training should provide emergency aid. However, if a trained person is not available during an emergency, anyone that can provide assistance should do so. Immediate response by NAVWPNSTA Seal Beach medical services and/or off-base ambulance service is available by calling 911 or (562) 626-7333.

The following field personnel have current CPR, first-aid and blood-borne pathogen certification:

- Qihai Chen
- Fred Essig
- James Albright

The following steps will be taken if an injury to Project Team field personnel or other medical emergency occurs:

- Prevent further injury and notify the Field Supervisor/Site HSO.
- Initiate first aid and provide immediate medical attention for the injured person, as trained.
- If the person requires additional medical attention for a minor injury and can be moved safely without further injury, the Site HSO may arrange transport of the injured party to obtain further medical assistance.
- For major injury, other severe medical emergencies, or where the person cannot be moved without additional injury, call 911 or (562) 626-7333 for immediate help.

- Prepare an injury incident report. The Project Manager is responsible for preparing and submitting the incident report to the Site HSO and Corporate Human Resources within 48 hours. The Project Manager is also responsible for notifying Naval Facilities Engineering Command Southwest (NAVFAC SW), the base POC, and the AMJV Program Manager as soon as possible.

8.6 Emergency Signals

Table 8-1 contains air horn signals that can be used in the event of an emergency.

Table 8-1. Emergency Signals

Equipment	Evacuation Signals	Required Action
Air Horn	1 long blast every10 seconds	Stop work, turn off equipment, leave work zone, use modified decontamination procedures, assemble in support zone
Air Horn	3 short, successive blasts every 10 seconds	Immediately stop work, turn off equipment, evacuate site, assemble in alternate area as indicated in tailgate safety meetings
Car Horn (Back up)	1 long blast every 10 seconds	Stop work, turn off equipment, leave work zone, use modified decontamination procedures, assemble in support zone
Car Horn (Back up)	3 short successive blasts every 10 seconds	Immediately stop work, turn off equipment, evacuate site, assemble in alternate area as indicated in tailgate safety meetings

8.7 Emergency Contact Phone Numbers

Emergency contact phone numbers for NAVWPNSTA Seal Beach is listed in Appendix D.

8.8 Directions and Hospital Route Map

The nearest hospital from NAVWPNSTA Seal Beach is the Kindred Hospital Westminster is located 200 Hospital Circle, Westminster, California 92683, Tel: (714) 893-4541. Directions and hospital route map is presented in Appendix D.

8.9 Protective Equipment Failure

If any worker in the exclusion zone experiences a failure of protective equipment (either engineering controls or PPE) that affects his or her personal protection, the worker and all coworkers will immediately leave the exclusion zone. Re-entry to the exclusion zone will not be permitted until:

- The protective equipment has been repaired or replaced,
- The cause of the equipment failure has been determined, and
- The equipment failure is no longer considered a threat.

8.10 Fire/Explosion

8.10.1 Small Fire/Explosion

In the event of a small, controlled explosion or fire, the field personnel will evacuate to a safe distance from the explosion or fire and notify the Site HSO. If a safe location is not readily available in the

vicinity of the incident, field personnel will take refuge at the general staging area or other safe staging areas identified during the initial or tailgate safety meetings. Additional appropriate actions can include:

- Call the emergency number, as required. Call 911 or (562) 626-7333.
- Stay at the location while waiting for the Fire Department as long as it is safe to do so.
- Notify the Project Manager or the Site HSO.
- Decide with appropriate Activity personnel and Fire Department personnel the ability to continue work.
- Notify Project Team Site personnel of decision to continue work or to stop work.

Personnel assigned to NAVWPNSTA Seal Beach listed in Section 1.5 are certified in CPR, first-aid and blood-borne pathogen.

8.10.2 Large Fire/Explosion

In the event of an uncontrolled or large fire or explosion, the Field Supervisor will:

- Immediately evacuate the area.
- Call 911 or (562) 626-7333 or the facility emergency number.
- Take a head count of site personnel.
- Move personnel to the general staging area or other appropriate safe area to wait for the Fire Department.
- Notify the Project Manager or the Site HSO.
- Decide, in conjunction with Activity personnel and the Project Manager, whether to send personnel home.
- Remain near location, if necessary, for the Fire Department, or for a facility investigation.

8.11 Weather-Related Emergencies

Site work shall not be conducted during severe weather conditions, including high-speed winds or lightning. In the event of severe weather, field personnel will stop work, secure and lower all equipment (e.g., drilling masts), and leave the site. Thermal stress caused by excessive heat or cold may occur as a result of extreme temperatures, workload, or the PPE used. Heat stress treatment will be administered as described in Section 5.4.

8.12 Spills or Leaks

In the event of a severe spill or a leak, site personnel will follow the procedures listed below:

- Evacuate the affected area and relocate personnel to an upwind location.
- Inform the AMJV Site HSO and Navy remedial project manager immediately.
- Locate the source of the spill or leak, and stop the flow if it is safe to do so.

- Begin containment and recovery of spilled or leaked materials.
- Notify appropriate local, state, and federal agencies.

AMJV personnel will conduct groundwater monitoring from monitoring wells located at each site. Spills or leaks occurring from these activities are not likely.

8.13 Emergency Equipment and Facilities

The following emergency equipment will be available on site:

- First aid kit
- Fire extinguisher
- Mobile telephone

8.14 Reporting

All emergency situations require follow-up and reporting. An employee involved in an incident shall immediately report the incident to the AMJV Site HSO. An Incident Report (Appendix B) must be completed by the AMJV project manager and submitted to the AMJV Site HSO within 24 hours of an emergency situation. The report must include proposed actions to prevent similar incidents from occurring. The Site HSO must be fully informed of the corrective action process so that he may implement applicable elements of the process at other sites.

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9.0 TRAINING, EXPOSURE/INJURY REPORTING, AND MEDICAL MONITORING

9.1 Training

The Project Team understands the importance of making sure its personnel are adequately trained to safely perform those tasks to which they are assigned. Pertinent Project Team field personnel have participated in health and safety training programs, including Hazardous Waste Operations and Emergency Response (HAZWOPER), designed to comply with the initial and refresher training requirements of Title 29 CFR 1910.120 and Title 8 CCR 5192. Additionally, pertinent Project Team field personnel have been trained in CPR and first aid.

9.1.1 Initial 40-Hour HAZWOPER Training

Title 29 CFR 1910.120 and Title 8 CCR 5192 require that the personnel involved with the following operations receive a minimum of 40 hours of off-site instruction prior to assignment and a minimum of 3 days of actual field experience under the direct supervision of a trained and experienced supervisor. Instruction and experience shall include:

- Hazardous substance cleanup operations required by a government body.
- Corrective actions involving cleanup operations at sites covered by the Resource Conservation and Recovery Act (RCRA).
- Cleanup operations at uncontrolled hazardous waste sites recognized by government bodies.
- Operations involving hazardous wastes that are conducted at regulated treatment, storage, and disposal facilities.
- Emergency response operations for releases of, or substantial threats of releases of, hazardous substances

Minimum course requirements include the following:

- Overview - Title 29 CFR 1910.120 and Title 8 CCR 5192, Hazardous Waste Operations and Emergency Response
- Overview - Title 29 CFR 1910.1200 and Title 8 CCR 5194, Hazard Communication
- Health Hazard Recognition
- Physical Hazard Recognition
- Respiratory Protection - Selection, Use, and Maintenance
- Personal Protective Equipment - Use and Limitations
- Temperature Extremes
- Site Control
- Medical Surveillance
- Health and Safety Plans - Developments and Uses

- Air Monitoring Equipment - Uses and Limitations
- Emergency Plans and Procedures
- Available Reference Materials
- Effective Decontamination Procedures
- Container Handling
- Permit Required Confined Space Entry

9.1.2 HAZWOPER Refresher Training

To supplement initial training, periodic training sessions are conducted at each of the Project Team's offices throughout the year, including 8-hour HAZWOPER refresher training. These sessions, conducted by qualified professionals, are designed to expand on and clarify the initial training. Additional topics may include accident prevention, seasonal physical hazards, hazardous waste transportation, confined space entry, and hazardous waste manifests. These sessions are designed to concisely present materials relevant to work being performed. Documentation of these sessions includes an attendance record and completion of a test covering the materials presented.

9.1.3 First Aid/CPR Training

The Field Supervisor or the Site HSO will have current certification in first aid and CPR. Only persons with current certification in first aid and CPR training should render first aid. However, if these persons are not available during an emergency, anyone that can provide assistance should do so.

9.1.4 Hazard Communication Training

Project Team field team members will have had the required hazard communication training. Prior to the start of field operations, Project Team field personnel will be provided additional hazard communication training to discuss the groundwater sampling field work activities associated with NAVWPNSTA Seal Beach as a non-routine job hazard.

9.1.5 Equipment Training

It is anticipated that a sonic drill rig will be used to advance the soil borings. Only trained, qualified persons will operate heavy equipment. Equipment operators will be certified in any equipment or activity-specific training as required by OSHA.

9.1.6 Safety Meetings

The Site HSO will conduct daily safety meetings before field personnel begin work, when there are modifications to the SSHP, and when additional field personnel or visitors arrive. The meetings are to be attended by the field personnel. The purpose of the meetings is to review and update pertinent information on job hazards, protective measures, or changes in scope of work. Health and Safety issues will be discussed at pre-mobilization meetings. Meetings will be attended by personnel involved in field activities. In addition, a debriefing meeting will be performed at the completion of the fieldwork. The meetings will include discussion of the following:

- Description of the tasks and their potential hazards
- Coordination of project activities
- Identification of methods and precautions to prevent injuries and exposures
- Emergency planning, including the identification of a "staging" area for the field teams to meet in the event of an emergency. This "staging" area will consist of an easily accessible centralized location, usually at the Main Gate. Alternate off-site "staging" areas in the proximity of NAVWPNSTA will also be designated
- Modifications to the project SSHP (if any)
- Input from Project Team field personnel on health and safety issues pertaining to field activities

The attendees' signatures on Statement of Acknowledgement (Appendix A) and their agreement to comply with it will be collected on the first day of work.

9.1.7 Training Records

Initial and daily health and safety training will be documented. The Site HSO is responsible for documenting the training activities and maintaining the files.

9.2 Exposure/Injury Reporting

9.2.1 Purpose

The purpose of the exposure/injury reporting system is two-fold: to learn from past mistakes in order to maintain an exposure/injury-free work environment and to document incidents as required by OSHA. The reporting system consists of monthly surveys and exposure/incident reports. Incidents involving injury, illness, exposure, vehicle, or equipment damage are thoroughly investigated by the Regional Health and Safety Coordinator. Additionally, incidents that might not cause injury, illness, or property damage but have the potential to do so and "near miss incidents" will also be investigated.

9.2.2 Accident Reporting and Investigation

Project Team personnel are required to notify the Site HSO of reportable exposures and injuries. Individuals will discuss the potential exposures with the Site HSO to ascertain if the exposure is reportable. If the exposure is deemed reportable, the individual will fill out the Employee Injury/Exposure Incident Report and submit it to the Site HSO. Every injury must be reported. Every injury/accident also will be reported to the NAVFAC SW Project Manager, the Base POC, and the AMJV Project Manager.

In general, an exposure is reportable under these conditions:

- The person was exposed to vapors or aerosols of chemical compounds in excess of known health standards, as indicated by instrument readings.
- Skin or eye contact occurred with a liquid or solid containing chemical compounds, either by a direct splash, or by failure of protective gear.

- Chemical compounds were ingested or injected directly into the body.
- Any radiological exposure occurred.
- Any exposure to biohazards occurred.
- The person exhibits any symptoms of exposure, such as rash or headache.

An Accident and Illness Investigation Report Form will be used as the basis for the written documentation and investigation of the accidents resulting in Project Team personnel receiving more than non-intrusive first aid.

These accidents are to be verbally communicated to the Site HSO as soon as medical services are secured. These individuals will verbally notify the Site HSO within 24 hours of the accident. Necessary medical services and employee care are to be secured prior to the initiation of reporting and investigation.

The investigation will be thorough and performed by the injured person's immediate supervisor. The results of the investigation will be documented using the report form signed by the investigator. The form will then sent to the Office Manager, who, following a review, is also required to sign the form before forwarding it to the Site HSO. Following the Site HSO's review and signature, a copy of the form will be placed in the office/project file; the original will be forwarded to the Regional Health and Safety Coordinator.

9.2.3 Exposure/Injury Medical Follow-Up

As a follow-up to an injury or possible chemical exposure above established exposure limits, Project Team personnel are entitled to and encouraged to seek medical attention. If exposed, and depending upon the type of chemical, it may be critical to perform follow-up testing within 24 to 48 hours.

If an injury or exposure occurs, Project Team field personnel are to immediately notify the Field Supervisor/Field Health and Safety Coordinator and the Site HSO. The Field Supervisor/Field Health and Safety Coordinator and the field employee are responsible for completing the incident/injury form electronically. Depending on the injury or incident, Cal/OSHA may require the submittal of a report; therefore, the incident/injury report should be turned in to the Site HSO within 24 hours of the incident.

9.2.4 Occupational Injuries and Illness

The Regional Health and Safety Coordinator maintain a log of every occupational injury and illness in accordance with OSHA requirements. The log is maintained using OSHA Form 200. The Base POC, the NAVFAC SW Project Manager, and the AMJV Project Manager will also receive a copy of accident/injury reports.

10.0 ACCIDENT AND ILLNESS PREVENTION

This section establishes policy on Accident and Illness Prevention. The health and safety of each employee is of utmost importance. The prevention of occupationally induced illnesses and injuries takes precedence over operating productivity. Quality supervision, training and education opportunities, and protective clothing and equipment are provided to employees to ensure their maximum health and safety protection.

The objective is a health and safety program that reduces the number of illnesses and injuries to an absolute minimum. Strategy to achieve this objective includes the following:

- **Identification and employment of quality personnel.** In addition to a detailed interviewing session, previous employment record checks, investigation into education and training, and personal reference checks are tools to evaluate potential employability.
- **Quality, consistent, and ongoing health and safety training programs.** Training programs are designed to exceed those required in OSHA standards Title 29 CFR 1910 and Title 29 CFR 1926.
- **Identification and appraisal of accident and loss producing conditions and practices.** This element consists of a detailed hazard analysis of materials, materials handling operations, and materials handling systems, including advanced and detailed studies of the hazard potentials where possible.
- **Development of accident prevention and loss control methods, procedures, and programs.** Using knowledge in accident causation, control, and elimination of causation factors are the objectives of this program element. This is accomplished through the establishment of methods, development of procedures, and education of supervisors and managers.
- **Communication of accident and loss control intervention to the appropriate layers of management.** This element is accomplished with an accident information management system. With formatted information provided on the accident report form, a signature is required by the Project Manager and the appropriate Office Manager before being sent to corporate headquarters. The system allows for the generation of required documents (i.e., OSHA 200) as well as tracking and sorting accident type, cause, etc. This information is summarized and distributed throughout the appropriate management levels.
- **Assigning accountability and responsibility to Project Team personnel for implementation and maintenance of methods, procedures, and practices involved with the health and safety program.** Each office has a designated Site HSO who oversees implementation of the program elements on a day-to-day basis and instills and motivates proper attitudes towards health and safety with the branch office personnel.
- **Measurement and evaluation of the effectiveness of the accident and loss control system.** Annual summaries of frequency, type, and cost of accidents are used to evaluate program effectiveness. Quarterly summaries allow for trend and statistical analysis.

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11.0 SPILL PREVENTION AND CONTROL MEASURES

This section discusses spill prevention, control, containment, and emergency response in the event of a spill. AMJV personnel will conduct groundwater monitoring from monitoring wells located at each site. Spills or leaks occurring from these activities are not likely.

11.1 Spill Prevention, Control, and Containment

Chemicals or hazardous substances could be spilled during site tasks as a result of:

- transportation accidents;
- improper packaging practices;
- rupturing of drums or other storage containers; or
- improper handling of hazardous materials during off-loading.

The emergency plan will be activated in the event of unplanned spills of hazardous or unknown substances. In the event of any spill at the site, the field team leader and Site HSO are to be notified immediately by whomever first witnesses the emergency event.

11.1.1 Facility and General Prevention/Control Measures

The following specific spill prevention and control measures include procedures to be implemented in the field by project field personnel to reduce the possibility of liquid-waste spills, as well as actions to be taken if a spill occurs.

Preventive Measures. Preventive measures include the following activities.

- Inspect all United Nation (UN)-approved, 55-gallon drums upon delivery to the site to assure that each drum includes a resealable lid or a resealable lid with a small resealable sampling port (bung) near the top, on the side, or on the lid, and that the closure is not deformed or distorted.
- Do not fill drums completely to allow for possible expansion of liquid.
- Set the UN-approved, 55-gallon drums on pallets to facilitate transport via forklift (if necessary).
- Perform inspections of the storage area including UN-approved, 55-gallon drums while they are being filled and immediately after they are relocated to a temporary on-site storage area to check for possible leaks.
- Select flat areas for temporary storage away from high-traffic zones and storm or sewer drains.

Spill Containment and Control. The following actions will be taken by project field personnel assigned to field activities in the event of a spill.

- The site coordinator (field team leader) and Site HSO are to be notified immediately.

- Workers not involved in spill containment and/or cleanup shall evacuate the immediate area to reduce the likelihood of spreading contamination or being exposed to contamination.
- Designated emergency response personnel attired in coveralls and Level C PPE (if applicable) shall proceed to the spill area with a spill cleanup and control kit that includes absorbent materials.
- Attempts shall be made to stop the source(s) of spillage immediately.
- The Site HSO shall monitor for exposure to chemicals or hazardous substances during spill-cleanup work.
- The Site HSO shall stay at the spill area until the area has been cleared, inspected, and readied for reentry.
- A spill incident report shall be prepared by the Site HSO.
- If the spill is of known or potential hazardous waste and is stored under the 90-day accumulation rule, additional reports required by state law will be prepared.
- If a floating product (such as gasoline) is released into the water, the U.S. Coast Guard should be contacted via marine radio (Channel 16).

11.1.2 Spill Prevention

The purpose of this section is to provide planning instructions for response to spills of IDW or other hazardous materials stored for disposal at the NAS North Island waste storage site location. IDW will be stored in the designated project IDW storage area specified in the site-specific IDW management plan in the Work Plan for these projects. The field team leader, waste storage area supervisor, and any other designated individuals must identify situations having potential for hazardous material releases. Inspections of the IDW storage area and emergency response supplies are to be performed by the Site HSO during operations phase.

11.1.3 Spill Containment

Each IDW spill, leak, or incident will be assessed by the waste area storage supervisor or other qualified individual promptly upon discovery. This assessment will be conducted to characterize the degree of hazard to personnel and the environment and to implement effective control procedures. The responsible individual should attempt to determine the following information:

- types of materials released, container types, and storage location,
- amount of materials released or at risk of being released,
- location and direction of flow of the release,
- hazardous characteristics of the released material, and
- occurrence due to spill (e.g., fire, injury, illnesses, damage to environment).

The assessment will include possible environmental and human-health hazards from the release including inhalation exposure, water runoff, and chemical agents used to control the emergency. Table 11-1 lists suggested site-specific spill control equipment to choose from, location, and capabilities to be maintained for each IDW storage area.

Table 11-1. Suggested Containment Equipment

Item	Capability	Location
Absorbent 10-pound bag (minimum) or sufficient material to contain a 55-gallon drum spill (sorbent packs/pillows) compatible with the stored wastes	Absorb contents of a single drum of liquid or leakage from larger containers of solids or semisolids	Emergency supply bin within storage area
Shovel, polyethylene (nonsparking material), long-handled	Collect spilled material	Emergency supply bin within storage area
Scoop, short-handled	Collect spilled material	Emergency supply bin within storage area
Two extra drums or overpacks for material storage and disposal	Overpack for damaged drum or container to collect used absorbent material	Emergency supply bin within storage area
Pump, noncorrosive hand-operated for liquid transfer with appurtenances	Transfer liquid from damaged drum at 2 gallons per minute	Emergency supply bin within storage area
Duct tape	Seal or join plastic sheet, temporary patch of drums	Emergency supply bin within storage area
Emergency barrier warning tape or traffic cones	Control access to site, warn unauthorized personnel	Emergency supply bin within storage area
Heavy-duty plastic bags	Collect contaminated trash, personal protective equipment	Emergency supply bin within storage area
Labels for drums	Label all generated waste	Emergency supply bin within storage area
Sheet plastic, 6-mil polyethylene or herculite (400 square feet)	Cover ground, cover waste piles	Emergency supply bin within storage area
Warning signs	Warn unauthorized personnel	Posted
Spill kit inventory list	Assure kit content complete	Emergency supply bin within storage area
Fire extinguisher	Size 3A:40BC	Emergency supply bin within storage area

11.1.4 Monitoring

While the emergency response team (ERT) is cleaning the spill, the Site HSO will monitor for chemical exposures as necessary. During the cleanup, instrumentations such as PID and/or an FID and colorimetric indicator tubes may be used. Personnel monitoring using sampling pumps and collection media (e.g., activated charcoal tubes) may also be employed, depending on the Site HSO assessment.

11.1.5 Record Keeping

The Site HSO and Project Manager will document the spill in an Incident Report. The Incident Report will be forwarded to the AMJV project manager. Records of all hazardous materials releases will be maintained with the project files and the facility operating record. Information will include:

- time and date of incident,
- location of incident,
- size of release,
- chemicals involved,

- names of Site HSO and ERT,
- cleanup procedures,
- unusual or pertinent incidents during the cleanup,
- disposition of cleanup waste,
- follow-up actions, and
- government agencies contacted.

In addition to the above information, the final release report will be maintained in the project files.

11.1.6 Waste Management

All cleanup material resulting from an incident will be managed as the initial waste material.

11.2 Emergency Response Callout

11.2.1 Response Implementation

In the event of an unplanned spill or release of unknown or hazardous substances, the Site HSO will notify base-designated personnel who may implement the site spill control plan. The base will request outside or off-site assistance if required. Once at the site, the Site HSO will designate the spill as a restricted area and only authorized personnel (e.g., the ERT) will be permitted within the spill confines. ERT members and base personnel will be trained to contain and clean up spills from typical materials and quantities used on the project location. The Site HSO will set up physical barriers warning unauthorized personnel to stay clear of the site and provide technical guidance to the ERT as needed.

Once barriers have been established, the Site HSO will assess the spill conditions and determine whether the spill is small or large. This determination is based on the following criteria.

- Small spills involve a maximum volume of 55 gallons of a liquid or 100 pounds of a solid.
- Large spills involve liquids greater than 55 gallons or solids greater than 100 pounds.

Small spills may be remediated using absorbent materials. This task will be conducted by on-site workers and supervised by the Site HSO. The Site HSO will direct spill response operations and stay at the spill area until the area has been cleaned, surveyed, and prepared for release.

Action plans for large spills or small spills of highly toxic material should be developed quickly due to the potential for catastrophic events and off-site environmental contamination to the groundwater or neighboring facilities.

In the event of large spills, proper safety and health procedures will be established and communicated to the ERT prior to any control activity. The Site HSO will transfer response to the Hazardous Materials (HAZMAT) Team.

Until the HAZMAT Team can respond, ERT responsibilities consist of containing the spill to prevent contamination from spreading to outside areas and keeping unauthorized personnel from entering the restricted area. The base HAZMAT Team is responsible for actual spill containment and materials-release termination in accordance with the base spill containment and emergency response plans.

The Site HSO and ERT will assist the HAZMAT Team upon request and will stay at the spill area until released, or until the area has been cleaned, surveyed, and authorized for reentry.

The Project Manager and Site HSO will approve reentry to the site for routine use and will issue a final release report pertaining to cleanup of the area.

11.2.2 Notification

If, in the Site HSO's assessment, off-site impacts are possible, the Site HSO will immediately notify the Naval On-Scene Commander or other designated individual. If spillage to bay water occurs, the U.S. Coast Guard must be notified. The base representative will notify off-site authorities. Additionally, they will provide a report for immediate transmission to the State Office of Emergency Services (or other state-designated agency) containing:

- name and telephone number of reporter,
- name and address of facility,
- time and type of incident,
- name and quantity of materials involved,
- extent of injuries, and
- possible off-site hazards to human health and/or the environment.

The types and quantities of hazardous material spills/releases that could be anticipated at this site are within the capabilities of control by on-site personnel. However, should an incident involve a situation that represents potential life-threatening situations or damage to the environment, the Site HSO will contact the designated base environmental contacts for emergency response support. It is the Site HSO's responsibility to notify the Naval On-Scene Commander and relate pertinent information for response purposes. It may also be necessary to contact federal, state, or local agencies for compliance with environmental and safety and health regulations. Agency notification is the responsibility of the project manager for the affected site(s) in coordination with the base representative.

Prior to reactivation of the facility, the California Environmental Protection Agency Department of Toxic Substances Control and other appropriate state and local authorities will be notified that the facility is in compliance with 22 CCR 66265.56(h).

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12.0 MEDICAL SURVEILLANCE

A medical surveillance program will not be instituted by AMJV because their employees do not meet the minimum requirements to necessitate such a program. According to the 29CFR1910.120(f)(2)(i), AMJV employees are not expected to be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for more than 30 days year. Additionally, per 29CFR1910.120(f)(2)(ii), AMJV employees are not expected to wear a respirator for more than 30 days per year.

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13.0 REFERENCES

California Code of Regulations (CCR) Title 8. Section 3200, General Industry Safety Orders; Section 3204, Access to Employee Exposure and Medical Records; Section 3395 Heat Illness Prevention, Section 5192, Hazardous Waste Operations and Emergency Response; Section 5144, Respiratory Protection; Section 5194, Hazard Communication; Section 5207(F), Bloodborne Pathogens; and Section 6184, Employee Alarm Systems.

Code of Federal Regulations (CFR) Title 29. Section 1910.1020, Access to Employee Exposure and Medical Records; Section 1910.120; Hazardous Waste Operations and Emergency Response; Section 1910.134, Respiratory Protection; Section 1910.165, Employee Alarm Systems; Section 1910.1030, Bloodborne Pathogens; Section 1910.1200, Hazard Communication; Section 1913.10, Rules for Agency Practice and Procedure Concerning OSHA Access to Employee Medical Records; Section 1926, Safety and Health Regulations for Construction; and Section 1926.65, Hazardous Waste Operations and Emergency Response.

Haley & Aldrich, Inc. 2005. Report on Supplemental (Phase III) Groundwater Data Gap Assessment Investigation, Huntington Beach Facility, Huntington Beach, CA. August

MACTEC Engineering and Consulting, Inc. *Health and Safety Manual*, April 2003 or latest revision.

NIOSH/OSHA *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, NIOSH/OSHA/USCG/U.S. EPA, October 1985.

U.S. Army Corps of Engineers Safety and Health/Requirements Manual, EM 385-1-1, September 2008 or latest revision.

U.S. Department of Health and Human Services, 2004, NIOSH Pocket Guide to Chemical Hazards, DHHS (NIOSH) Publication No. 97-140.

U.S. Department of the Navy Environmental Restoration Program Manual, Naval Facilities Engineering Command, August 2006 Update.

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APPENDIX A

STATEMENT OF ACKNOWLEDGEMENT

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STATEMENT OF ACKNOWLEDGEMENT

Navy Contract:	**N62473-09-D-2613, Contract Task Order No. 0018**
Accord Project No:	**101003**
Project Name:	**Preliminary Assessment/Site Inspection, Installation Restoration Program Site 75 Agricultural Well KAYO-SB**
Site Location:	**Naval Weapons Station Seal Beach, Seal Beach, California**
Project Manager:	**Qihai Chen (AMJV); (626) 617-2171**
Project SHSO:	**James Albright (AMJV); (714) 492-5210**

Employee Statement of Acknowledgment

I hereby certify that I have read and that I understand the health and safety guidelines contained in the AMJV Site Safety and Health Plan for the above named project.

Employee Signature	Employee Name	Project Role	Date

The original signature form shall be filed with the Project Manager.

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APPENDIX B

INCIDENT REPORT FORM

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Health and Safety Program

INCIDENT REPORT FORM

Appendix B

PREPARED BY:

Name: _____

Date: _____

Signature: _____

Reporter must deliver this report to the operating unit health and safety representative within 24 hours of the reported incident for medical treatment cases and within 5 days for other incidents.

REVIEWED BY:

_____

Site Safety and Health Officer Date

_____

Project Manager Date

DISTRIBUTION:

- **AMJV Safety and Health Manager**
- **Project File**
- **Occupational Health Specialist**
- **Local Human Resources (injury/illness cases only)**

CORRECTIVE ACTIONS *(for Internal Use Only):*

INCIDENT REPORT FORM

ADMINISTRATIVE INFORMATION:

AMJV Office: _____

Project Number: _____

Date/Time of Incident: _____

Location: _____

FOR INJURIES / ILLNESSES:

Name of Injured Employee: _____

Age of Employee: _____

Sex: ☐ Male ☐ Female

See a Doctor: ☐ Yes ☐ No
If yes, attach doctor's report

Describe Injury:

TYPE OF INCIDENT **(Check all applicable items)**			
☐ Illness	☐ Injury	☐ Fire, Explosion, Flash	☐ Unexpected Exposure
☐ Property Damage		☐ Vehicular Accident	☐ Other (describe):

DESCRIPTION OF INCIDENT: Describe the facts contributing to the incident. Identify individuals involved, witnesses, and their affiliations. Attach additional sheets, drawings, or photographs as needed.

APPENDIX C

EMERGENCY RESPONSE CRITIQUE FORM

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EMERGENCY RESPONSE CRITIQUE FORM

ADMINISTRATIVE INFORMATION:

AMJV Office Location: _____

Project Number: _____

Date/Time of Incident: _____

Incident Location: _____

EMERGENCY CORRECTIVE ACTIONS TAKEN:

EMERGENCY RESPONSE PROBLEMS ENCOUNTERED:

EMERGENCY RESPONSE CRITIQUE FORM

CORRECTIVE ACTIONS TAKEN (IF ANY):

EMERGENCE RESPONSE LESSONS LEARNED:

EMERGENCY RESPONSE PROGRAM CHANGES:

EMERGENCY RESPONSE CRITIQUE FORM

PREPARED BY:

Name: _____

Date: _____

Signature: _____

Reporter must deliver this report to the operating unit health and safety representative within 24 hours of the reported incident for medical treatment cases and within 5 days for other incidents.

REVIEWED BY:

Site Safety and Health Officer Date

Project Manager Date

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APPENDIX D

EMERGENCY CONTACT AND HOSPITAL ROUTE MAP

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EMERGENCY CONTACT INFORMATION

Emergency Contact	Telephone No.
U.S. Coast Guard National Response Center	(800) 424-8802
InfoTrac Chemical Monitoring System	(800) 535-5053
National Poison Referral System	(800) 222-1222
Fire Department	911 or (562) 626-7280/7518/7005
Fire Prevention	(562) 626-7341
Police Department	911
Safety Department	(562) 626-7695/7611/7396/7096
Security Dispatch	(562) 626-7229
Hazardous Waste	(562) 626-7356
Emergencies Only (Fire, Medical, Haz-Mat spills)	(562) 626-7333
Health and Safety Personnel:	
Site Health and Safety Officer: **James Albright (AMJV)**	(714) 492-5210
Project Manager: **Qihai Chen (AMJV)**	(626) 617-2171
Project Manager: **Fred Essig (Brady)**	(858) 634-4552
Program Manager: **Time Shields (Brady)**	(858) 634-4514
Client Contact:	
Remedial Project Manager: **Brenda Reese (NAVFAC SW)**	(619) 532-4209
Activity Point of Contact: **Pei-Fen Tamashiro (NAVWPNSTA Seal Beach)**	(562) 626-7897
Explosive Safety: **Dave Jenkins**	(562) 626-7096
Engineer in Charger (EIC): **Scott Kehe**	(949) 726-2506

Medical Emergency	
Kindred Hospital Westminster	(714) 893-4541
California Poison Control System	(800) 876-4766

Note: This sheet must be posted or made available on site.

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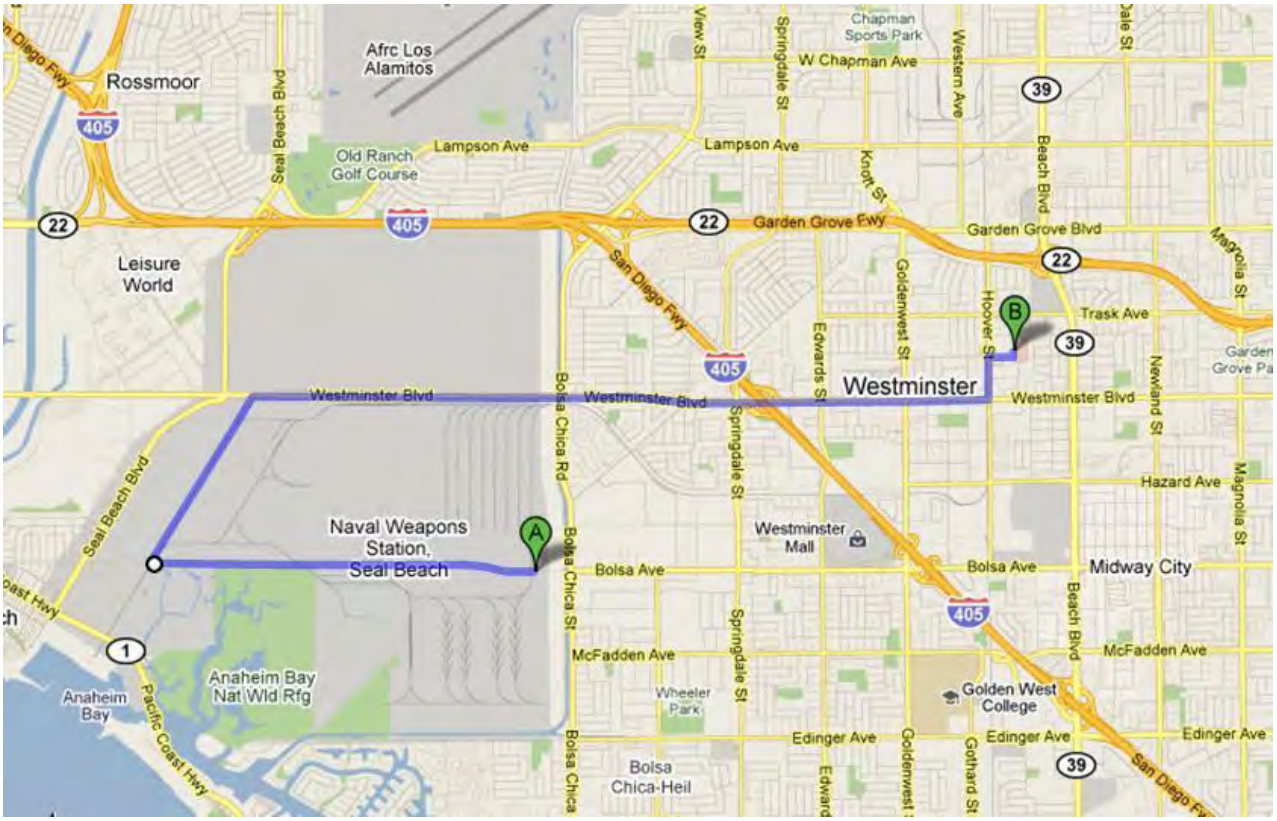
KINDRED HOSPITAL WESTMINSTER DIRECTIONS AND LOCATION MAP

Route to Kindred Hospital Westminster from Inside of NAVWPNSTA Seal Beach

Kindred Hospital Westminster is located 200 Hospital Circle, Westminster, California 92683, Tel: (714) 893-4541. From inside of NAVWPNSTA Seal Beach, the hospital is located approximately eight (8) miles from the site. The hospital can only be accessed after exiting from the North Gate.

Directions: From Site 75, head west on Bolsa Avenue towards Devlin Road (restricted usage road). Turn right Kitts Hwy (restricted usage road). Continue onto A T Road (restricted usage road). Turn right at Westminster Boulevard. Turn left at Hoover Street. Turn right at 21st Street. Turn left at Hospital Circle and the hospital will be on the right.



Note: This sheet must be posted or made available on site.

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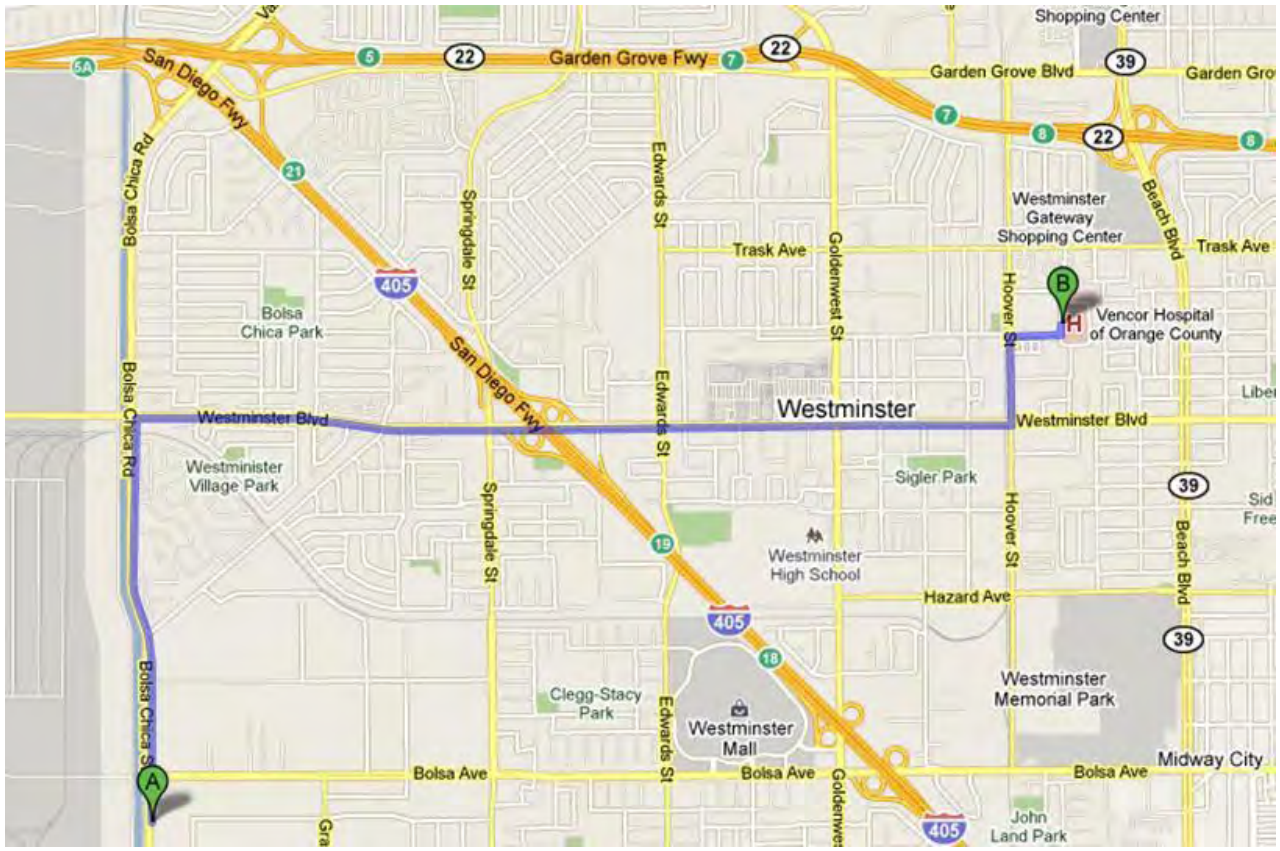
KINDRED HOSPITAL WESTMINSTER DIRECTIONS AND LOCATION MAP

Route to Kindred Hospital Westminster from Outside of NAVWPNSTA Seal Beach

Kindred Hospital Westminster is located 200 Hospital Circle, Westminster, California 92683, Tel: (714) 893-4541. From outside of NAVWPNSTA Seal Beach, the hospital is located approximately four (4) miles from the site. The hospital can be accessed by using local streets.

Directions: From Site 75, head north on Bolsa Chica Road toward Bolsa Avenue. Turn right at Westminster Boulevard. Turn left at Hoover Street. Turn right at 21st Street. Turn left at Hospital Circle and the hospital will be on the right.



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ATTACHMENT 2

ACCIDENT PREVENTION PLAN FORMS

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ACCIDENT PREVENTION PLAN
ACKNOWLEDGEMENT AGREEMENT

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ACCIDENT PREVENTION PLAN ACKNOWLEDGEMENT AGREEMENT

Project Name: Preliminary Assessment/Site Inspection, IRP Site 75, Agricultural Well KAYO-SB, NAVWPNSTA Seal Beach, Seal Beach, California

Project Number: N62473-09-D-2613, Delivery Order No. 0018

I have read and understand the accident prevention plan indicated above and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the safety requirements specified in the plan.

Name	Signature	Employer	Date

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TAILGATE SAFETY MEETING FORM

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TAILGATE SAFETY MEETING FORM

Date: _____ Time: _____ Project No. N62473-09-D-2613, DO-0018

Client: NAVFAC SW Site Location: NAVWPNSTA Seal Beach

Site Activities Planned for Today: _____

_____

Safety Topics Discussed
Protective clothing and equipment: Level D PPE (hard hats, steel toed boots, long sleeve shirts, long pants, reflective vest, nitrile gloves, etc.), safety cones, signs.
Chemical hazards: Chemical preservatives (HCl) and contaminants found in groundwater. Solvent and hydraulic oil used by the sonic drill rig.
Physical hazards: Moving vehicles, moving forklift, open monitoring wells, slip, trip, and fall.
Environmental and biohazards: Heat stress, high winds, and insect bites.
Equipment hazards: Electrical shock from electric tools, moving parts from the sonic drill rig, pinching hazard, straining of back from lifting heavy equipment, and sharp objects.
Decontamination procedures: Trip rinse using soapy water, rinse water, and DI water. High pressure steam for decontamination in between borings.
Other: Identify the location of the porta-potty and IDW yard.
Review of emergency procedures: Identify location of first-aid kit, eye wash, evacuation route, hospital route, and emergency phone numbers.
Employee Questions or Comments:

Attendees	
Printed Name	**Signature**

Meeting Conducted by:

_____ _____

Name Title

_____ _____

Signature Date

SITE LOG

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SITE LOG

Site Name: IRP Site 75, Agricultural Well KAYO-SB, NAVWPNSTA Seal Beach, Seal Beach, CA

Date:_____

Name (print)	Company	Time	
		In	Out

Comments:

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HEAT STRESS MONITORING FORM

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HEAT STRESS MONITORING FORM

Site Name: IRP Site 75, Agricultural Well KAYO-SB, NAVWPNSTA Seal Beach, Seal Beach, CA

Date:_____

Name of the employee	Heart Rate				
	Beginning of day(1)	1st Break(2)	2nd Break(2)	3rd Break(2)	4th Break(2)

Notes:

1. Count personnel heart rate by the radial pulse for 1 minute at the beginning of the day, prior to start of activities. Note values in table.

2. At the beginning of the first break period, count the heart rate for one minute. Wait 30 seconds and count the heart rate a second time. Note values in table. If the initial heart rate exceeds 110 beats per minute (BPM), shorten the next work cycle by 1/3. Allow person to rest until the heart rate decreases to below 90 BPM. If the heart rate does not decrease by 10 BPM between each successive measurement (a total reduction of 20 BPM), shorten the next work cycle by 1/3. Person is to rest until the heart rate has dropped at least 20 BPM or decreases to below 90 BPM, whichever is lower. Repeat procedure at the next break. If the conditions identified above are encountered, the break period should be doubled and the work cycle shortened by 1/3 again.

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ACCIDENT AND ILLNESS INVESTIGATION REPORT

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ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: _____
Subsidiary Health and Safety Representative

cc: _____
Workers Compensation Administrator

Project name: PA/SI, IRP Site 75, Agricultural Well KAYO-SB, NAVWPNSTA Seal Beach, Seal Beach, CA

Project number: N62473-09-D-2613, DO-0018

Prepared by: _____

Position: _____

Office: _____

Telephone number: _____

Fax number: _____

Information Regarding Injured or Ill Employee

Name: _____ Office: _____

Home address: _____ Gender: M ☐ F ☐ No. of dependents: _____

_____ Marital status: _____

Home telephone number: _____ Date of birth: _____

Occupation (regular job title): _____ Social security number: _____

Department: _____

Date of Accident: _____ **Time of Accident:** _____ a.m. ☐ p.m. ☐

Time Employee Began Work: _____ ☐ Check if time cannot be determined

Location of Incident

Street address: _____

City, state, and zip code: _____

County: _____

Was place of accident or exposure on employer's premises? Yes ☐ No ☐

Information About the Incident

What was the employee doing just before the incident occurred? Describe the activity as well as the tools, equipment, or material the employee was using. Be specific. Examples: "Climbing a ladder while carrying roofing materials"; "Spraying chlorine from hand sprayer"; "Daily computer key-entry"

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

What Happened? Describe how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time"

What was the injury or illness? Describe the part(s) of the body affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples "Strained back"; "Chemical burn, right hand"; "Carpal tunnel syndrome, left wrist"

Describe the Object or Substance that Directly Harmed the Employee: Examples: "Concrete floor"; "Chlorine"; "Radial arm saw." If this question does not apply to the incident, write "Not applicable."

Did the employee die? Yes ☐ No ☐ Date of death: _____

Was employee performing regular job duties? Yes ☐ No ☐

Was safety equipment provided? Yes ☐ No ☐ Was safety equipment used? Yes ☐ No ☐

Note: Attach any police reports or related diagrams to this report.

Witness (Attach additional sheets for other witnesses.)

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

Medical Treatment Required? ☐ Yes ☐ No ☐ First aid only

Name of physician or health care professional: _____

If treatment was provided away from the work site, provide the information below.

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? ☐ Yes ☐ No

Was the employee hospitalized over night as an in-patient? ☐ Yes ☐ No

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Accord MACTEC Joint Venture employee injury or illness was first reported to:

_____

Date of Report: _____ **Time of Report:** _____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

_____

Printed Name of Injured Employee Telephone Number

_____

Signature of Injured Employee Date

The signatures provided below indicate that appropriate personnel have been notified of the incident.

Title	Printed Name	Signature	Telephone Number	Date
Office Manager				
Project Manager				
Site Safety Coordinator or Office Health and Safety Representative				

To Be Completed by the Subsidiary Health and Safety Representative

Classification of Incident:

☐ Injury ☐ Illness

Result of Incident:

☐ First aid only

☐ Days away from work

☐ Remained at work but incident resulted in job transfer or work restriction

☐ Incident involved days away and job transfer or work restriction

☐ Medical treatment only

No. of days away from work _____

Date employee left work

Date employee returned to work _____

No. of days placed on restriction or job transfer: _____

OSHA Recordable Case Number _____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

To Be Completed by Human Resources

Social security number: _____

Date of hire: _____ Hire date for current job: _____

Wage information: $ _____ per ☐ Hour ☐ Day ☐ Week ☐ Month

Position at time of hire: _____

Current position: _____ Shift hours: _____

State in which employee was hired: _____

Status: ☐ Full-time ☐ Part-time Hours per week: _____ Days per week: _____

Temporary job end date: _____

To Be Completed During Report to Workers Compensation Carrier

Date reported: _____ Reported by: _____

Confirmation number: _____

Name of contact: _____

Field office of claims adjuster: _____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

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FIELD AUDIT CHECKLIST

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FIELD AUDIT CHECKLIST

Project Name: PA/SI, IRP Site 75, Agricultural Well KAYO-SB Project No. N62473-09-D-2613, DO-0018

Field Location: NAVWPNSTA Seal Beach, Seal Beach, CA Completed by: _____

Project Manager: _____ Site Health & Safety Officer: _____

General Items		In Compliance?		
Accident Prevention Plan Requirements		**Yes**	**No**	**NA**
1	Approved accident prevention plan (APP) on site or available			
2	Names of on-site personnel recorded in field logbook or daily log			
3	APP compliance agreement form signed by all on-site personnel			
4	Material Safety Data Sheets on site or available			
5	Designated site safety coordinator present			
6	Daily tailgate safety meetings conducted and documented			
7	On-site personnel meet APP requirements for medical examinations, fit testing, and training (including subcontractors)			
8	Compliance with specified safe work practices			
9	Documentation of training, medical examinations, and fit tests available from employer			
10	Exclusion, decontamination, and support zones delineated and enforced			
11	Windsock or ribbons in place to indicate wind direction			
12	Illness and injury prevention program reports completed (California only)			
Emergency Planning				
13	Emergency telephone numbers posted			
14	Emergency route to hospital posted			
15	Local emergency providers notified of site activities			
16	Adequate safety equipment inventory available			
17	First aid provider and supplies available			
18	Eyewash stations in place			
Air Monitoring				
19	Monitoring equipment specified in APP available and in working order			
20	Monitoring equipment calibrated and calibration records available			
21	Personnel know how to operate monitoring equipment and equipment manuals available on site			
23	Environmental and personnel monitoring performed as specified in APP			

Safety Items		In Compliance?		
Personal Protection		**Yes**	**No**	**NA**
1	Splash suit			
2	Chemical protective clothing			
3	Safety glasses or goggles			
4	Gloves			
5	Overboots			
6	Hard hat			
7	Dust mask			
8	Hearing protection			
9	Respirator			
Instrumentation				
10	Combustible gas meter			
11	Oxygen meter			
12	Organic vapor analyzer			
Supplies				
13	Decontamination equipment and supplies			
14	Fire extinguishers			
15	Spill cleanup supplies			
Corrective Action Taken During Audit:				
Corrective Action Still Needed:				

Note: NA = Not applicable

Auditor's Signature

Site Health and Safety Officer's Signature

Date

FIELD AUDIT CHECKLIST

(Continued)

Project Name: PA/SI, IRP Site 75, Agricultural Well KAYO-SB			Project No. N62473-09-D-2613, DO-0018		
Location: NAVWPNSTA Seal Beach, Seal Beach, CA			Project Manager:		
Type: ☐ Baseline ☐ Reassessment		Date:		Valid for _____ days	
Job/Task Description:				☐ Routine ☐ Escape	
Hazard Identification and Source:		Workplace Factors: Temperature: _____ Humidity: _____ Other: _____		User Factors: Work rate: _____ Protective clothing: _____ Other: _____	
Chemical:					
PEL:					
ACGIH TLV:					
Form (part/gas/vapor):					
IDLH:					
Eye Irritant (Y/N):					
Skin Absorption(Y/N):					
Monitoring (Y/N) :*					
Frequency:					
Maximum Concentration Estimated:**					
* Monitoring Method: ☐ PID ☐ NIOSH method: _____ ☐ FID ☐ Vapor badge: _____ ☐ Detector tube: _____ ☐ Other: _____			Respirator Type: ☐ Half-face disposable Brand: _____ ☐ Half-face reusable Brand: _____ ☐ Full-face Brand: _____ ☐ Air-supplied airline Brand: _____ ☐ Air-supplied SCBA Brand: _____ ☐ PAPR Brand: _____ ☐ ESCBA Brand: _____		
** If concentrations exceed the immediately dangerous to life and health (IDLH) value, use air-supplied systems.			Vapor and Gas Cartridge Exchange: ESLI: ☐ Yes ☐ No Exchange frequency: _____		
Cartridge/Filter Selection ☐ N100 ☐ R100 ☐ P100 ☐ N99 ☐ R99 ☐ P99 ☐ N95 ☐ R95 ☐ P95 ☐ Organic vapor ☐ Acid gas ☐ Ammonia ☐ Mercury ☐ Formaldehyde ☐ Combo: _____ ☐ Other: _____			Basis for Exchange Frequency ☐ Manufacturer's data ☐ Workplace simulations ☐ Experimental methods ☐ AIHA "Rules of Thumb" ☐ Predictive modeling ☐ Analogous chemical structure ☐ OSHA Regulation: _____ ☐ Other: _____		
_____ _____ Completed by Date			_____ _____ Reviewed by Date		

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ATTACHMENT 3

HEALTH AND SAFETY CREDENTIALS

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CLICKSAFETY®

CERTIFICATE OF WEB BASED TRAINING

This is to certify that

JAMES ALBRIGHT

Has successfully completed

Hazwoper Refresher 2010

29 CFR 1910.120

The course was developed and presented by ClickSafety

Serial Number: 4155927 **Completed:** 7/19/2010

CLICKSAFETY®

TEMPORARY CERTIFICATE OF COMPLETION

This acknowledges that

JAMES ALBRIGHT

Has successfully completed

OSHA 30 Hour Construction

The course was developed by ClickSafety.
Official OSHA completion card to follow within 6 weeks

Serial Number: 4155858

Completed: 7/12/2010

Certificate Of Completion

IS HEREBY PRESENTED TO

James Albright

In Recognition Of Successful Completion Of CPRToday! Inc. Training Courses In

BLS: Adult CPR, Child CPR & Infant CPR
Emergency Basic First Aid
Bloodborne Pathogens
Cognitive A.E.D. Skills

90847534-6957	December 2012	Regina Bennett
CERTIFICATION NUMBER	EXPIRATION DATE	INSTRUCTOR

LET IT BE KNOWN THAT THE ABOVE NAMED INDIVIDUAL HAS SUCCESSFULLY MET EVALUATION OBJECTIVES CONSISTENT WITH NATIONALLY-RECOGNIZED ECC/ILCOR/AHA COGNITIVE ASSESSMENT GUIDELINES FOR EMERGENCY CARE AND RESUSCITATION, AND IN ACCORDANCE WITH NATIONAL HEALTH & SAFETY FOUNDATION AND CPRTODAY INC. STANDARDS AND CERTIFICATION TERMS & CONDITIONS

Certificate Of Completion

James Albright

Has attended and completed the training course entitled:

Asbestos Contractor/Supervisor Refresher Course

DOSH Course # **CA-015-04**
Certificate # **ASR052710002N**
Training Director: **Alan D. Dages**
Signature:

Start Date: **5/27/2010**
Course End Date: **5/27/2010**
Expiration Date: **5/27/2011**
Instructor: **Orville Allan**

This course satisfies the education requirements for Asbestos accreditation under the Toxic Substances Control Act, Title II. This course has been approved by the Department of Industrial Relations, Division of Occupational Safety and Health of the State of California

NATEC INTERNATIONAL
1100 Technology Circle – Suite A, Anaheim, CA 92805
www.natecintl.com 714/678-2750 800/969-3228 (FAX) 714/678-2757

Important Industry Contacts

CAL-OSHA:	Ph# (916) 574-2993 Ph# (916) 483-0572 Fax Notification Website: www.dir.ca.gov/calosha.com
DPH/CLPPB:	Ph# (510) 622-5000 Website: www.dph.ca.gov/childlead
SCAQMD:	Ph# (909) 396-3739 Ph# (909) 396-3342 (Fax)

NATEC International
Environmental Training and Consulting
1100 Technology Circle, Suite A • Anaheim, CA 92805
(714) 678-2750, (800) 969-3228, Fax (714) 678-2757
www.natecintl.com

NATEC International
1100 Technology Circle, #A, Anaheim, CA
714/678-2750 (Fax) 714/678-2757 92905
This Card Acknowledges That
James Albright
Holds Training Certification For
Asbestos Contractor/Supervisor Refresher Course
(Valid for 12 months)

Training Date 5/27/2010
Certificate No. ASR052710002N
Alan D. Dages
Training Director

Inland Erosion Control Inc.

CERTIFICATE OF TRAINING

James Albright

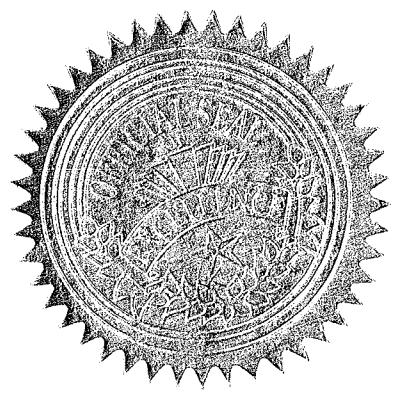
Has completed 4.0 hours of training in Erosion and Sediment Control

Certification Date: August 26, 2008

#675

Mike Harding, CPESC

Robert Patterson, CPESC



NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST
U.S. ARMY Corps of Engineers

US Army Corps of Engineers®

NAVFAC

PRESENTS THIS CERTIFICATE TO

James Albright

WHO HAS SUCCESSFULLY COMPLETED

June 18 / 19, 2009

U.S.A.C.E. Construction Quality Management for Contractors

PRESENTED AT: Associated General Contractors of America
San Diego Chapter, Inc. Training Facility

Date: *June 19, 2009*

Kugan Panchadsaram
CQM Facilitator

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

San Diego Chapter, In

"Building Your Quality of Lif

Glen Schaffer
AGC-San Diego Director of Marketing & Education
CQM Training Coordinator

This Certificate is valid for 5 years from the date above

Certificate of Completion

This certifies that

Qihai Chen

Has Successfully completed

8 Hour HAZWOPER Supervisor Refresher Training

This certificate does not in itself indicate initial 8 Hour OSHA Supervisor Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120

And all State OSHA and EPA Regulations As Well

Julius P. Griggs
Julius P. Griggs
Instructor #892

101214539028
Certificate Number

12/14/2010
Issue Date

SAFETY UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

690A East Los Angeles Ave Suite 180 Simi Valley, CA 93065
888-309-7233 * 805-306-8027 * 866-869-7097 (F)
www.safetyunlimited.com

Proof of initial certification and subsequent refresher training is NOT required to take refresher training
Want to be sure this certificate is valid? Visit safetyunlimited.com/verification

CINTAS®
FIRST AID & SAFETY

This is to certify that

Qihai Chen

Cintas First Aid & Safety
6440 Lusk Blvd D108 San Diego 92121

This acknowledges that:

Qihai Chen

Accord Engineering

has successfully completed

Bloodborne Pathogen Awareness

OSHA 29 CFR 1910.1030

Date:	Expires:	Instructor
3/25/2011	3/24/2012	Carlo Emami

Successfully completed the
Cintas First Aid/CPR/AED/Bloodborne Pathogens
Workplace training course.

March 25, 2011

Carlo Emami - Instructor

Presented by: Cintas First Aid & Safety • 6440 Lusk Blvd. • San Diego, CA. 92121 • (858) 458-5900

American Health Care Academy ID: 488341
Providing Quality Health Care

This recognizes that

Fred Essig

has completed the requirements for

Adult, Child, Infant CPR/AED

conducted by

American Health Care Academy

03-22-2010	03-22-2012
Date Completed:	Valid Until:

Instructor's Signature Fred Essig

Holder's Signature

Call 911 incase of a medical emergency
Call 1-800-222-1222 in a poison emergency
For CPR/AED or First Aid training information
Call 1-888-277-7865

American Health Care Academy **Rev, 1 2006**
Renewal Recommended every 2 years

American Health Care Academy ID: 488341
Providing Quality Health Care

This recognizes that

Fred Essig

has completed the requirements for

First Aid

conducted by

American Health Care Academy

03-22-2010	03-22-2012
Date Completed:	Valid Until:

Instructor's Signature Fred Essig

Holder's Signature

Call 911 incase of a medical emergency
Call 1-800-222-1222 in a poison emergency
For CPR/AED or First Aid training information
Call 1-888-277-7865

American Health Care Academy **Rev, 1 2006**
Renewal Recommended every 2 years

OSHA 001968469

U.S. Department of Labor
Occupational Safety and Health Administration

Fred Essig

has successfully completed a 10-hour Occupational Safety and Health Training Course in

Construction Safety & Health

Vince Hundley — 02/06/09

(Trainer) (Date)

Association of
Bay Area Governments

ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Fred Essig

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)
on
June 23, 2010

and has earned
IACET authorized 0.8 CEUs (Continuing Education Units) from the program

Certificate No. 81702
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreadie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt

Paul W. Gantt, CSP, REA
Safety Compliance Management, Inc.

Association of
Bay Area Governments

ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Tara Lieberman

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)

on

September 30, 2010

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program

Certificate No. 83430
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Chanell Gumbs, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, CSP, REA
Safety Compliance Management, Inc.

Certificate of Completion

This certifies that

Jesse MacNeill

Has Successfully completed

8 Hour HAZWOPER Refresher Training

Refresher certification does not necessarily indicate initial 24 or 40 Hour HAZWOPER certification

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)

And all State OSHA and EPA Regulations As Well

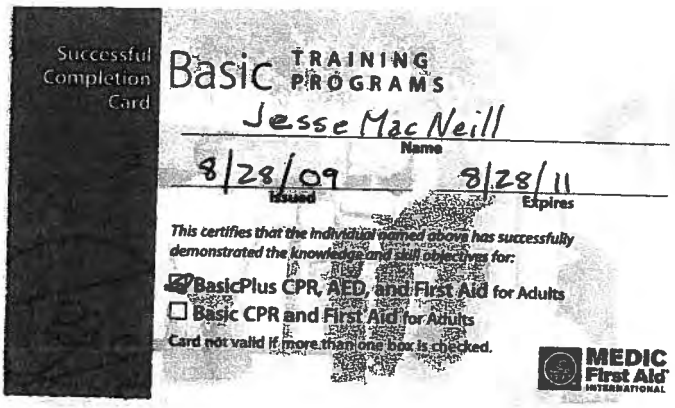
Julius P. Griggs	100224512045	2/24/2010
Julius P. Griggs Instructor #892	Certificate Number	Issue Date

SAFETY UNLIMITED, Inc.
OSHA Compliant Safety Trailng Since 1993

690A East Los Angeles Ave Suite 180 Simi Valley, CA 93065
888-309-7233 * 805-306-8027 * 866-869-7097 (F)
www.safetyunlimited.com

Proof of initial certification and subsequent refresher training is NOT required to take refresher training

Want to be sure this certificate is valid? Visit safetyunlimited.com/verification



Successful Completion Card

Basic TRAINING PROGRAMS

Jesse MacNeill
Name

8/28/09
Issued

8/28/11
Expires

This certifies that the individual named above has successfully demonstrated the knowledge and skill objectives for:

☑ BasicPlus CPR, AED, and First Aid for Adults

☐ Basic CPR and First Aid for Adults

Card not valid if more than one box is checked.

MEDIC First Aid INTERNATIONAL

Association of
Bay Area Governments

ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Timothy Shields

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)

on

September 17, 2010

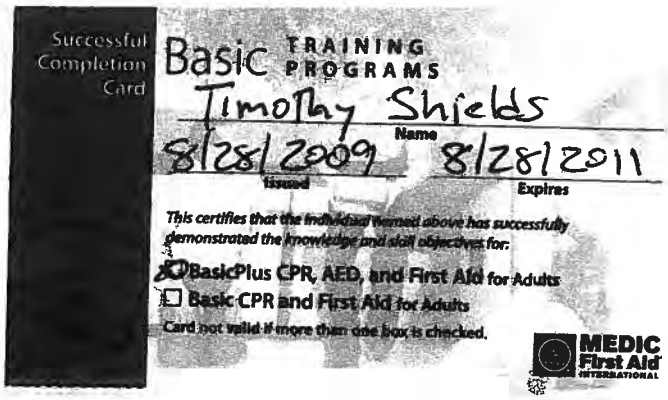
and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program

Certificate No. 83095
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Chanell Gumbs, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, CSP, REA
Safety Compliance Management, Inc.



Successful Completion Card

Basic TRAINING PROGRAMS

Timothy Shields
Name

8/28/2009
Issued

8/28/2011
Expires

This certifies that the individual named above has successfully demonstrated the knowledge and skill objectives for:

☒ BasicPlus CPR, AED, and First Aid for Adults

☐ Basic CPR and First Aid for Adults

Card not valid if more than one box is checked.

MEDIC First Aid INTERNATIONAL

ATTACHMENT 4

MATERIAL SAFETY DATA SHEET

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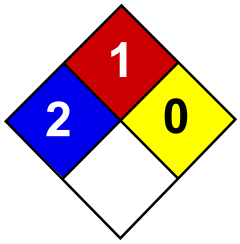

Material Safety Data Sheet
1,1,1-Trichloroethane MSDS

Section 1: Chemical Product and Company Identification

Product Name: 1,1,1-Trichloroethane

Catalog Codes: SLT4180, SLT2167, SLT3460

CAS#: 71-55-6

RTECS: KJ2975000

TSCA: TSCA 8(b) inventory: 1,1,1-Trichloroethane

CI#: Not available.

Synonym:

Chemical Formula: CH3CCl3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{1,1,1-}Trichloroethane	71-55-6	100

Toxicological Data on Ingredients: 1,1,1-Trichloroethane: ORAL (LD50): Acute: 9600 mg/kg [Rat]. 6000 mg/kg [Mouse]. DERMAL (LD50): Acute: 15800 mg/kg [Rabbit]. VAPOR (LC50): Acute: 18000 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant), of ingestion. Hazardous in case of skin contact (irritant, permeator), of inhalation. Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, the nervous system, liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 537°C (998.6°F)

Flash Points: Not available.

Flammable Limits: LOWER: 7.5% UPPER: 12.5%

Products of Combustion: These products are carbon oxides (CO, CO2), halogenated compounds.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of oxidizing materials, of acids, of alkalis.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive to explosive in presence of oxidizing materials, of acids, of alkalis.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 350 STEL: 440 CEIL: 440 (ppm) from ACGIH (TLV) [1995] TWA: 1900 STEL: 2460 CEIL: 2380 (mg/m3) from ACGIH [1995]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 133.41 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: 74.1°C (165.4°F)

Melting Point: -32.5°C (-26.5°F)

Critical Temperature: Not available.

Specific Gravity: 1.3376 (Water = 1)

Vapor Pressure: 100 mm of Hg (@ 20°C)

Vapor Density: 4.6 (Air = 1)

Volatility: Not available.

Odor Threshold: 400 ppm

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 6000 mg/kg [Mouse]. Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 18000 ppm 4 hour(s) [Rat].

Chronic Effects on Humans: The substance is toxic to lungs, the nervous system, liver, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Detected in maternal milk in human.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : 1,1,1-Trichloroethane : UN2831 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: 1,1,1-Trichloroethane Massachusetts RTK: 1,1,1-Trichloroethane TSCA 8(b) inventory: 1,1,1-Trichloroethane SARA 313 toxic chemical notification and release reporting: 1,1,1-Trichloroethane CERCLA: Hazardous substances.: 1,1,1-Trichloroethane

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).

DSCL (EEC):
R38- Irritating to skin. R41- Risk of serious damage to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:31 PM

Last Updated: 11/01/2010 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

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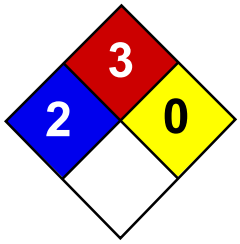

Material Safety Data Sheet
1,1-Dichloroethane MSDS

Section 1: Chemical Product and Company Identification

Product Name: 1,1-Dichloroethane

Catalog Codes: SLD3280

CAS#: 75-34-3

RTECS: KI0175000

TSCA: TSCA 8(b) inventory: 1,1-Dichloroethane

CI#: Not available.

Synonym:

Chemical Name: 1,1-Dichloroethane

Chemical Formula: C2-H4-Cl2

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{1,1-}Dichloroethane	75-34-3	100

Toxicological Data on Ingredients: 1,1-Dichloroethane: ORAL (LD50): Acute: 725 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified 2 (Reasonably anticipated.) by NTP. A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. The substance is toxic to kidneys, lungs, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 458°C (856.4°F)

Flash Points: CLOSED CUP: -17°C (1.4°F). OPEN CUP: -6°C (21.2°F).

Flammable Limits: LOWER: 5.6% UPPER: 11.4%

Products of Combustion: These products are carbon oxides (CO, CO2), halogenated compounds.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as oxidizing agents, alkalis.

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 100 STEL: 250 (ppm) from ACGIH (TLV) [1999] TWA: 100 (ppm) from OSHA (PEL) Australia: TWA: 200 (ppm) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Oily liquid.)

Odor: Chloroform like odor (Slight.)

Taste: Not available.

Molecular Weight: 98.96 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 57.3°C (135.1°F)

Melting Point: -96.9°C (-142.4°F)

Critical Temperature: 261.5°C (502.7°F)

Specific Gravity: 1.175 (Water = 1)

Vapor Pressure: 180 mm of Hg (@ 20°C)

Vapor Density: 3.44 (Air = 1)

Volatility: Not available.

Odor Threshold: 120 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties:
Partially dispersed in diethyl ether. See solubility in water, diethyl ether.

Solubility: Partially soluble in diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents, alkalis.

Corrosivity: Corrosive in presence of aluminum.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Will attack some forms of plastic and rubber

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 725 mg/kg [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2 (Reasonably anticipated.) by NTP. A4 (Not classifiable for human or animal.) by ACGIH. DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. The substance is toxic to kidneys, lungs, liver, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification:
CLASS 3: Combustible liquid with a flash point greater than 37.8C (100F). Marine pollutant

Identification: : 1,1-Dichloroethane : UN2362 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65 (no significant risk level): 1,1-Dichloroethane California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: 1,1-Dichloroethane Rhode Island RTK hazardous substances: 1,1-Dichloroethane Pennsylvania RTK: 1,1-Dichloroethane Florida: 1,1-Dichloroethane Minnesota: 1,1-Dichloroethane Massachusetts RTK: 1,1-Dichloroethane New Jersey: 1,1-Dichloroethane New Jersey spill list: 1,1-Dichloroethane TSCA 8(b) inventory: 1,1-Dichloroethane TSCA 8(a) PAIR: 1,1-Dichloroethane TSCA 8(d) H and S data reporting: 1,1-Dichloroethane: June 1999 TSCA 12(b) one time export: 1,1-Dichloroethane SARA 313 toxic chemical notification and release reporting: 1,1-Dichloroethane: 1% CERCLA: Hazardous substances.: 1,1-Dichloroethane: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R22- Harmful if swallowed. R37/38- Irritating to respiratory system and skin. R41- Risk of serious damage to eyes. R52- Harmful to aquatic organisms.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

BOC GASES

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: CARBON DIOXIDE, GAS

1. Chemical Product and Company Identification

BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: CARBON DIOXIDE, GAS
CHEMICAL NAME: Carbon Dioxide
COMMON NAMES/SYNONYMS: Carbonic Anhydride
TDG (Canada) CLASSIFICATION: 2.2
WHMIS CLASSIFICATION: A

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA[1]	TLV-ACGIH[2]	LD_{50} or LC_{50} Route/Species
Carbon Dioxide FORMULA: CO_2 CAS: 124-38-9 RTECS #: FF6400000	99.8 TO 99.999	5000 ppm TWA	5000 ppm TWA 30,000 ppm STEL	Not Available

[1] As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

[2] As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

3. Hazards Identification

EMERGENCY OVERVIEW

Oxygen levels below 19.5% may cause asphyxia. Carbon dioxide exposure can cause nausea and respiratory problems. High concentrations may cause vasodilation leading to circulatory collapse.

ROUTE OF ENTRY:

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
Yes	No	Yes	Yes	Yes

HEALTH EFFECTS:

Exposure Limits	Irritant	Sensitization
Yes	No	No
Teratogen	Reproductive Hazard	Mutagen
No	No	No
Synergistic Effects None reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:
No adverse effects anticipated.

SKIN EFFECTS:
No adverse effects anticipated.

INGESTION EFFECTS:
No adverse effects anticipated.

INHALATION EFFECTS:
Carbon dioxide is the most powerful cerebral vasodilator known. Inhaling large concentrations causes rapid circulatory insufficiency leading to coma and death. Asphyxiation is likely to occur before the effects of carbon dioxide overexposure. Chronic, harmful effects are not known from repeated inhalation of low concentrations. Low concentrations of carbon dioxide cause increased respiration and headache.

Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

NFPA HAZARD CODES

Health: 1
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 1
Flammability: 0
Reactivity: 0

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

4. First Aid Measures

EYES:
Never introduce oil or ointment into the eyes without medical advice! If pain is present, refer the victim to an ophthalmologist for further treatment and follow up.

SKIN:
No adverse effects anticipated.

INGESTION:
Not anticipated.

INHALATION:
PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO CARBON DIOXIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. Fire Fighting Measures

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:
None. Nonflammable

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical Classification:
Non-Hazardous

Dry carbon dioxide can be handled in most common structural materials. Moist carbon dioxide is generally corrosive by its formation of carbonic acid. For applications with moist Carbon Dioxide, 316, 309 and 310 stainless steels may be used as well as Hastelloy ® A, B, & C, and Monel ®. Ferrous Nickel alloys are slightly susceptible to corrosion. At normal temperatures carbon dioxide is compatible with most plastics and elastomers.

Use only in well-ventilated areas. Carbon dioxide vapor is heavier than air and will accumulate in low areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the system.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

For additional storage recommendations, consult Compressed Gas Association's Pamphlet P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

Maximum use for potable water 100 mg/l.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS[1]:

INGREDIENT	% VOLUME	PEL-OSHA[2]	TLV-ACGIH[3]	LD_{50} or LC_{50} Route/Species
Carbon Dioxide FORMULA: CO_2 CAS: 124-38-9 RTECS #: FF6400000	99.8 TO 99.999	5000 ppm TWA	5000 ppm TWA 30,000 ppm STEL	Not Available

[1] Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.
[2] As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)
[3] As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

IDLH (Carbon Dioxide): 50,000 ppm

ENGINEERING CONTROLS:
Use local exhaust to prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 19.5% and the carbon dioxide concentration below the exposure limit.

EYE/FACE PROTECTION:
Safety goggles or glasses as appropriate for the job.

SKIN PROTECTION:
Protective gloves of any material appropriate for the job.

RESPIRATORY PROTECTION:

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

OTHER/GENERAL PROTECTION:
Safety shoes.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70 ^{o}F	: 856	psia
Vapor density at 70 ^{o}F, 1 atm (Air = 1)	: 1.53	
Evaporation point	: Not Available	
Boiling point (CO2 Sublimes)	: -109.3	^{o}F
	: -78.5	^{o}C
Freezing point	: -69.8	^{o}F
	: -56.6	^{o}C
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H20)	: Very soluble	
Odor threshold	: Not Applicable	
Odor and appearance	: A colorless, odorless gas.	

10. Stability and Reactivity

STABILITY:
Stable

INCOMPATIBLE MATERIALS:
Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon monoxide and oxygen when heated above 3092 ^{o}F (1700^{o}C). Carbonic acid is formed in the presence of moisture.

HAZARDOUS POLYMERIZATION:
Will not occur.

11. Toxicological Information

REPRODUCTIVE:
Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

Exposure of female rats to 60,000 ppm carbon dioxide for 24 hours has produced toxic effects to the embryo and fetus in pregnant rats. Toxic effects to the reproductive system have been observed in other mammalian species at similar concentrations.

OTHER:

Carbon dioxide is the most powerful cerebral vasodilator known. Inhaling large concentrations causes rapid circulatory insufficiency leading to coma and death. Chronic, harmful effects are not known from repeated inhalation of low (3 to 5 molar %) concentrations.

12. Ecological Information

No data given.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Carbon Dioxide	Carbon Dioxide
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN 1013	UN 1013
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III HAZARD CLASSES:
Acute Health Hazard
Sudden Release of Pressure Hazard

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

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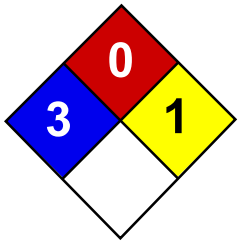

Material Safety Data Sheet
Hydrochloric acid MSDS

Section 1: Chemical Product and Company Identification

Product Name: Hydrochloric acid

Catalog Codes: SLH1462, SLH3154

CAS#: Mixture.

RTECS: MW4025000

TSCA: TSCA 8(b) inventory: Hydrochloric acid

CI#: Not applicable.

Synonym: Hydrochloric Acid; Muriatic Acid

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Hydrogen chloride	7647-01-0	20-38
Water	7732-18-5	62-80

Toxicological Data on Ingredients: Hydrogen chloride: GAS (LC50): Acute: 4701 ppm 0.5 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, . Slightly hazardous in case of inhalation (lung sensitizer). Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrochloric acid]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth. Repeated or prolonged exposure to the substance can produce target

organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: of metals

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Non combustible. Calcium carbide reacts with hydrogen chloride gas with incandescence. Uranium phosphide reacts with hydrochloric acid to release spontaneously flammable phosphine. Rubidium acetylene carbides burns with slightly warm hydrochloric acid. Lithium silicide in contact with hydrogen chloride becomes incandescent. When dilute hydrochloric acid is used, gas spontaneously flammable in air is evolved. Magnesium boride treated with concentrated hydrochloric acid produces spontaneously flammble gas. Cesium acetylene carbide burns hydrogen chloride gas. Cesium carbide ignites in contact with hydrochloric acid unless acid is dilute. Reacts with most metals to produce flammable Hydrodgen gas.

Special Remarks on Explosion Hazards:

Hydrogen chloride in contact with the following can cause an explosion, ignition on contact, or other violent/vigorous reaction: Acetic anhydride AgClO + CCl4 Alcohols + hydrogen cyanide, Aluminum Aluminum-titanium alloys (with HCl vapor), 2-Amino ethanol, Ammonium hydroxide, Calcium carbide Ca3P2 Chlorine + dinitroanilines (evolves gas), Chlorosulfonic acid Cesium carbide Cesium acetylene carbide, 1,1-Difluoroethylene Ethylene diamine Ethylene imine, Fluorine, HClO4 Hexalithium disilicide H2SO4 Metal acetylides or carbides, Magnesium boride, Mercuric sulfate, Oleum, Potassium permanganate, beta-Propiolactone Propylene oxide Rubidium carbide, Rubidium, acetylene carbide Sodium (with aqueous HCl), Sodium hydroxide Sodium tetraselenium, Sulfonic acid, Tetraselenium tetranitride, U3P4 , Vinyl acetate. Silver perchlorate with carbon tetrachloride in the presence of hydrochloric acid produces trichloromethyl perchlorate which detonates at 40 deg. C.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill:
Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
CEIL: 5 (ppm) from OSHA (PEL) [United States] CEIL: 7 (mg/m3) from OSHA (PEL) [United States] CEIL: 5 from NIOSH CEIL: 7 (mg/m3) from NIOSH TWA: 1 STEL: 5 (ppm) [United Kingdom (UK)] TWA: 2 STEL: 8 (mg/m3) [United Kingdom (UK)]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Pungent. Irritating (Strong.)

Taste: Not available.

Molecular Weight: Not applicable.

Color: Colorless to light yellow.

pH (1% soln/water): Acidic.

Boiling Point:
108.58 C @ 760 mm Hg (for 20.22% HCl in water) 83 C @ 760 mm Hg (for 31% HCl in water) 50.5 C (for 37% HCl in water)

Melting Point:
-62.25°C (-80°F) (20.69% HCl in water) -46.2 C (31.24% HCl in water) -25.4 C (39.17% HCl in water)

Critical Temperature: Not available.

Specific Gravity:
1.1- 1.19 (Water = 1) 1.10 (20%and 22% HCl solutions) 1.12 (24% HCl solution) 1.15 (29.57% HCl solution) 1.16 (32% HCl solution) 1.19 (37% and 38%HCl solutions)

Vapor Pressure: 16 kPa (@ 20°C) average

Vapor Density: 1.267 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.25 to 10 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether.

Solubility: Soluble in cold water, hot water, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, water

Incompatibility with various substances:
Highly reactive with metals. Reactive with oxidizing agents, organic materials, alkalis, water.

Corrosivity:
Extremely corrosive in presence of aluminum, of copper, of stainless steel(304), of stainless steel(316). Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Reacts with water especially when water is added to the product. Absorption of gaseous hydrogen chloride on mercuric sulfate becomes violent @ 125 deg. C. Sodium reacts very violently with gaseous hydrogen chloride. Calcium phosphide and hydrochloric acid undergo very energetic reaction. It reacts with oxidizers releasing chlorine gas. Incompatible with, alkali metals, carbides, borides, metal oxides, vinyl acetate, acetylides, sulphides, phosphides, cyanides, carbonates. Reacts with most metals to produce flammable Hydrogen gas. Reacts violently (moderate reaction with heat of evolution) with water especially when water is added to the product. Isolate hydrogen chloride from heat, direct sunlight, alkalies (reacts vigorously), organic materials, and oxidizers (especially nitric acid and chlorates), amines, metals, copper and alloys (e.g. brass), hydroxides, zinc (galvanized materials), lithium silicide (incandescence), sulfuric acid(increase in temperature and pressure) Hydrogen chloride gas is emitted when this product is in contact with sulfuric acid. Adsorption of Hydrochloric Acid onto silicon dioxide results in exothmeric reaction. Hydrogen chloride causes aldehydes and epoxides to violently polymerize. Hydrogen chloride or Hydrochloric Acid in contact with the folloiwng can cause explosion or ignition on contact or

Special Remarks on Corrosivity:

Highly corrosive. Incompatible with copper and copper alloys. It attacks nearly all metals (mercury, gold, platinium, tantalum, silver, and certain alloys are exceptions). It is one of the most corrosive of the nonoxidizing acids in contact with copper alloys. No corrosivity data on zinc, steel. Severe Corrosive effect on brass and bronze

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
Acute oral toxicity (LD50): 900 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 1108 ppm, 1 hours [Mouse]. Acute toxicity of the vapor (LC50): 3124 ppm, 1 hours [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Hydrochloric acid]. May cause damage to the following organs: kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, Circulatory System, teeth.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, . Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Doses (LDL/LCL) LDL [Man] -Route: Oral; 2857 ug/kg LCL [Human] - Route: Inhalation; Dose: 1300 ppm/30M LCL [Rabbit] - Route: Inhalation; Dose: 4413 ppm/30M

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (fetoxicity). May affect genetic material.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Corrosive. Causes severe skin irritation and burns. Eyes: Corrosive. Causes severe eye irritation/conjuntivitis, burns, corneal necrosis. Inhalation: May be fatal if inhaled. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation of hydrochloric acid fumes produces nose, throat, and larryngeal burning, and irritation, pain and inflammation, coughing, sneezing, choking sensation, hoarseness, laryngeal spasms, upper respiratory tract edema, chest pains, as well has headache, and palpitations. Inhalation of high concentrations can result in corrosive burns, necrosis of bronchial epithelium, constriction of the larynx and bronchi, nasospetal perforation, glottal closure, occur, particularly if exposure is prolonged. May affect the liver. Ingestion: May be fatal if swallowed. Causes irritation and burning, ulceration, or perforation of the gastrointestinal tract and resultant peritonitis, gastric hemorrhage and infection. Can also cause nausea, vomitting (with "coffee ground" emesis), diarrhea, thirst, difficulty swallowing, salivation, chills, fever, uneasiness, shock, strictures and stenosis (esophogeal, gastric, pyloric). May affect behavior (excitement), the cardiovascular system (weak rapid pulse, tachycardia), respiration (shallow respiration), and urinary system (kidneys- renal failure, nephritis). Acute exposure via inhalation or ingestion can also cause erosion of tooth enamel. Chronic Potential Health Effects: dyspnea, bronchitis. Chemical pneumonitis and pulmonary edema can also

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Hydrochloric acid, solution UNNA: 1789 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Hydrochloric acid Illinois toxic substances disclosure to employee act: Hydrochloric acid Illinois chemical safety act: Hydrochloric acid New York release reporting list: Hydrochloric acid Rhode Island RTK hazardous substances: Hydrochloric acid Pennsylvania RTK: Hydrochloric acid Minnesota: Hydrochloric acid Massachusetts RTK: Hydrochloric acid Massachusetts spill list: Hydrochloric acid New Jersey: Hydrochloric acid New Jersey spill list: Hydrochloric acid Louisiana RTK reporting list: Hydrochloric acid Louisiana spill reporting: Hydrochloric acid California Director's List of Hazardous Substances: Hydrochloric acid TSCA 8(b) inventory: Hydrochloric acid TSCA 4(a) proposed test rules: Hydrochloric acid SARA 302/304/311/312 extremely hazardous substances: Hydrochloric acid SARA 313 toxic chemical notification and release reporting: Hydrochloric acid CERCLA: Hazardous substances.: Hydrochloric acid: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):
R34- Causes burns. R37- Irritating to respiratory system. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du règlement sur le transport des marchandises dangeureuses au canada. Centre de conformité internatinal Ltée. 1986.

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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BOC GASES

Safety Data Sheet

Product : **Isobutene (Isobutylene)**

MSDS Nr : 302-00-0028BOC(U) Version : 1.02

Date : 03/05/2001

Replaces version dated : 29/07/1994

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name	Isobutene (Isobutylene)
Chemical formula	(CH3)2C=CH2
Company identification	see heading and/or footer
Emergency phone numbers	see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation	Substance.
Components/Impurities	Contains no other components or impurities which will influence the classification of the product.
CAS Nr	00115-11-7
EC Nr (from EINECS)	204-066-3

3 HAZARDS IDENTIFICATION

Hazards identification	Liquefied gas
	Extremely flammable

4 FIRST AID MEASURES

Inhalation	In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
	In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
	Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact	In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
	Immediately flush eyes thoroughly with water for at least 15 minutes.
	Obtain medical assistance
Ingestion	Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards	Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products	Incomplete combustion may form carbon monoxide.
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product.
	Move away from the container and cool with water from a protected position.

	Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Special protective equipment for fire fighters	In confined space use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Clean up methods	Ventilate area.

7 HANDLING AND STORAGE

Handling and storage	Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Segregate from oxidant gases and other oxidants in store. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection	Ensure adequate ventilation. Do not smoke while handling product.

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	56
Melting point	-140.4 °C
Boiling point	-6.9 °C

Critical temperature	145 °C
Relative density, gas	1.9 (air=1)
Relative density, liquid	0.63 (water=1)
Vapour Pressure 20°C	2.6 bar
Solubility mg/l water	388 mg/l
Appearance/Colour	Colourless gas
Odour	Sweetish
	Poor warning properties at low concentrations.
Autoignition temperature	465 °C
Flammability range	1.6-10 vol% in air.
Other data	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity	Can form explosive mixture with air.
	May react violently with oxidants.

11 TOXICOLOGICAL INFORMATION

General	No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General	No known ecological damage caused by this product.

13 DISPOSAL CONSIDERATIONS

General	Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.
	Do not discharge into any place where its accumulation could be dangerous.
	Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

UN Nr	1055
Class	2.1
ADR/RID Classification code	2F
ADR/RID Hazard Nr	23
Labelling ADR	Label 2.1: flammable gas

Other transport information	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured and: - cylinder valve is closed and not leaking - valve outlet cap nut or plug (where provided) is correctly fitted - valve protection device (where provided) is correctly fitted - there is adequate ventilation. - compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	Not included in Annex I.
EC Classification	F+;R12
-Symbols	F+: Extremely flammable
Labelling of cylinders	
-Symbols	Label 2.1: flammable gas
-Risk phrases	R12 Extremely flammable.
-Safety phrases	S9 Keep container in well ventilated place. S16 Keep away from ignition sources - No smoking. S33 Take precautionary measures against static discharges.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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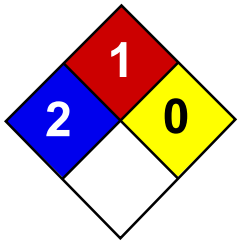
Number of pages :4



Material Safety Data Sheet
Trichloroethylene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Trichloroethylene

Catalog Codes: SLT3310, SLT2590

CAS#: 79-01-6

RTECS: KX4560000

TSCA: TSCA 8(b) inventory: Trichloroethylene

CI#: Not available.

Synonym:

Chemical Formula: C2HCl3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Trichloroethylene	79-01-6	100

Toxicological Data on Ingredients: Trichloroethylene: ORAL (LD50): Acute: 5650 mg/kg [Rat]. 2402 mg/kg [Mouse]. DERMAL (LD50): Acute: 20001 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA. Classified A5 (Not suspected for human.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to kidneys, the nervous system, liver, heart, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 420°C (788°F)

Flash Points: Not available.

Flammable Limits: LOWER: 8% UPPER: 10.5%

Products of Combustion: These products are carbon oxides (CO, CO2), halogenated compounds.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/

spray. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Carcinogenic, teratogenic or mutagenic materials should be stored in a separate locked safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 50 STEL: 200 (ppm) from ACGIH (TLV) TWA: 269 STEL: 1070 (mg/m3) from ACGIH Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 131.39 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 86.7°C (188.1°F)

Melting Point: -87.1°C (-124.8°F)

Critical Temperature: Not available.

Specific Gravity: 1.4649 (Water = 1)

Vapor Pressure: 58 mm of Hg (@ 20°C)

Vapor Density: 4.53 (Air = 1)

Volatility: Not available.

Odor Threshold: 20 ppm

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, acetone.

Solubility:
Easily soluble in methanol, diethyl ether, acetone. Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity:
Extremely corrosive in presence of aluminum. Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
Acute oral toxicity (LD50): 2402 mg/kg [Mouse]. Acute dermal toxicity (LD50): 20001 mg/kg [Rabbit].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified + (PROVEN) by OSHA. Classified A5 (Not suspected for human.) by ACGIH. The substance is toxic to kidneys, the nervous system, liver, heart, upper respiratory tract.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Passes through the placental barrier in human. Detected in maternal milk in human.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Trichloroethylene : UN1710 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Trichloroethylene California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Trichloroethylene Pennsylvania RTK: Trichloroethylene Florida: Trichloroethylene Minnesota: Trichloroethylene Massachusetts RTK: Trichloroethylene New Jersey: Trichloroethylene TSCA 8(b) inventory: Trichloroethylene CERCLA: Hazardous substances.: Trichloroethylene

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R36/38- Irritating to eyes and skin. R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 11/01/2010 12:00 PM

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ATTACHMENT 5

BOART LONGYEAR JOB SAFETY ANALYSIS

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SONIC

JOB SAFETY ANALYSIS

BOART LONGYEAR COMPANY

ENVIRONMENTAL & INFRASTRUCTURE

Revised (6/21/2011)

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SONIC JSA INDEX

JSA HAZARD CODES

SB	Struck By
SA	Struck Against
CB	Contacted By
CW	Contact With
CO	Caught On
CI	Caught In
CBT	Caught Between
E	Exposure
FS	Fall, Same Level
FB	Fall Below
OE	Over Exertion

Boart Longyear Job Safety Analysis

Job / Operation:	Access / Egress – Equipment	Date:	08/16/05	JSA No.	S-001
Persons(s) Involved:	All Crews	Analysis by:	Daniel Casey		
Type of Equipment:	All Drills, Equipment, Shop & Yard	Approved by:			

Sequence of Basic Job Steps	Potential Accidents & Hazards	Recommended Safe Procedure
Climbing onto and off of equipment of all types	SA, CB, CW, FS, FB, OE Persons can slip or fall off of or on to equipment during access or egress of equipment or strain themselves if attempted in an area not intended specifically for access/ egress.	Persons should always use access devices provided, such as ladders, foot holds, railings, grab handles. Never attempt access or egress in an area not intended for access/egress. Check surfaces for oil, snow or other slip hazards and clean where needed. Never jump on to or off of any equipment. Never try to access or egress carrying a load of any kind. Maintain a three point contact at all times.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught In (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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Boart Longyear Job Safety Analysis Form

Job or Operation: 3.5" Rod Removal (Pulling Rods) Date: September 1, 2000 New : X JSA#: S-002

Equipment Type: Sonic Rig Operator: Driller / Assistant Revised: 6/12/2007 BLA# 1-0001

Boart Longyear Division: EDD Reviewed By: Dan Casey Analysis: KL

Notes: Use proper PPE and good attention by crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break rod joint in wrenches	CW/CO/CB Rotation Hazard, wrench pinch or pin hazard	Stay clear of wrench, wear proper PPE, Stay clear of rotating rod. After top rod is unscrewed from lower rod stop rotation before closing top whench to break rod loose from head. This helps to prevent burring. If burring occures be sure to remove burrs.
Raise Head And Rod (No Rotation)	CBT/SB; Pin or pinch between head and tower, sprocket and chains	Stay clear of travel and head. Stay clear of sprockets and chains
Tilt Head Out (No Rotation)	SB:Rod can strike people on deck	Stay clear of swing out travel. Stay out of yellow zone
Assistant grips rod to remove while driller starts low torque/speed rotation	CO/OE/FS: Rotation hazard, lifting hazard, slip-trip-fall hazard, burrs may be present	Use proper PPE, use correct lifting, keep deck clear, try and with good traction. Keep hands out of rod ends. Use good communication and eye contact during task.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 3.5" Rod Removal (Pulling Rods) Date: September 1, 2000 New : X JSA#: S-002

Tilt Head In (no rotation)	SB/CBT Crew can be struck by head tilting in, or pinned between head and mast.	Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Stay clear of sprockets and chains.

Boart Longyear Job Safety Analysis Form

Job or Operation: 5.5" Casing Removal (Pulling Casing) Date: September 1, 2000 New : X JSA#: S-003

Equipment Type: Sonic Rig Operator: Driller / Assistant Revised: X BLA#

Boart Longyear Division: EDD Reviewed By: SP/ZM/DM Analysis: KL

Notes: Use proper PPE and good attention by crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break Casing joint in wrenches	CW/CO/CB Rotation Hazard, wrench pinch or pin hazard	Stay clear of wrench, wear proper PPE, Stay clear of rotating Casing
Raise Head And Casing (No Rotation)	CBT/SB; Pin or pinch between head and tower, sprocket and chains	Stay clear of travel and head. Stay clear of sprockets and chains
Tilt Head Out (No Rotation)	SB:Casing can strike people on deck	Stay clear of swing out travel. Stay out of yellow zone
Assistant grips Casing to remove while driller starts low torque/speed rotation	CO/OE/FS: Rotation hazard, lifting hazard, slip-trip-fall hazard, burrs may be present	Use propper PPE, use correct lifting, keep deck clear, try and with good traction. Keep hands out of Casing ends. Use good communication and eye contact during task.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 5.5" Casing Removal (Pulling Casing) Date: September 1, 2000 New : X JSA#: S-003

Tilt Head In (no rotation)	SB/CBT Crew can be struck by head tilting in, or pinned between head and mast.	Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Stay clear of sprockets and chains.
Lower Head and casing into wrenches	CBT/SB; Crew can be pinned or struck by head movement and sprocket chain movement	Stay clear of all movement areas. Driller should not lower until areas are all clear.
Close wrench jaws to grip rod for tightening	CBT; Pinch points	Driller must be sure area is clear before starting wrench operation.

Boart Longyear Job Safety Analysis Form

Job or Operation: 5.5" Casing Deuce Removal | Date: September 1, 2000 | New : X | JSA#: S004

Equipment Type: Sonic Rig | Operator: Driller / Assistant | Revised: X | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Use proper PPE and good attention by crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break Casing joint in wrenches	CW/CO/CB Rotation Hazard, wrench pinch or pin hazard	Stay clear of wrench, wear proper PPE, Stay clear of rotating Deuce
Raise Head And Casing (No Rotation)	CBT/SB; Pin or pinch between head and tower, sprocket and chains	Stay clear of travel and head. Stay clear of sprockets and chains
Tilt Head Out (No Rotation)	SB:Casing can strike people on deck	Stay clear of swing out travel. Stay out of yellow zone
Assistant grips Deuce to remove while driller starts low torque/speed rotation	CO/OE/FS: Rotation hazard, lifting hazard, slip-trip-fall hazard, burrs may be present	Use proper PPE, use correct lifting, keep deck clear, try and with good traction. Keep hands out of Casing ends. Use good communication and eye contact during task.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 5.5" Casing Deuce Removal Date: September 1, 2000 New : X JSA#: S004

Tilt Head In (no rotation)	SB/CBT Crew can be struck by head tilting in, or pinned between head and mast.	Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Stay clear of sprockets and chains.
Lower Head and casing into wrenches	CBT/SB; Crew can be pinned or struck by head movement and sprocket chain movement	Stay clear of all movement areas. Driller should not lower until areas are all clear.
Close wrench jaws to grip Deuce for tightening	CBT; Pinch points	Driller must be sure area is clear before starting wrench operation.

Boart Longyear Job Safety Analysis Form

Job or Operation: 3.5" Rod Addition | Date: September 1, 2000 | New : X | JSA#: S-005

Equipment Type: Sonic Rigs | Operator: Driller/Assistant | Revised: 6/12/2007 | BLA#

Boart Longyear Division: EDD | Reviewed By: Dan Casey | Analysis: KL

Notes: Use proper PPE and good attention by all crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Move Sonic Head Up - No Rotation	CBT/SB Individuals can be caught between head and tower, chain and sprocket or struck by head movement	Stay in Safety Zones. Driller must be sure area is clear before moving head. Use NO rotation during movement
Tilt Head Out	SB/CW Workers can be struck by head, rod, spindle or subs when unit is swinging out	Stay out of yellow zone. Driller must watch that area is all clear.
Assistant Picks up rod and moves it to head spindle to install and shoulder up rod	OE/FS/SB Assitant must be careful of tripping, slipping, dropping rod and the weight of the rod as a lifting hazard	Use prper PPE including gloves. Keep deck clear, clean and with good traction. Use proper lifting techniques.
Driller Starts Rotation	CO/CW Rotation hazard. Burrs possible, Careful not to loose grip and drop rod	Driller stays at controls, uses slow rotation and rod loading mode. Assistant uses proper PPE including gloves. Keep hands out of inside of rod. Rods should be examined regularly and burrs removed as needed to prevent injury such as getting clothing caught or hands cut.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 3.5" Rod Addition Date: September 1, 2000 New : X JSA#: S-005

Rotation is stopped, Head Raised Up, Tilted In	CB/SB/CBT; Head or rod can strike assistant. Assistant can be caught between head, rod and tower.	Stay out of yellow zone. Driller must watch that area is all clear.
Head & Rod are lowered into wrenches for tigtening and connection	CBT/SB Individuals can be caught between head and tower, chain and sproket or struck by head movement	Stay clear of travel. Keep hands away from chains and sprokets or cables

Boart Longyear Job Safety Analysis Form

Job or Operation: 5.5" Casing Addition | Date: September 1, 2000 | New : X | JSA#: S-006

Equipment Type: Sonic Rigs | Operator: Driller/Assistant | Revised: X | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Use proper PPE and good attention by all crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Move Sonic Head Up - No Rotation	CBT/SB Individuals can be caught between head and tower, chain and sprocket or struck by head movement	Stay in Safety Zones. Driller must be sure area is clear before moving head. Use NO rotation during movement
Tilt Head Out	SB/CW Workers can be struck by head, Casing, spindle or subs when unit is swinging out	Stay out of yellow zone. Driller must watch that area is all clear.
Assistant Picks up Casing and moves it to head spindle to install and shoulder up Casing	OE/FS/SB Assistant must be careful of tripping, slipping, dropping rod and the weight of the rod as a lifting hazard	Use proper PPE including gloves. Keep deck clear, clean and with good traction. Use proper lifting techniques.
Driller Starts rotation	CO/CW Rotation hazard. Burrs possible	Driller stays at controls, uses slow rotation and rod loading mode. Assistant uses proper PPE including gloves. Keep hands out of inside of Casing.Careful not to loose grip.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 5.5" Casing Addition Date: September 1, 2000 New : X JSA#: S-006

Rotation is stopped, Head Raised Up, Tilted In	CB/SB/CBT; Head or Casing can strike assistant. Assistant can be caught between head, rod and tower.	Stay out of yellow zone. Driller must watch that area is all clear.
Head & Casing are lowered into wrenches for tightening and connection	CBT/SB Individuals can be caught between head and tower, chain and sprocket or struck by head movement	Stay clear of travel. Keep hands away from chains and sprockets or cables

Boart Longyear Job Safety Analysis Form

Job or Operation: 2' (deuce) Addition | Date: September 1, 2000 | New : X | JSA#: S-007

Equipment Type: Sonic Rigs | Operator: Driller/Assistant | Revised: X | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Use proper PPE and good attention by all crew. Use verbal and hand signals as well as eye contact

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Move Sonic Head Up - No Rotation	CBT/SB Individuals can be caught between head and tower, chain and sprocket or struck by head movement	Stay in Safety Zones. Driller must be sure area is clear before moving head. Use NO rotation during movement
Tilt Head Out	SB/CW Workers can be struck by head, Casing, spindle, deuce or subs when unit is swinging out	Stay out of yellow zone. Driller must watch that area is all clear.
Assistant Picks up Casing and moves it to head spindle to install and shoulder up Casing	OE/FS/SB Assitant must be careful of tripping, slipping, dropping Deuce and the weight of the Deuce as a lifting hazard	Use prper PPE including gloves. Keep deck clear, clean and with good traction. Use proper lifting techniques.
Driller Starts Rotation	CO/CW Rotation hazard. Burrs possible	Driller stays at controls, uses slow rotation and Rod/Casing loading mode. Assistant uses proper PPE including gloves. Keep hands out of inside of Casing / Rod. Be careful not to loose grip.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: 2' (deuce) Addition Date: September 1, 2000 New : X JSA#: S-007

Rotation is stopped, Head Raised Up, Tilted In	CB/SB/CBT; Head or Deuce can strike assistant. Assistant can be caught between head, casing / rod and tower.	Stay out of yellow zone. Driller must watch that area is all clear.
Head & Deuce are lowered into wrenches for tigtening and connection	CBT/SB Individuals can be caught between head and tower, chain and sprocket or struck by head movement	Stay clear of travel. Keep hands away from chains and sprockets or cables

Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Core Extraction | Date: June 1, 1998 | New : X | JSA#: S-008

Equipment Type: Sonic Rigs | Operator: Driller / Assistant | Revised: Aug-99 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: We have had injuries during this operation. Mostly contact with fingers and hammers.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break Bit / Core Barrel joint. Place bit in upper wrench and close lower wrench to avoid dropping bit down boring.	CBT/CB: Pin or pinch in wrench area. Bit may be hot.	Check temperature of core barrel with sample bag. If bag melts cool core barrel before proceeding. Stay clear of wrench area. Driller be sure area is clear before using wrenches.
Remove core bit	CO/E/CW; Possible burrs on bit. Contamination may be present	Use proper PPE including gloves. Use tools if needed to remove bit. Do not put hands inside bit
Move head and core barrel up from wrenches	CBT/SB/CB; Possible to pin or be hit by moving head or be caught in chain and sprockets(if equipped with) or cables.	Stay clear of head movement. Driller must be sure area is all clear and use verbal or hand signals before starting operation.
Tilt Head & Core Barrel back.	SB/CW/CB; Core barrel can strike anyone standing in yellow zone	Stay clear of swinging core barrel. Driller must be sure that area is clear. Stay out of yellow zone. Driller should use verbal or hand signals before swinging out barrel.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Assistant prepares plastic bag to be used to collect sample	SB/CW: Assistant could be cut with knife while preparing bags.	Do not hurry and use safety knife or scissors. Do not use open blade knife!
Assistant slides plastic bag on to barrel for extraction of sample.	CW/CO/E: Burrs on barrel possible, contact with barrel heat or contamination. Splash possible	Wear proper PPE. Use caution when contacting barrel with hands.
Driller lowers barrel to proper height for extraction & engages vibration. May pound on core barrel with hammer to loosen sample. Sample retrieved in bag	E/CBT/OE/SB/CW; Assistant may be struck by driller pounding on barrel. Vibration is a hazard. Lifting and holding heavy sample bag in place. There is a splash and contamination hazard.	Driller should lower core barrel to the deck. Assistant should hold top corner of bag only (never have hands on the core barrel) drill deck should support the sample. Use proper tool to pound on barrel (i.e. 3 pound hammer). Never be in contact with core barrel during pounding or vibration. Use proper PPE.
As sample is gathered, driller raises core barrel in unison with vibration as sample is extracted.	CW/SB/OE: Assistant could sustain back injury tying to brace sample if barrel is raised faster than sample is coming out of barrel. Weight of sample could cause bag to become detached from barrel.	Driller and assistant must maintain good communication while sample is gathered. Assistant must maintain control of sample bag.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**
Bag is removed and assistant gives bag to client or places it on deck.	OE/E/FS/FB: Lifting hazard, contamination exposure possible, trip, slip, fall possible	Use proper lifting, proper PPE, keep deck clear and dry or sand for traction. Be sure rails are in place.

Job or Operation: Sonic Core Extraction Date: June 1, 1998 New : X JSA#: S-008

Place bit in upper wrenches to re-Attach Core Bit	CW/CO: Hand, finger injury, burrs on bit or barrel.	Driller ensures lower wrenches are still closed. Use proper tools if needed. Use proper PPE including gloves, keep hands out of bit and barrel.
Move head up, in and down into wrenches for tightening of bit.	SB/CBT/CB: Can be struck by movement and swinging of the core barrel or head. Can be caught between the head, barrel and rig or chains and sprockets (if equipped)	Driller must be sure area is clear and use verbal or hand signals to warn crew of movement. No one in yellow area. Everyone should be clear of chains, cables and sprockets if rig is equipped.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Generator Use | Date: February 21, 2002 | New : X | JSA#: S-009

Equipment Type: Gas or diesel Powered generator | Operator: ld, Shop, Yard employe | Revised: | BLA#

Boart Longyear Division: Environmental Drilling Division | Reviewed By: KL | Analysis: KL

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Setup Generator	E, CI, OE: Lifting hazard.	Use proper lifting techniques. Units must be handled by two people or mechanical means such as lift gate, crane or cart. Inspect the generator including oil & water levels before operation. Be sure to use grounding rod or cable before using unit. Unit may be set into leak proof tub in sensitive areas.
Start & Run Generator	SB, CB, SA: Electric shock hazard, exhaust and burn hazards. Noise hazard.	Wear proper PPE. Use GFI in line if the generator is not equipped with GFI outlets. Keep unit away from flammables and combustibles.
Store and secure unit	E, CI, OE: Lifting hazard.	Use proper lifting techniques. Units must be handled by two people or mechanical means such as lift gate, crane or cart. Inspect the generator including oil & water levels before operation. Be sure to use grounding rod or cable before using unit. Secure before moving truck or equipment.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Pit Pipe Installation | Date: November 1, 1999 | New : X | JSA#: S-010

Equipment Type: Sonic Drills | Operator: Driller-Assistant | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Pit pipes are sometimes used in lieu of Cow Tanks. There is a JSA for each operation.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Unload Pit Pipe	SB/OE/CB/CBTFS/FB: The pipe is heavy and is a lifting hazard. It has sharp edges and injury to hands or the possibility of being caught between the pipe and rig or water truck is possible.	The pipe should be handled by two people. Use proper lifting techniques. Do not throw pipe off truck. Wear proper PPE including gloves.
Position Pit Pipe Under Rig	OE/CW/CBT: The task of positioning the pipe includes hazards such as lifting, bumping, being struck by the pipe and being caught between the pipe and other parts of the rig or ground.	Use caution when positioning the pipe. Be careful not to be caught between the pipe and other parts of the rig or ground. Crew should use good communication during this process. Wear proper PPE including gloves.
Pushing & Sealing Pipe	SB/CB/SA: The hazards include contact with the pipe and other parts of the rig or ground or injury by the tools used to push the pipe into the ground.	Wear proper PPE. When driller operates controls, no one should be touching or be near the pipe when the pipe is pushed into the ground. Bentonite may be used for a seal.Other hand tools may be used to install the pipe into the ground.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Pit Pipe Removal | Date: November 1, 1999 | New : X | JSA#: S-011

Equipment Type: Sonic Drills | Operator: Driller - Assistant | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Used pit pipes may contain contamination

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Pull out pit pipe from boring	CBT/OE/SB/CB: Hazards include over exertion by pulling out pipe, lifting hazard, being caught between the pipe and other parts of the rig. If the pipe is pulled out mechanically by the drill rig feed or chain, this would also be a hazard. The pipe may contain soil or water contamination.	Wear proper PPE including gloves. Stay clear of pipe if it is being pulled out mechanically. Two people should move pipe out of area under rig. Be careful of being caught between pipe and rig or equipment. Rig may be moved rather then crawling under rig to remove the pipe. Use hand tools to dig out the pipe if necessary.
Storage of pipe	CBT/OE/SB/CB: Hazards include a lifting hazard, being caught between the pipe and other parts of the rig. Being struck by or contact with sharp areas of the pipe.	Remember to use caution with sharp edges, pinching fingers and getting caught between the pipe and the other areas of the storage area. Use caution in lifting and use a winch line (if available) or more then one person. Be sure to secure the pipe in the storage area.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Split Barrel-Removal | Date: September 1, 2000 | New : X | JSA#: S-012

Equipment Type: Sonic Drill Rig | Operator: Driiler/Assistant(s) | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break all joints of split barrel	CW/CD/CB: Rotation hazard, wrench pin or pinch hazard.	Stay clear of wrench, wear proper PPE including gloves. Stay clear of rotating barrel.
Raise head and split barrel-No Rotation	CBT/SB: Pin or pinch between head and tower, sprocket, chains or cables.	Stay clear of travel and head. Stay clear of sprockets chains or cables.
Tilt head out-No Rotation	SB: Split barrel can strike people on deck.	Stay clear of swing out travel. Stay out of yellow zone.
Assistant grips split barrel to remove while the driller starts low torque/speed rotation	CO/OE/FS: Rotation hazard, lifting hazard, slip-trip-fall hazard, burrs may be present	Use correct lifting, keep deck clear, keep hands out of barrel end. Use good communication and eye contact during task.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Sonic Split Barrel-Removal Date: September 1, 2000 New : X JSA#: S-012

Driller starts rotation	CO/CW: Rotation hazard, burrs possible, careful not to loose grip and drop barrel.	driller stays at the controls. Uses slow rotation. Keep hands out of inside of barrel.
Rotation stopped. Head raised up, tilted in	CB/SB/CBT: Head or barrel can strike assistant. Assistant can be caught between head, barrel and tower.	Stay clear of yellow zone. Driller must watch that area is all clear.
Head and split barrel are lowered into wrenches for tightening and connection	CBT/SB: Individuals can be caught between head and tower, chain, sprocket,cables or struck by head movement.	Stay clear of travel. Keep hands away from chains, sprockets or cables.

Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Core Extraction | Date: June 1, 2003 | New : X | JSA#: S-013

Equipment Type: Mini & Standard Sonic Sonic Drill | Operator: Driller / Assistant | **Revised:** **Feb-05** | BLA#

Boart Longyear Division: EDD | Reviewed By: SJ | Analysis: KL

Notes: Serious injuries including hammers striking hands or fingers have occurred during this operation. Use good communication.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break Bit / Core Barrel joint	CBT/CB: Pin or pinch in wrench area	Stay clear of wrench area. Driller be sure area is clear before using wrenches.
Move head and core barrel up from wrenches	CBT/SB/CB; Possible to be pinned, pinched or hit by moving head or caught in chains, sprockets or cables.	Stay clear of head movement. Driller must be sure area is all clear and use verbal or hand signals before starting operation.
Titl head & core barrel back and lower to waist height for sample extraction.	SB/CW/CB; Core barrel can strike anyone standing in caution zones	Stay clear of of barrel. Driller must be sure that area is clear. Stay out of yellow caution zone. Driller should use verbal or hand signals before moving head and barrel.
Remove core bit	CO/E/CW; Possible burrs on bit. The bit is sharp. Bit may be hot. Contamination may be present.	Use proper PPE including gloves. Use tools if needed to remove bit. Do not put hands inside bit. Do not use vibration during bit removal.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Sonic Core Extraction Date: June 1, 2003 New : X JSA#: S-013

Assistant slides correct length of plastic bag on to barrel for extraction of sample	CW/CO/E: Burrs on barrel possible, contact with barrel heat or contamination. Splash possible	Wear proper PPE including proper gloves such as heavy leather or Ansell Edmont 23-178 Monkey Grip Rubber gloves that protect you from contamination and burrs. Use caution when contacting barrel with hands.
Driller engages vibration and sample extrudes into plastic bag. **If Sample Does Not Come Out Normally, STOP And Determine Steps For Safe Extraction…Refer to JSA CTS1-009A**	E/CBT/OE/SB/CW; While driller is sounding the sample by use of a hammer, the assistant may be struck by driller pounding on barrel or hammer can slip or break and hit someone. Lifting and holding heavy sample bag in place can cause back strain. Bag can slip without proper grip. There is a splash and contamination hazard.	Use proper lifting stance and grip for handling core samples. Wear proper gloves.Never be in contact with barrel during pounding. If the barrel needs to be sounded by pounding on it, use a one piece hammer such as an Estwing. Only the person doing the pounding can have a hand on the barrel. Everyone else needs to be out of the line of fire. Adjust level of barrel to proper height with the deck.
Bag is removed and assistant gives bag to client or places it on deck.	OE/E/FS/FB: Lifting hazard, contamination exposure possible, trip, slip, fall possible	Use proper lifting, do not twist while lifting, Use proper PPE, keep ground area clear and dry or sand for traction.
Re-Attach Core Bit	CW/CO: Hand, finger injury, burrs on bit or barrel. Bit may be warm or hot.	Use proper tools if needed. Use proper PPE including thick leather or rubber gloves, keep hands out of inside of the bit and barrel. Use alternate bit if bit is still hot.
Move head up, back to wrench center and down into wrenches for tightening of bit.	SB/CBT/CB: Can be struck by movement and swinging of the core barrel or head. Can be caught between the head, barrel and rig or wrenches.	Driller must be sure area is clear and use verbal or hand signals to warn crew of movement. No one in caution area. Everyone should be clear of head, barrel and wrenches.

Boart Longyear Job Safety Analysis Form

Job or Operation:	Rod Spinner	Date:	12/21/06	New:	*X*	JSA#:	14
Equipment Type:	Sonic	Employee(s) Observed:	Driller / Assistant	Revised:		BLA#	
BLA Division:	EDD Peoria	Reviewed By:		Analysis Made By:		Risk Level:	
Notes:				Review Due:			

Required PPE: Use Proper PPE at all times to include Gloves.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Assistant positions rod spinner around rod. Driller spins rod with rod spinner.	CB/CI Assistant could get hand pinched in spinner when closed around rod. Burrs on rod could come in contact with hands.	Proper PPE including Gloves. Assistant should use handles on spinner when positioning rod spinner. Driller should assure all hands are free from spinner before clamping down on rod. Remove burs by filling or peening with hammer.
Assistant repositions rod spinner away from open hole after use.	CB/CI Assistant could get hand pinched in spinner. Burrs on rod could come in contact with hands.	Proper PPE including Gloves. Assistant should use handles on spinner when positioning rod spinner. Driller must be aware of assistants position at all times. Remove burs by filing or peening with hammer.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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6/21/2011

Boart Longyear 's "Job Safety Analysis"

Setting

Title of Job/Operation: Fueling | Date: 9/21/00 | Page: 1 of 1 | JSA No.: S-015

Person(s) performing Job: Driller/Driller Assistant | Employee(s) Observed: Mark King

Division: Contract Drilling | Zone: Nevada | Analysis Made By: Mike William

Supervisor: R. MageeP. Langen | Rig(s): All | Analysis Approved By: Roger Magee

Sequence of Basic Job Steps	Potential Accidents or Hazards of Each Step	Recommended Safe Job Procedures at Each Step
1. Wearing PPE	SB,E,CW	Always wear PPE, gloves, safety glasses
2. Chock your vehicle	Vehicle could roll, FB,CW,SB	Always chock vehicle, visual check for wheel chocks, don't smoke.
3. Start vehicle or leave running if fuel requires power on, Always ask driller or rig supervisor	If vehicle is running. SB,E, if batteries get discharged hazard of explosion jumping batteries. E,SB	Always make sure supervisor is advised of fueling operation. If vehicle is running have chock blocks in place with park brake set. Do not fuel while jumping the battery.
4. Climbing in back of truck for hose nozzle.	Slip hazard, FS	Use three point contact when climbing.
5. Inspect hose and nozzle.	Hose could leak, E, Fire hazard, FS slip hazard	Always visually inspect hose before use, No smoking.
6. Lay out hose	FS, tripping	Make sure your access is clear, keep hose to side of rig and truck. No Smoking!!!
7. Adding fuel to tank	Spill E	Inspect nozzle, **NEVER LEAVE NOZZLE UNATENDED WHILE FUELING!!!**

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught In (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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Boart Longyear Job Safety Analysis Form

Job or Operation: Mixer Tub Use | Date: June 1, 1998 | New : X | JSA#: S-016

Equipment Type: Sonic Rig | Operator: Driller -Assistant | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: The use of Portland cement or bentonite also has hazards such as inhalation of these products.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Mixer set Up & Connections	SB/CW/CB/CI: Hazards include injury to hands, lifting hazards and trip hazards from hoses.	Be sure to wear proper PPE. Use two or more people to lift tub and put in place. Be sure to inspect all water & hydraulic connections.
Mixer Use	SB/CBT/CW/FB: Hazards include high pressure water, lifting bags of portland, trip hazards, the possibility of getting caught in mixer mechanism and the possibility of plugging of the outlet lines and moyno pump.	All operators must be trained in the use of the mixer. Operator must clear the area around mixer before engaging and give a verbal warning.
Cleaning Mixer	SB/CBT/CW/FB: Hazards include high pressure water, lifting bags of portland, trip hazards, the possibility of getting caught in mixer mechanism and the possibility of plugging of the outlet lines and moyno pump.	All operators must be trained in the use of the mixer. Operator must clear the area around mixer before engaging and give a verbal warning. Be sure to have proper PPE for handling Portland or bentonite hazards.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Operating On Terrain | Date: February 21, 2002 | New : X | JSA#: S-017

Equipment Type: Drilling & Allied Equipment | Operator: Driller & Assistants | Revised: | BLA#

Boart Longyear Division: Environmental Drilling Division | Reviewed By: KL | Analysis: KL

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect & Examine terrain for drill equipment travel and operation	FS, OE, E: Slip, trip, fall. Possible exposure to contamination, poison oak and ivy. Possible ditches, soft ground ruts, rocks, stumps, debris and brush, stumps.Ice, snow, water, mud. Overhead or underground utilities, branches or tree limbs.	Use caution when examining terrain and site. Mark any hazards that may be in the way. Pick a stable and clear route to drill site.Levl off terrain or build roads to the drill location. Clear area or build pad at drill location if needed.
Transport equipment to drill location	CW, CB, SB: Obstructions, exposure to uneven ground, ditches, stumps, debris, ruts, rocks, ice, snow, trees and limbs. Tipping, rollover. Getting stuck or losing control while moving.	Use caution when moving on uneven or soft terrain. Use spotters while moving forward or back. Use mud or stabilization mats if needed.
Set Up Equipment	FS, FB, OE, E: Tipping or roll over of equipment, contact with existing branches or trees.	Wear proper PPE. Use pads under stabilizers. Level equipment. Stay clear of overhead and underground utilities or tree branches or limbs. Be alert when setting up equipment and raising towers. Mark worksite including the exclusion zone.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Hydraulic Stabilizer Use | Date: June 1, 1998 | New : X | JSA#: S018

Equipment Type: Sonic / Auger/ Rotary | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Use caution when using hydraulic stabilizers. Tipping of rig is possible.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Clear area of stabilizer travel & Inspect stabilizer components.	CW/CO: Parts of stabilizers contain pinch points and sharp edges.	Wear proper PPE. Be sure all pins and stabilizer parts are in good condition and secure. Check ground condition.Never work or be in the travel area of stabilizers when the rig is running.
Place blocking or cribbing on ground	OE/CBT/CB/CW: Lifting hazard, Bump hazard, hand or finger injuries possible by contact with the stabilzer or block or catching between.	Use caution when placing blocks and cribbing. Never let a person operate the stabilizers while someone has their hands or other body parts in the path of the stabilizer.
Lower Stabilizers	CBT/CB/CW: Pinning or pinching hazard. Possibility of rig being unstable and tipping if stabilizers do not contact solid ground.	Always clear stabilizer travel area. Use spotters to watch for proper landing of stabilizers. Lower stabilizers equally, a little at a time to test stability.
Raise stabilizers	CW/CO: Parts of stabilizers contain pinch points and sharp edges.	Always clear stabilizer travel area. Use spotters to watch for proper landing of stabilizers. Raise stabilizers equally, a little at a time to lower rig evenly and prevent tipping. Clean off any mud or dirt that would fall off during travel. Wear gloves.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Hydraulic Stabilizer Use Date: June 1, 1998 New : X JSA#: S018

Remove and store blocking or cribbing	CBT/CW/OE: Lifting hazard, possible sharp edges or splinters	Always wear gloves. Use proper lifting. Use tools to dig out blocking if needed. Store and secure on deck.

Boart Longyear Job Safety Analysis Form

Job or Operation: Tower/Mast Down | Date: September 1, 1999 | New : X | JSA#: S-019

Equipment Type: Sonic | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: All personnel within 35' must have proper PPE and must be alert and watch as tower is lowered

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Unhook / free all winch cables and hooks/ extend	SA/CB/CI; Hand /Finger injuries possible	Wear proper PPE including gloves
Remove Safety Pins or Bolts	SA/CB/CI: Hand/finger injuries possible	Wear proper PPE including gloves. Use proper tools if needed.
Clear area, hoses and equipment clear	FS/SA; Slip / trip / fall while moving around deck	Proper PPE, use verbal and hand signals to clear area and be sure all hoses and cables are clear before lowering
Lower tower or mast	SB/CBT/CI/CB; Falling objects, snagged equipment or hoses, pinch or pin in moving parts between tower and rig	Guide cables, everyone must be alert and watch tower lowering, guide tower in equipment into parked position. BE SURE STABILIZERS ARE DOWN AND STABLE.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Triplex Pump Operation | Date: August 1, 1997 | New : X | JSA#: S-020

Equipment Type: Sonic Drill | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Water under high pressure is a hazard. Be sure to control pressure and flow. Keep pump from freezing.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Attach inlet hose to water source & pump	CB/CW:Hazards include injury to hands while attaching the hoses by making connections to the valves and fittings. A trip hazard may be created by the use of hoses and a slip hazard may be present because of water. The hoses may contain wire burrs that can injure hands. The pump has moving parts that could be pinch points. A lifting hazard is also present.	Always wear proper PPE and run the hoses as not to create a trip hazard.Inspect all hoses, connections to be sure they are in good condition and are rated and can withstand the pressure that will be created by the pump. Guards must be in place to remove pinch points. Use caution when lifting large amounts of hose.
Pump Engagement	CB/CW/SB: High pressure water hazard. Water pressure may also cause movement and whipping of hoses. A plugged hose can burst causing high pressure water to escape.	Wear proper PPE. Always warn crew of pump engagement. Be sure lines are clear and not frozen or plugged. Whip checks must be installed on lines or hoses that may cause injury.
Pump shut down & water source disconnection	CB/SB: The hazards include hand injury from working valves and disconnection of fittings and hoses.	Wear proper PPE. Be sure to drain pump if used during cold temperatures. Use caution when lifting large amounts of hose. Store hose so a trip hazard is not created.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Underground Utility Line Dangers | Date: June 1, 2001 | New : X | JSA#: S-021

Equipment Type: Drill Rigs-Excavating Eq. | Operator: Driller-Assistants | Revised: | BLA#

Boart Longyear Division: EDD-CDD | Reviewed By: | Analysis: K.L.

Notes: This JSA refers to underground utility lines including electrical power, gas, fiber optic, water, sewer and product or chemical lines.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Identify Area Of Drilling, Digging or Excavation - Mark Area Boundaries. Mark each exact location of boring or excavation if possible.	FS; Slip, trip or fall possible. Traffic hazards. Contact with utility lines that may contain: electrical power (high and low voltage), gas (both liquid and gas), chemicals, fiber optic, water, sewer and storm sewer.	Wear proper PPE, use cones, flags, tape or other markers to identify boundaries of work including any extra underground disturbance.
Locate and inventory all possible utility conflicts with drilling or excavation.	FS; E; CW; Slip, trip or fall possible. Traffic hazards. Contact with utility lines.	Consult with property owner or maintenance supervisor responsible for property. Locate client or site maps that may show location of utilities. Call locator companies including one call or State or Province controlled organization. Use private locator if needed. Identify existing poles, meters, utility boxes. Inventory each utility.
Locate utility locator marking and compare with inventory of all possible utuilities on site	FS, E, CW; Slip, trip, fall possible. Traffic hazards. Contact with utility lines.	Review the location of all utility marking and compare with the utility maps, inventory and location of meters, boxes and poles. In the case marks are unclear, can't be read or marks have been covered with snow or other material or have been washed away, call for a remark. Do not excavate or drill if marks or locations are not clear. Consult individual utility companies if needed.
Set up equipment at boring or excavation locations.	CW; E; FB; Slip, trip, fall, contact with equipment, exposure to utilities, traffic hazards.	Set up equipment a safe distance from utility marks using an extra margin for mis-marks. Use a safe distance depending on type of utilities. Use the utility suppliers safe distance. Take into account underground disturbance that can move earth or rock into a utility line causing a break. Stay a minimum of 10' from all electrical and gas lines. Stay a minimum of 20' from fiber optic lines.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Observe as you drill or excavate	CW; SA; CBT; E: Contact with utilities, exposure to utilitiy material or power, striking lines or pipes, traffic and equipment hazards.	Wear proper PPE. Be aware of changes in drilling sounds, contact with tape, marking material, wire, pipe or cable in boring, excavation or evidence of any material on drilling or sampling tools. Be aware of smells, sample changes in color or moisture. If in doubt, stop work immediately.
IN CASE OF CONTACT WITH UTILITIES	E: Exposure to fire, explosion, electrical shock, high pressure fluids including gas, water or other products including chemical contamination, toxic gas or waste.	Wear proper PPE. Stop work immediately. Evacuate to a safe area. Call utility companies, utilities. Call emergency workers including the fire department in the case of gas or chemical leaks. In the case of gas or chemical breaks, alert and evacuate any area people. Do not use any electrical equipment.
After control of any break situation	E: Exposure to fire, explosion, electrical shock, high pressure fluids including gas, water or other products including chemical contamination, toxic gas or waste.	Wear proper PPE. Document location of equipment Vs. location of utility marks and actual lines. Take pictures and complete a written report while on site.

Boart Longyear Job Safety Analysis Form

Job or Operation: Hose Pump Operation | Date: July 1, 2001 | New : x | JSA#: S-022

Equipment Type: Auger Drill Rig | Operator: Driller-Assistant | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: K.L. | Analysis: K.L.

Notes: Pump is used for pumping water, grout or drilling mud and mixing grout.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect pump and related equipment before use.	CW, FS: Sharp areas may be present. Slip, trip or fall is possible	Wear proper PPE including gloves. Check all equipment over for proper type and capacity. Be sure whipp checks are installed on hoses and are set up to work properly. The hoses and fitting capacity must exceed the pump out put capacity. Be sure guards are in place at rotation points.
Install suction and outlet hoses	CW, FS: Sharp areas may be present. Slip, trip or fall is possible	Wear proper PPE. Be sure hoses are not plugged or frozen.
Operate Pump	CW, E, SB: Hoses can plug off and blow out. Rotation areas are dangerous. High pressure fluids are a danger. Hoses can be a trip hazard. Fluids can be slippery.	Never use hands to move rotating parts. Be sure proper PPE is used including eye or face protection. Always opeate pump from control panel. Never leave pump unattended. Keep hose from becoming a trip hazard. Keep surfaces clear and dry.
Disconnect pump and secure	SA, FS:Hoses and fittings can cause injury to hands and fingers. Slip, trip and fall is possible. Pressure may be present.	Always use proper PPE including gloves. Be sure pump is off and pressure is released prior to removal of hoses.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Deck Raising | Date: July 6, 1999 | New : X | JSA#: S-023

Equipment Type: Sonic Rig | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Stay clear of deck drop zone during raising, lowering and travel.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Remove ladder, rails and other equipment from deck	OE/FS/FB/CB/CW: Lifting hazard, fall hazard, climbing hazard, lifting hazard, hand injury possible from handling chains, hooks or cables.	Wear proper PPE, use caution on deck with no rails or ladders.Use proper lifting techniques.
Hoist deck into travel position	CBT/FB/CB/SB; Hazards include being struck by deck, caught between deck and rig, falling off of deck.	Driller must clear area of deck and the deck drop zone. Use verbal and hand signals along with eye contact before raising deck. Be sure raising lines are of proper capacity. Watch during operation to be sure there is no interference of equipment or rig parts.
Secure deck with travel rods or chains	CW/FB/CBT: Hazards include hand injuries while handling chains, hooks and cables and falling while climbing off operator area or while securing travel rods or chains.	Wear proper PPE, use caution when climbing down from deck. Be sure deck is secure for travel and chains or rods are of proper capacity.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Hot Pressure Washer Operation | Date: February 20, 2002 | New : | JSA#: S-024

Equipment Type: Hot Pressure Washers | Operator: Shop, Field, Yard | Revised: X | BLA#

Boart Longyear Division: Environmental Drilling Division | Reviewed By: KL | Analysis: KL

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect & Setup Pressure Washer For Use	CW,E, OE, FS: Pinch or cut fingers, Lifting, Slip, trip, fall.Electrical dangers and water pressure and hook ups.	Wear proper PPE including gloves, safety glasses and safety toe boots or shoes. Use proper lifting techniques if lifting or moving equipment. Be sure a GFI is used and all connections are dry and tight including electrical and water connections. Check hoses for cracks or breaks. Fuel bowl should be free of water. Check fuel level. Electrical cords must be in good repair. Be sure temperature is set at 160 F.
Fueling Unit	E, FB, OE, CW: Pinch or cut fingers, lifting, slip, trip, fall and exposure to fuel and fire-Explosion	Wear proper PPE including gloves, safety glasses and safety toe boots or shoes. Use proper lifting techniques if lifting or moving fuel containers. Be sure to use safety fuel cans. Eliminate all ignition sources. Don't spill fuel. Be prepared for fuel spills. Do not overfill and secure the fuel cap after filling.
Turn on water source, then burner while depressing trigger.	E, SB, CB: High pressure water and hot water. Fire or explosion, slippery surfaces. Water and debris from the high pressure water contact with equipment and soil debris.	Wear proper PPE including gloves, safety glasses, goggles or face shield, hearing protection, and safety toe shoes or boots. Wear water and/or chemical resistant coveralls. Check the hose and connections for leaks and proper operation. Never operate a pressure washer if the unit does not work at factory specs. Be sure safety trigger and relief valves work.
Pressure washer Use	E, SB, CB: High pressure water and hot water. Fire or explosion, slippery surfaces. Water and debris from the high pressure water contact with equipment and soil debris. Chenmical contamination is possible. Burns from hot water are possible.	Wear Proper PPE. Guard against chemical contamination and exposure to very hot high pressure water and debris.Keep hose clear of tangling. Kepp unit from freezing.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Hot Pressure Washer Operation Date: February 20, 2002 New : JSA#: S-024

Secure unit for storage	E, FS, OE: Slip, trip, fall, exposure to electrical and water sources. Over exertion from moving or lifting.	Turn off power and water to unit. Drain water from unit and hoses to prevent freezing. Use air to blow out lines. Wear proper PPE at al times. Check hoses and equipment for any defects and write up repair form if needed. Always use proper lifting techniques. Use lift gates or cranes to hoist equipment onto truck platforms. Secure equipment to trucks before moving.

Boart Longyear Job Safety Analysis Form

Job or Operation: Pulling Out Stuck Equipment | Date: January 5, 2002 | New : X | JSA#: S-025

Equipment Type: Trucks & Equipment | Operator: Driller-Assistant | Revised: | BLA#

Boart Longyear Division: Environmental Drilling Division | Reviewed By: KL | Analysis: Field Staff

Notes: Refer to other JSA forms, like loading and unloading equipment

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Assess the situation: Determine the weight of equipment and extent that the equipment is stuck.Identify potential hazards and put together a plan of action.	FS; CW; E: There is a possibility of slip and fall or bumping into equipment while inspecting it. Equipment could shift and pin the inspector.	Wear proper PPE, use extreme caution when inspecting equipment. Be sure equipment is stable before crawling or moving around it.
Gather towing equipment together and inspect all equipment for condition and capacity.	CW; SB; CBT: Burrs and metal on equipment can cause injury to hands. Weight of equipment can cause back strains.	Wear proper PPE. Use proper lifting techniques. Use caution when handling chains, cables, hooks and slings.Be sure capacity of all equipment exceeds the requirements for the job. Be sure equipment is in good condition.
Unload any unnecessary weight from stuck equipment or trucks.	E; OE; SB;FS; CB: Lifting, pin and pinching hazards. Slip, trip, twist and falls are additional hazards.	Use proper lifting techniques. Use caution moving equipment around in uneven terrain and soft ground conditions.
Hookup and Secure pulling equipment to stuck equipment and units used to pull out stuck equipment	CBT; FS;E: Slip, trip, fall, overexertion and getting caught between equipment and	Use proper lifting techniques. Use caution moving equipment around in uneven terrain and soft ground conditions. Use designated equipment for the pulling task. Hook pulling equipment to the proper areas on both the equipment being pulled and the equipment pulling. Pull equally. Never pull from or on one side of equipment.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Pulling Out Stuck Equipment Date: January 5, 2002 New : X JSA#: S-025

Pull equipment out	CB; CBT; SB: Cables or chains can break and fly striking people or equipment.	Keep people clear during pulling operation. Take slack out of pulling equipment before adding power. Blow horn to warn everyone in the area of operation. Use hand signas or two way radio if needed to communicate between puller and equipment being pulled out. Pull to safe stable level area.
Secure equipment	FS; FB; SB; CI: Can slip, trip or fall. Hands can be caught on burrs or pinched between equipment.	Set brakes, chock wheels. Remove pulling equipment, inspect and store away.

Boart Longyear Job Safety Analysis Form

Job or Operation: Securing Job Sites-Equipment | Date: January 5, 2002 | New : X | JSA#: S-026

Equipment Type: Drilling Equipment | Operator: Driller-Assistants | Revised: | BLA#

Boart Longyear Division: Environmental Drilling Division | Reviewed By: KL | Analysis: Field Staff

Notes: Use related JSA forms for related tasks while securing sites.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Hold a crew meeting to assess situation, procedure and assign designated tasks. Examine site	FS; SA: Slip, trip, fall.	Wear proper PPE. Use caution when examing site.
Secure boring, drill hole or well.	E; FB; OE; CBT; OE: Contact with contamination including chemicals and gas vapors. Tools, equipment and parts can cause injury to body parts including hands and feet. Use proper lifting techniques.	Wear proper PPE. Attach a cover to the well or casings top opening. Cover any open holes or excavations. Lower and attach the drill head if possible
Secure Rig deck, controls and operating equipment to prevent unauthorized use or vandelism.	FB; FS; OE; CBT: Injury, pinch or pin or contact with equipment and tools can occur.	Use proper lifting. Wear proper PPE. Disengage PTO, push in and activate kill buttons. Lower mast, raise lift gate and lower jacks. Remove ladder, chock wheels, lock tool boxes and lock cab doors.
Secure water truck and crane to prevent vandelism and unauthorized use.	FB; FS; OE; CBT: Injury, pinch or pin or contact with equipment and tools can occur.	Use proper lifting. Wear proper PPE. Secure crane, retract and lower. Disengage PTO. Chock wheels, lock tool boxes and lock cab doors. Secure and cover welder and pressure washer. Secure fuel cans. Remove ladder.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Securing Job Sites-Equipment Date: January 5, 2002 New : X JSA#: S-026

Secure job site area to prevent vandelism and unauthorized tampering and entry to site.	FB; FS; OE; CBT: Injury, pinch or pin or contact with equipment and tools can occur.	Use cones or caution tape to mark area. Remove trash and debris, secure lids on containers or drums, cover or remove soil cutting and drilling supplies. Lock up tools and equipment in tool boxes. Lock gates if present at site.

Boart Longyear Job Safety Analysis Form

Job or Operation: Servicing Drill Rigs | Date: February 21, 2002 | New : | JSA#: S-027

Equipment Type: Environmental Drill Rigs | Operator: Shop & Field Staff | Revised: May-07 | BLA# B-007

Boart Longyear Division: Environmental Drilling Division | Reviewed By: Dan Casey | Analysis: KL

Notes: Refer to specific JSA forms for tasks related to servicing drilling rigs

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Secure Equipment	SA, CW, E, OE, FS: Moving equipment, shafts and gears. Stored energy in cables and hooks or electrical systems. Contamination on or near equipment. Hot surfaces. Slippery surfaces.	Wear proper PPE, Use caution when climbing on equipment. Release air, water or oil pressure from equipment. Shut off equipment, set brakes and engage safety shut down switches. Chock wheels if applicable. Lower tower if applicable. **Lock out** equipment to prevent energizing while people are working. A gang box with a lock for each crew member working on the equipment.
Determine extent of repair by examination and action to be taken	SA, CW, E, FS, OE: Slip, trip fall, exposure to contamination, pinch or catch body parts on or between equipment. Hot or slippery surfaces.	Wear proper PPE. Use caution when climbing on equipment during inspection. Use ladders and/or fall protection when doing inspections or working on equipment. Lockout or de-enegize all power sources. Plan with other members of crew before continuing. Agree on a plan of action. Consult maintenance supervisors.
Service, Repair or Replace equipment	CB, CI, FS, FB, OE, SB: Slip, trip, fall, exposure to stored energy, high pressure water, oil, water or fluids. Pin or pinch hands in moving parts. Sharp or burred edges on equipment.	Wear proper PPE. Use proper tools and repair parts. Use fall protection for working above work decks or the ground. Be aware of weights of tools or equipment when lifting or exerting force. Never use drill heads, feeds, hoisting cables or equipment to access towers or equipment for repair.
Test all equipment before returning equipment to normal operation	SA, CW, E, OE, FS: Moving equipment, shafts and gears. Stored energy in cables and hooks or electrical systems. Contamination on or near equipment. Hot surfaces. Slippery surfaces.	Use caution when powering up equipment after repair. Disengage safety shut down switches and remove lock out-tag out equipment. Advise all individuals to pay attention during start up of equipment. Check for leaks and proper operation of repaired or replaced equipment. Use the same procedures as used with standard operation of equipment.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Deck Lowering | Date: May 1, 1999 | New : X | JSA#: S-028

Equipment Type: Sonic Drills | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Crew must wear proper PPE. Decks must be secured during travel of any kind. Always stay clear of deck drop zone.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Attach head or hoist to deck and take up slack and tension on safety chains or cables	FB/FS/CBT/CW: Climbing hazard, hand injury from contact with chains or cable.	Driller must be sure area is clear. Use caution when climbing on to deck. Be careful not to be pinned between deck and drill. Wear propper PPE and clear area around deck in case it falls.
Remove safety and travel chains, rods or cables	FS/FB/CBT/SB: Fall to deck or ground possible. Deck could drop without warning. Removing safety chains, hooks, pins or cables can cause hand injuries.	Wear proper PPE, keep everyone clear when detaching chains, rods, hooks or cables.
Lower deck by moving head or winch cables	SB/SA/CBT: Deck can fall on personnel on the ground	Driller must clear area and lower deck slowly to the ground. Give verbal or hand signal warnings to crew around deck.
Secure deck and install stairs and rails and other fall protection. Level deck with hydraulic stabilizers.	FB/FS/CB/OE:Lifting hazard, fall hazards	Wear proper PPE, Use caution when installing rails and fall protection. Use proper lifting techniques and use the stairs fro entry to the deck.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Drilling -General | Date: April 1, 1997 | New : X | JSA#: S-029

Equipment Type: Sonic Drills | Operator: Driller / Assistant | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: KL

Notes: Drilling and operation of allied equipment provides the crew to many exposures. All crew members must be alert at all times. They must have proper training for each task and wear proper PPE at all times.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Job/Rig /Site Preshift	FS/FB/CW/SA: Falling hazard while climbing on rig or water truck deck. Contact with hazards while checking fluids and levels.	Wear propper PPE, use proper lifting tecniques. Use caution when checking levels or condition of equipment with hands
Setup of Equipment	CBT/CB/FS/FB/SB: hazards include being caught between equipment, falling on the deck or ground, lifting hazards, pinning or pinching between tools or equipment.	Wear proper PPE. Be sure areas are clear before operating any of the rig equipment. Use caution when using hands for setup of equipment. The crew must use good verbal and eye contact during setup.
Operation of Sonic rig	SB/SA/CB/CW/CO/CI/CBT/FS/FB/OE/E: All exposures to injury are possible during drilling. Noise, mechanical failure, injury by pinning or pinching, working under hoisted loads and working with tools, equipment and fluids under pressure are some of the exposures.Contamination exposure is a hazard.	Crews must stay clear of operating equipment, be careful of hand and finger placements. Wear proper PPE at all times in the exclusion area and use good communication skills during work. Use safe lifting habits. Plan all tasks before doing. All personnel must have proper training. Noise over 85dB is a hazard.
Operation of allied equipment	SB/SA/CB/CW/CO/CI/CBT/FS/FB/OE/E: All exposures to injury are possible during drilling. Noise, mechanical failure, injury by pinning or pinching, working under hoisted loads and working with tools, equipment and fluids under pressure are some of the exposures.	Crews must stay clear of operating equipment, be careful of hand and finger placements. Wear proper PPE at all times in the exclusion area and use good communication skills during work. Use safe lifting habits. Plan all tasks before doing. All personnel must have proper task training.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Split Barrel Use | Date: September 1, 2000 | New : X | JSA#: S-030

Equipment Type: Sonic drill Rig | Operator: Driller/Assistant(s) | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Assemble split barrel and install liner	CBT: Pinch or pin hazards	Wear proper PPE including gloves. Be sure of hand placement and wrenches used should be in good condition.
Move sonic head up (No Rotation)	CBT/SB: Individuals can be caught between head and tower, chain sprocket and cable or struck by head movement.	Stay in safety zones. Driller must be sure area is clear before moving head. Do not use rotation during movement
Tilt Head Out	SB/CW Workers can be struck by head or spindle when unit is swinging out.	Stay out of yellow zone. Driller must watch that area is all clear.
Assistant picks up split barrel and moves it to head spindle to install and shoulder up the barrel.	OE/FS/SB: Assistant must be careful of tripping, slipping or dropping barrel and the weight of the barrel as a lifting hazard.	Keep deck clear, clean and with good traction. Use proper lifting techniques.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Sonic Split Barrel Use Date: September 1, 2000 New : X JSA#: S-030

Tilt head in-No Rotation	SB/CBT: Crew can be struck by head tilting in or pinned between head and mast	Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Stay clear of sprockets, chains and cables
Lower head into wrenches	CBT/SB: Crew can be pinned or struck by head movement and sprocket chain and cable movement	Stay clear of all movement areas. Driller should not lower head until all areas are clear.
Disassemble split barrel and remove liner	CBT: Pinch or pin hazards	be sure to wear gloves. Be sure of hand placement and wrenches used must be in good condition.
Cap ends of liner and deliver liner to client	OE/E/FS/FB: Lifting hazard. Contamination exposure possible. Trip-Slip Fall possible.	Use proper lifting, proper PPE, keep deck and stairs clear and dry for traction. Be sure rails are in place.

Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Split Barrel Use | Date: September 1, 2000 | New : X | JSA#: S-031

Equipment Type: Sonic drill Rig | Operator: Driller/Assistant(s) | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Assemble split barrel and install liner	CBT: Pinch or pin hazards	Wear proper PPE including gloves. Be sure of hand placement and wrenches used should be in good condition.
Move sonic head up (No Rotation)	CBT/SB: Individuals can be caught between head and tower, chain sprocket and cable or struck by head movement.	Stay in safety zones. Driller must be sure area is clear before moving head. Do not use rotation during movement
Tilt Head Out	SB/CW Workers can be struck by head or spindle when unit is swinging out.	Stay out of yellow zone. Driller must watch that area is all clear.
Assistant picks up split barrel and moves it to head spindle to install and shoulder up the barrel.	OE/FS/SB: Assistant must be careful of tripping, slipping or dropping barrel and the weight of the barrel as a lifting hazard.	Keep deck clear, clean and with good traction. Use proper lifting techniques.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Sonic Split Barrel Use Date: September 1, 2000 New : X JSA#: S-031

Tilt head in-No Rotation	SB/CBT: Crew can be struck by head tilting in or pinned between head and mast	Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Stay clear of sprockets, chains and cables
Lower head into wrenches	CBT/SB: Crew can be pinned or struck by head movement and sprocket chain and cable movement	Stay clear of all movement areas. Driller should not lower head until all areas are clear.
Disassemble split barrel and remove liner	CBT: Pinch or pin hazards	Be sure to wear gloves. Be sure of hand placement and wrenches used must be in good condition.
Cap ends of liner and deliver liner to client	OE/E/FS/FB: Lifting hazard. Contamination exposure possible. Trip-Slip Fall possible.	Use proper lifting, proper PPE, keep deck and stairs clear and dry for traction. Be sure rails are in place.

Boart Longyear Job Safety Analysis Form

Job or Operation: Water Sampling Equipment Installation | Date: September 1, 2000 | New : X | JSA#: S-032

Equipment Type: Sonic Drill Rig-Sampling Equipment | Operator: Driller/Assistant(s) | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break Casing Joint	CW/CD/CB: Rotation hazard, wrench pinch or pin hazard	Stay clear of wrench, wear proper PPE, stay clear of rotating casing
Move sonic head up	CBT/SB: Individuals can be caught between head and tower, chain and sprocket or struck by head movement.	Stay clear of wrench, wear proper PPE, stay clear of rotating casing
Install screen assembly using wireline system	CW/CBT/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools. Breakage of cables or hooks can cause serious injury,	Always clear area of hoisting. Keep verbal and eye contact with person running controls and all people in area of hoisting. Be sure hands or other body parts are not contacting cable or hooks while lifting. Never exceed capacity of components. All individuals must use proper PPE.
Lower head into casing for tightening and connection	CBT/SB: Individuals can be caught between head and tower, chain and sprocket or struck by head movement.	Stay clear of all movement areas. Driller should not lower until areas are all clear.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Vibrate and raise head and casing, exposing screen	CBT/SB: Individuals can be caught between head and tower, chain and sprocket or struck by head movement.	Stay clear of travel and head. Stay clear of sprockets, chains and cables.
Break Casing Joint	CW/CO/CB: Rotation hazard, wrench pin or pinch hazard	Stay clear of travel and head. Stay clear of sprockets, chains and cables.
Move sonic head up	CBT/SB: Individuals can be caught between head and tower, chain and sprocket or struck by head movement.	Stay clear of travel and head. Stay clear of sprockets, chains and cables.
Install pump and packer assembly using wire line	CW/CBT/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools. Breakage of cables or hooks can cause serious injury,	Always clear area of hoisting. Keep verbal and eye contact with person running controls and all people in area of hoisting. Be sure hands or other body parts are not contacting cable or hooks while lifting. Never exceed capacity of components. All individuals must use proper PPE.
Inflate packer	CB/CW/E: High pressure air or gas. Compressed air or nitrogen	Make sure fittings are secure and recommended PSIs are followed.

Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Wrench Carbide Changing | Date: September 1, 2000 | New : X | JSA#: S-033

Equipment Type: Sonic Drill Rig | Operator:)riller/Assistant/Mechani | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Remove bolts or pins that hold blocks in place that hold carbides. This may require use of a hammer and punch.	SB/SA: Hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face and eye would be common hazards.	This is best done with tower up and head in the raised and locked position. Proper PPE including gloves, eye or face, head and hearing protection are required. Be sure all tools and equipment being used are in good condition. A one piece hammer must be used. Some training is required.
Place block in vise and knock out carbide inserts using a hammer and punch	SB/SA: Hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face and eye would be common hazards.	This is best done with tower up and head in the raised and locked position. Proper PPE including gloves, eye or face, head and hearing protection are required. Be sure all tools and equipment being used are in good condition. A one piece hammer must be use
Using a hammer, tap new carbides into place.	SB/SA: Hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face and eye would be common hazards.	This is best done with tower up and head in the raised and locked position. Proper PPE including gloves, eye or face, head and hearing protection are required. Be sure all tools and equipment being used are in good condition.A one piece hammer must be use
Install block with new carbides back into wrenches. Reinstall bolts or pins to secure. Hammer may be needed.	SB/SA: Hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face and eye would be common hazards.	This is best done with tower up and head in the raised and locked position. Proper PPE including gloves, eye or face, head and hearing protection are required. Be sure all tools and equipment being used are in good condition. A one piece hammer must be use

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Wrench Removal/Installation | Date: September 1, 2000 | New : X | JSA#: S-034

Equipment Type: Sonic Drill Rig | Operator: Mechanic-Driller-Asst | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Remove and install hydraulic hoses	E/SA: Pinched fingers, hydraulic fluid hazard, possible splash or spill	This is best done with the tower up and in the locked position. Wear proper PPE including eye, face, head and hearing protection. Hand tools must be in good condition. Hydraulic line caps and plugs along with absorbant materials must be used to stop oil flow or spill.
Remove and install fastening bolts	SA: pinched or smashed fingers and hands.	Be sure proper tools are available and use them.
Remove and reinstall wrench assembly using crane or forklift	CBT/CW/SB: Hoisting can have hand hazards such as being pinned between rig and object being hoisted. Dropping hoisted objects can assist serious injury.	Clear area of hoisting. Keep verbal and eye contact with person running control and people in the area. be sure hands or other body parts are not contacting lifting cables or chain. Never exceed capacity of components.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Wrench Operation | Date: July 1, 1998 | New : X | JSA#: S-035

Equipment Type: Sonic Rig | Operator: Driller | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Never operate wrenches for any reason when hands or other body parts are in wrenches.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect wrenches for proper operation, condition and fit	CB/CW/CBT/CI:Hazards include sharp edges, the possibility of pinching or pinning in the jaws of the wrenches. Flying debris from pounding and prying on steel wrenches and parts.The head and other tools above wrenches are a hazard.	Wear proper PPE including glasses and gloves. Never operate wrenches when hands or other body parts are within wrenches. When running wrenches for inspection, be sure that the area is clear. Be sure head and other suspended tools are secure.
Operating or testing wrenches	CB/CW/CBT/CI:Hazards include sharp edges, the possibility of pinching or pinning in the jaws of the wrenches. Flying debris from pounding and prying on steel wrenches and parts.	Wear proper PPE including glasses and gloves. Never operate wrenches when hands or other body parts are within wrenches. When running wrenches for inspection, be sure that the area is clear. Be sure head and other suspended tools are secure. Operator must clear area before operating wrenches.
Repair of wrenches	CB/CW/CB/CI/E: Hazards include hand and finger injuries. Lifting injuries and pinching or pinning injuries. The wrenches contain many sharp edges and pinch points.	Never operate the hydraulics while hands are in the wrench area. Be sure to secure all tools or items suspended above the wrenches. Wear proper PPE. Rig must not be running.
Replacing Jaws or Carbide Teeth	CB/CW/CB/CI/E: Hazards include hand and finger injuries. Lifting injuries and pinching or pinning injuries. The wrenches contain many sharp edges and pinch points.	Never operate the hydraulics while hands are in the wrench area. Be sure to secure all tools or items suspended above the wrenches. Use proper tools for repair of wrenches and replacement of jaws or carbide teeth. Wear proper PPE. Rig must not be running.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Sonic Water Sampling & Eq. Removal | Date: September 1, 2000 | New : X | JSA#: S-036

Equipment Type: Sonic Drill Rig | Operator: Driller/Assistant(s) | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes: This JSA is used with JSA 1-0021

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Water Pump & Purge	CW/E: Electric hazard. Exposure to contaminated purge water,	Be sure all electric components are properly connected and all hoses are secure.
Deflate Packer	CB/CW/E: High pressure air or gas. (Compressed air or nitrogen hazards)	Be sure area is clear around release point of air or gas. Wear proper PPE.
Remove pump and packer assembly	CB/CW/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools, breakage of cables or hooks can cause serious injury.	Always clear area of hoisting. Keep verbal and eye contact with person running controls and all people in area of hoisting. Be sure hands or other body parts are not contacting hooks or cables while lifting. Never exceed capacity of components. All individuals must wear proper PPE.
Remove screen assembly	CB/CW/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools, breakage of cables or hooks can cause serious injury.	Always clear area of hoisting. Keep verbal and eye contact with person running controls and all people in area of hoisting. Be sure hands or other body parts are not contacting hooks or cables while lifting. Never exceed capacity of components. All individuals must wear proper PPE.
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: Sonic Water Sampling & Eq. Removal Date: September 1, 2000 New : X JSA#: S-036

Lower head into casing for tightening and connection	CBT/SB: crew can pinned or struck by head movement and sprocket, chain or cables.	Stay clear of all movement areas. Driller should not lower until all areas are clear.

Boart Longyear Job Safety Analysis Form

Job or Operation: Wrench Jaw Changing | Date: September 1, 2000 | New : X | JSA#: S-037

Equipment Type: Sonic Drill | Operator:)riller/Assistant/Mechani | Revised: | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM/KL | Analysis: SJ

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Remove bolts or pins that hold the wrench jaws in place. This may require the use of a hammer and ounch.	SB/SA: hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face or eyes is common.	This is best done with the tower up and in the locked position. Use proper PPE including gloves and eye, head and hearing protection. Be sure all tools being used are in good condition, especially the hammer. A one piece hammer must be used. Some training is required.
Install new jaws and reinstall bolts or pins to secure. This may require the use of a hammer and punch.	SB/SA: hazards include injury to hands, face and eyes from using hand tools, hammer and punch. Smashed fingers and flying debris to face or eyes is common.	This is best done with the tower up and in the locked position. Use proper PPE including gloves and eye, head and hearing protection. Be sure all tools being used are in good condition, especially the hammer. A one piece hammer must be used. Some training is required.

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Boart Longyear Job Safety Analysis Form

Job or Operation: TOWER UP | Date: September 1, 2000 | New : X | JSA#: S-038

Equipment Type: Sonic Drill | Operator: Driller | Revised: X | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: All personnel within 35' of rig must be wearing proper all PPE. Everyone must be alert while raising or lowering tower or mast

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Clear Area	FS/FB; Slip, trip and fall	While checking area to be clear, be careful of traction and any items on deck. Be sure nothing loose is in tower. Be sure everyone knows tower will be raised or lowered. Eyes should be on tower.
Arrange all winch cables (if equipped)	CW, CBT: While handling cables and hooks, burrs may be present. Hand injury possible	Wear proper PPE including gloves.
Raise Tower	CB/CW/CBT/SB/CI; Falling objects, pin or stiking of body, arms, hands or fingers is possible between tower components and rig	Keep hands and fingers clear, everyone should have eyes on tower, and the area within 35' should be clear. Be sure stabilizers are down and stable.
Secure Tower-Install safety pins or bolts if applicable	CI/SA; Hand or finger injury, bump hazard	Use proper tools. Do not stick fingers in alignment holes. Be sure tower is stable, do not move while inserting pins or bolts
Sequence of Basic Job Steps	**Potential Hazards Unsafe Acts or Conditions**	**Recommended Safe Job Procedure**

Job or Operation: TOWER UP Date: September 1, 2000 New : X JSA#: S-038

Secure winch Cable	CB/CBT/CO; Cables have burrs, caught between cable and rig is possible	Use caution when operating a cable someone is holding on to. Wear proper PPE including gloves.

Boart Longyear Job Safety Analysis Form

Job or Operation: Winch - Hoist Operation | Date: June 1, 1997 | New : X | JSA#: S-039

Equipment Type: Sonic / Auger / Rotary / Cranes | Operator: Driller / Assistant | Revised: Sep-00 | BLA#

Boart Longyear Division: EDD | Reviewed By: SP/ZM/DM | Analysis: KL

Notes: Winch and Hoist equipment requires daily inspections. It includes clamps, cables or hooks. Training is required.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect all winch equipment	CBT/CO/CI: Injury to hands or other body parts is possible. Broken or worn hoisting equipment can cause failures or serious injury. Cables contain frays and burrs that can injure hands.	Inspect all items including cable condition, hook and clamp condition. Verify proper capacities of all components. Be sure clamps are installed correctly.Be sure that safety hook catches work properly.
Clear area	CW/CBT/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools, breakage of cables or hooks.	Always clear area of hoisting. Keep verbal and eye contact with person running controls and all people in area of hoisting.
Hoist	CW/CBT/SB: Hoisting materials, tools or supplies can have hazards such as being pinned between rig and tools. Dropping equipment or tools, breakage of cables or hooks can cause serious injury.	Always clear area of hoisting. Keep verbal and eye contact with person running control and all people in area of hoisting. Be sure hands or other body parts are not contacting cable or hooks while lifting. Wear proper PPE at all time. Never exceed capacity of components. All individuals must have proper training on hoisting.Never hoist a stationary object that is not loose.
Secure winch or hoisting tools after use	CBT/CO/CI: Injury to hands or other body parts is possible. Cables contain frays and burrs that can injure hands.	Wear proper PPE. Secure cables and hooks to solid mountings for travel. Do not put too much tension on equipment. Just enough to hold components in place. Inspect all components for wear, breakage or poor condition.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Attaching Case (With Crane) | Date: December 9, 2006 | New: *X* | JSA#: 40

Equipment Type: Sonic Rig | Employee(s) Observed: Driller/Assistant | Revised: | BLA#

BLA Division: EDD Peoria | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Good attention by all crew. Use verbal and hand signals and maintain constant eye contact | Review Due:

Required PPE: Hard Hat, Safety Glasses, Steel Toe Boots, Hearing Protection, Gloves

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Lower Crane Hook Down and Attach Hook to End of Casing	SB/CB/CW/CBT Assistant can be struck by hook when hook is lowered. Assistant can get fingers stuck between hook and case opening.	Use proper PPE. Crane Operator ensures eye contact with assistant. Assistant must be aware of hook location at all times. Assistant must not allow fingers between hook and case.
Crane Operator raises End of Casing up using Crane and Assistant Attaches Strap Around Casing at Center of Balance	SB/CB/CW/CBT Casing can become detached from hook and drop.	Crane operator must not raise casing until assistants hand is clearly free of hook and casing. Assistant uses proper PPE including gloves. Assistant must not have any part of body, to include hands under casing when it is being raised.
Crane Operator Lowers Casing and Assistant Removes Hook from End of Casing	SB/CB/CW/CBT Assistant can be trapped between casing and the case storage area. Assistant can be struck by hook after it is detached.	Use proper PPE. Crane Operator ensures eye contact with assistant. Crane Operator raises hook straight up after hook is removed from case. Assistant must be aware of casing location and must not have any part of body, to include hands under casing when attaching strap.
Crane Operator Guides Hook to Strap and Assistant Attaches Hook to Strap	SB/CB/CW/CBT Assistant can be struck by hook. Assistant's hand can be pinched between hook and strap when end of casing is raised.	Crane operator must not raise casing until assistants hand is clearly free of hook and casing. Assistant uses proper PPE including gloves.

Job or Operation: Attaching Case (With Crane) Date: December 9, 2006 New: *X* JSA#: 40

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Crane Operator raises casing and guides it to duece on drill.	SB/CB/CW/CBT Assistant can be struck by casing. Assistant can get hand stuck in strap while drill is rotating and attaching case to duece.	Use proper PPE. Assistant must be aware of casing location. Assistant must not touch strap while drill is rotating and attaching case to duece. Assistant must stay out of yellow area.
Drill Operator Rotates Drill to attach Casing to Deuce. Assistant Removes Strap and Hook.	SB/CI/CW/CBT Assistant can get hand caught in strap during while drill is rotating and casing becomes cross threaded. Assistant can be struck by hook when detached from strap.	Use proper PPE. Assistant must not come in contact with strap while drill is rotating. Assistant must be aware of hook location until hook is out of work area.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Detaching Case (With Crane) | Date: December 9, 2006 | New: *X* | JSA#: 41

Equipment Type: Sonic Rig | Employee(s) Observed: Driller/Assistant | Revised: | BLA#

BLA Division: EDD Peoria | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Good attention by all crew. Use verbal and hand signals and maintain constant eye contact | Review Due:

Required PPE: Hard Hat, Safety Glasses, Steel Toe Boots, Hearing Protection, Gloves

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Assistant attaches strap to extended casing. Crane operator guides hook to strap.	SB/CB/CW/CBT Assistant can be struck by casing and hook. Casing can drop on assistant while attaching strap at center of balance point.	Use proper PPE. Assistant must be aware of casing location. Assistant must not allow any part of body to be below casing while extended and must attach strap to center of balance point.
Assistant Attaches Hook to Strap and crane operator raises hook to remove slack from strap.	SB/CB/CW/CBT Assistant's hand can be pinched between hook and strap when slack is removed.	Use proper PPE including gloves. Crane operator must not remove slack until assistants hand is clearly free of hook and casing.
Driller rotates drill to detach casing from deuce. Assistant ensures casing does not swing out or unbalanced end strikes deck.	SB/CI/CW/CBT Assistant can become pinned or struck by unbalanced casing after removed from deuce. Assistant can get caught in strap during rotation.	Use proper PPE. Crane Operator ensures eye contact with assistant. Assistant must not allow any part of body to be below casing. **Assistant must not come in contact with strap during rotation**.
Crane Operator guides casing to storage area.	SB/CB/CW/CBT Casing can become detached from hook and drop. Casing can swing knocking assistant off balance.	Use proper PPE including gloves. Crane operator must guide casing slowly enough as to allow assistant to maintain control.

Job or Operation: Detaching Case (With Crane) Date: December 9, 2006 New: *X* JSA#: 41

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Lower casing into storage area.	SB/CB/CW/CBT Assistant can be struck or crushed when casing is lowered.	Use proper PPE. Crane Operator ensures eye contact with assistant. Assistant must be aware of case location at all times. Assistant must not allow any part of body below casing while casing is suspended.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Rotation Guard/Barrier | Date: 12/19/06 | New: *X* | JSA#: 42

Equipment Type: Sonic | Employee(s) Observed: Driller/Assistant | Revised: | BLA#

BLA Division: EDD Peoria | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Good attention by all crew. Use verbal and hand signals and maintain constant eye contact | Review Due:

Required PPE: Hard Hat, Safety Glasses, Steel Toe Boots, Hearing Protection, Gloves

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Guard/Barrier is raised to protect employees while drill is rotating.	CB/CW/CI/E Personnel can contact pipe while rotating. Burs on rod or casing could damage hand or catch clothing. Injury could occur if Guard/Barrier is defective.	**Make sure Guard/Barrier is raised while drill is rotating Watch edge of support brackets for sharp metal, wear P.P.E. Have eye contact with driller and driller assistant. Inspect hinges. Burs should be removed by filing or peening with hammer.**

Job or Operation: Rotation Guard/Barrier Date: 12/19/06 New: *X* JSA#: 42

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Casing Addition | Date: 5/1/03 | New: | JSA#: S-043

Equipment Type: CTS-150 Compact Track Sonic | Employee(s) Observed: Driller/Assistant | Revised: | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level: 2

Notes: Various sizes of casing may be used for this operation. | Review Due:

Required PPE: Use proper PPE and good attention by crew. Use verbal and hand signals as well as eye contact.

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Move Sonic head up - No rotation	CBT/SB: Individuals can be caught between head and tower or struck by head movement. Wrench area can also be a pinch or pin point. Rotation or steel burrs on casing are hazards.	Stay in Safety Zones. Driller must be sure area is clear before moving head. Use NO rotation during movement. Wear proper PPE for all operations including gloves.
Tilt head out.	SB/CW: Workers can be struck by head, casing, spindle, or subs when unit is swinging out. Rotation and burrs are a hazard.	Stay out of caution zone. Driller must watch that area is all clear.
Assistant picks up casing and moves it to head spindle to install and shoulder up casing.	OE/FS/SB: Assistant must be careful of tripping, slipping, dropping rod, and the weight of the casing as a lifting hazard. Rotation and burrs are a hazard.	Use proper PPE including gloves. Keep work area clear, clean and with good traction. Use proper lifting techniques.
Driller starts rotation.	CO/CW: Rotation hazard, Burrs possible.	Driller stays at controls, uses slow rotation and rod loading mode. Assistant uses proper PPE including gloves. Keep hands out of inside casing. Careful not to loose grip.

Job or Operation: Casing Addition Date: 5/1/03 New: JSA#: S-043

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Rotation is stopped, head raised up, tilted it.	CB/SB/CBT: Head or casing can strike assistant. Assistant can be caught between head rod and tower.	Stay out of caution zone and wrench area. Driller must watch that area is all clear.
Head and casing are lowered into wrenches for tightening and connection	CBT/SB: Individuals can be caught between head and tower and struck by head movement.	Stay clear of travel. Keep hands and feet away from pinch points and wrenches.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Hose Pump Operation | Date: 7/1/01 | New: | JSA#: S-044

Equipment Type: Field Equipment Storage | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Pump is used for pumping water, grout or drilling mud and mixing grout | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect pump and related equipment before use.	CW/FS: Sharp areas may be present. Slip, trip or fall is possible.	Wear proper PPE including gloves. Check all equipment over for proper type and capacity. Be sure whip checks are installed on hoses and are set up to work properly. The hoses and fitting capacity must exceed the pump out put capacity. Be sure guards are in place at rotation points.
Install suction and outlet hoses.	CW/E/SB: hoses can plug off and blow out. Rotation areas are dangerous. High pressure fluids are a danger. Hoses can be a trip hazard. Fluids can be slippery.	Never use hands to move rotating parts. Be sure proper PPE is used including eye or face protection. Always operate pump from control pump. Never leave pump unattended. Keep hose from becoming a trip hazard. Keep surfaces clear and dry.
Operate pump	CW/E/SB: Hoses can blow out. Rotation areas are dangerous. High pressure fluids are a danger. Hoses can be a trip hazard. Fluids can be slippery.	Never use hands to move rotating parts. Be sure proper PPE is used including eye or face protection. Always operate pump from control pump. Never leave pump unattended. Keep hose from becoming a trip hazard. Keep surfaces clear and dry.
Disconnect pump and secure	SA/FS: hoses and fittings can cause injury to hands and fingers. Slip, trip and fall is possible. Pressure may be present.	Always use proper PPE including gloves. Be sure pump is off and pressure is released prior to removal of hoses.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Hydraulic Stabilizer Use | Date: 6/1/03 | New: | JSA#: S-045

Equipment Type: Field Equipment Storage | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Use caution when using hydraulic stabilizers. Tipping of rig is possible. Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Clear area of stabilizer travel and inspect stabilizer components.	CW/CO; Parts of stabilizers contain pinch points and sharp edges.	Wear proper PPE. Be sure all pins and stabilizer parts are in good condition and secure. Check ground condition. Never work or be in the travel area of stabilizers when the rig is running.
Place blocking or cribbing on ground	OE/CBT/CB/CW; Lifting hazard, bump hazard, hand or finger injuries possible by contact with the stabilizer or block or catching between.	Use caution when placing blocks and cribbing. Never let a person operate the stabilizers while someone has their hands or other body parts in the path of the stabilizer.
Loser Stabilizers.	CBT/CB/CW; Pinning or pinching hazard. Possibility of rig being unstable and tipping if stabilizers do not contact solid ground.	Always clear stabilizer travel area. Use spotters to watch for proper landing of stabilizers. Lower stailizers equally, a little at a time to test stability.
Raise Stabilizers	CW/CO: Parts of stabilizers contain pinch points and sharp edges.	Always clear stabilizer travel area. Use spotters to watch for proper landing of stabilizers. Raise stabilizers equally, a little at a time to lower rig evenly and prevent tipping. Clean off any mud or dirt that would fall off during travel. Wear gloves.

Job or Operation: Hydraulic Stabilizer Use Date: 6/1/03 New: JSA#: S-045

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Remove and store blocking or cribbing.	CBT/CW/OE: Lifting hazard, possible sharp edges or spinters.	Always wear gloves. Use proper lifting. Use tools to dig out blocking if needed. Store and secure on deck.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Mixer Tub Use - Mud or Grout | Date: 6/1/03 | New: | JSA#: S-046

Equipment Type: CTS-150 Compact Track Sonic | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA# | Analysis Risk

BLA Division: Sonic Drilling | Reviewed By: | Made By: | Level:

Notes: The use of Portland cement or bentonite also has hazards such as inhalation of these products. | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Mixer set Up and Connections	SB/CW/CB/CI: Hazards include injury to hands, lifting hazards and trip hazards from hoses.	Be sure to wear proper PPE. USe two or more people to lift tub and put in place. Be sure to inspect all water and hydraulic connections. Be sure gusrds are in place at shaft and propellor area. Be sure there is a shut off valve at the mixer and it is in the off position.
Mixer use	SB/CBT/CW/FB: Hazards include high pressure water, lifting bags of portland, trip hazards, the possibility of getting caught in the mixer mechanism and the possibility of plugging of the outlet lines and moyno pump.	All operators must be trained in the use of the mixer. Operator must clear the area around mixer before engaging and give a verbal warning.
Cleaning Mixer	SB/CBT/CW/FB: Hazards include high pressure water, lifting bags of portland, trip hazards, the possibility of getting caught in the mixer mechanism and the possibility of plugging of the outlet lines and moyno pump.	All operators must be trained in the use of the mixer. Operator must clear the area around mixer before engaging and give a verbal warning. Be sure to have proper PPE for handling Portland or bentonite hazards.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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Boart Longyear Job Safety Analysis Form

Job or Operation: Pit Pipe Installation | Date: 6/1/03 | New: | JSA#: S-047

Equipment Type: CTS-150 Compact Track Sonic | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level:

Notes: | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Unload Pit Pipe	Struck by, over exertion, Caught between, Fall - Same level, fall to below: The pipe is heavy and is a lifting hazard. It has sharp edges and injury to hands or the possibilty of being caught between the pipe and rig or water truck is possible.	The pipe should be handled by two people. Use proper lifting techniques. Do not throw pipe off truck. Wear proper PPE including gloves.
Position Pit Pipe Under Rig	Over exertion, contact with, caught between: The task of positioning the pipe includes hazards such as lifting, bumping, being struck by the pipe, and being caught between the pipe and other parts of the rig or ground.	Use caution when positioning the pipe. Be careful not to be caught between the pipe and other parts of the rig or ground. Crew should use good communication during this process. Wear proper PPE including gloves.
Puhshing and Sealing Pipe	Struck by, contact by, struck against: The hazards include contact with the pipe and other parts of the rig or ground or injury by the tools used to push the pipe into the ground.	Wear proper PPE. When driller operates controls, no one should be touching or be near the pipe when the pipe is pushed into the ground. Bentonite may be used for a seal. Other hand tools may be used to install the pipe into the ground.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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Boart Longyear Job Safety Analysis Form

Job or Operation: Pit Pipe Removal | Date: 6/1/03 | New: | JSA#: S-048

Equipment Type: CTS-150 Compact Track Sonic | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Used pit pipes may contain contamination | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Pull out pit pipe from boring	CBT/OE/SB/CB: Hazards include over exertion by pulling out pipe, lifting hazard, being caught between the pipe and other parts of the rig. If the pipe is pulled out mechanically by the drill rig feed or chain, this would also be a hazard. The pipe may contain soil or water contamination.	Wear proper PPE including gloves. Stay clear of pipe if it is being pulled out mechanically. Two people should move pipe out of area under rig. Be careful of being caught between pipe and rig or equipment. Rig may be moved rather then crawling under rig to remove the pipe. Use hand tools to dig out the pipe if necessary.
Storage of pipe	CBT/OE/SB/CB: Hazards include a lifting hazard, being caught between the pipe and other parts of the rig. Being struck by or contact with sharp areas of the pipe.	Remember to use caution with sharp edges, pinching fingers and getting caught between the pipe and the other areas of the storage area. Use caution in lifting and use a winch line (if available) or more then one person. Be sure to secure the pipe in the storage area.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

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Boart Longyear Job Safety Analysis Form

Job or Operation: Rod or Casing Deletion with Crane | Date: 1/1/01 | New: | JSA#: S-049

Equipment Type: Drill Rig | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA#

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level:

Notes: Removal of heavier rod or casing with crane. Use clear verbal and hand signals as well. Use with crane operations JSA. | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break casing joint in wrenches	CW/CO/CBT: rotation hazard, wrench pin or pin hazard	Stay clear of wrench, wear proper PPE. Stay clear of rotating casing.
Raise head and casing (no rotation)	CBT/SB: pin or pinch between head and tower, sprocket and chains	Stay clear of travel and head. Stay clear of sprockets and chains.
Tilt head out (no rotation)	SB: casing can strike people on deck.	Stay clear of swing out travel. Stay out of yellow zone.
Assistant moves crane and lifting appliances into place	CO/OE/FS/: rotation hazard, lifting hazard, slip/trip/fall hazard, burrs may be present. Hand and finger pinch is a hazard.	Use proper PPE, use correct crane rigging, keep deck clear, try and with good traction. Keep hands away from pipe and lifting applicances. Take slack out of lifting strap and appliance to take weight off of pipe. Use good communication and eye contact during task.

Job or Operation: Rod or Casing Deletion with Crane Date: 1/1/01 New: JSA#: S-049

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Slow rotation to disconnect the pipe rod or casing.	SBCBT: crew can be struck by pipe coming off drill head. Rotation is a hazard.	Stay clear of rotation and lifting lines and appliances. When pipe is loose, balance and manuever away from the spindle while crane operator moves crane back away from spindle.
Tilt head in.	SB/CBT: crew can be struck head moving in	Do not tilt until crew, pipe and crane are clear of yellow area. Stay clear of head movement path. Driller must be sure path of travel is clear before tilting head. Do not rotate.
Lower head and casing into wrenches.	CBT/SB: crew can be pinned or struck by head movement and sprocket chain movement.	Stay clear of all movement areas. Driller should not lower until areas are all clear.
Close wrench jaws to grip rod for tightening.	CBT: pinch points	Driller must be sure area is clear before starting wrench operation.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Tower/Mast Down | Date: 9/1/99 | New: | JSA#: S-050

Equipment Type: Drill Rig | Employee(s) Observed: Driller - Assistant | Revised: D. Schoen | BLA# |

BLA Division: Sonic Drilling | Reviewed By: | Analysis Made By: | Risk Level: 2

Notes: All peronnel within 35' must have proper PPE and must be alert and watch as tower is lowered. | Review Due:

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Unhook/free all winch cables and hooks/extend.	Struck against, contact by, caught in: Hand/finger injuries possible.	Wear proper PPE including gloves.
Remove safety pins and bolts.	Struck against, contact by, caught in: Hand/finger injuries possible.	Wear proper PPE including gloves. Use proper tools if needed.
Clear area, hoses, and equipment clear.	Fall-same level, struck against: Slip/trip/fall while moving around deck.	Proper PPE, use verbal and hand signals to clear area and be sure all hoses and cables are clear before lowering.
Lower tower or mast.	Struck by, caught between, caught in, contact by: Falling objects, snagged equipment or hoses, pinch or pin in moving parts between tower and rig.	Guide cables, everyone must be alert and watch tower lowering, guide tower in equipment into parked position. BE SURE STABILIZERS ARE DOWN AND STABLE.

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Boart Longyear Job Safety Analysis Form

Job or Operation: Tube Removal - Split Core Barrel
Date: 6/1/03
New:
JSA#: S-051
Equipment Type: CTS-150 Compact Track Sonic
Employee(s) Observed: Driller - Assistant
Revised: D. Schoen
BLA#
BLA Division: Sonic Drilling
Reviewed By:
Analysis Made By:
Risk Level: 2
Notes:
Review Due:
Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Break all joints of split barrel	CW/CB: Rotation hazard, wrench pin or pinch hazard.	Stay clear of wrench, wear proper PPE including gloves. Stay clear of rotating barrel.
Raise head and split barrel-No rotation	CBT/SB: Pin or pinch between head and tower, sprocket, chains or cables.	Stay clear of travel and head. Stay clear of sprockets chains or cables.
Tilt head out - No Rotation	SB: Split barrel can strike people on deck.	Stay clear of swing out travel. Stay out of yellow zone.
Assistant grips split barrel to remove while the driller starts low torque/speed rotation.	CO/OE/FS: Rotation hazard, lifting hazard, slip-trip-fall hazard, burrs may be present.	Use correct lifting, keep deck clear, keep hands out of barrel end. Use good communication and eye contact durring task.

Job or Operation: Tube Removal - Split Core Barrel Date: 6/1/03 New: JSA#: S-051

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Driller starts rotation	CO/CW: Rotation hazard, burrs possible, careful not to loose grip and drop barrel.	Driller stays at the controls. Uses slow rotation. Keep hands out of inside of barrel.
Rotation stopped. Head raised up, tilted in.	CB/SB/CBT: Head or barrel can strike assistant. Assistant can be caught between head, barrel, and tower.	Stay clear of yellow zone. Driller must watch that area is all clear.
Head and split barrel are lowered into wrenched for tightening and connection.	CBT/SB: Individuals can be caught between head and tower, chain, sprocket, cables, or struck by head movement.	Stay clear of travel. Keep hands away from chains, sprockets or cables.

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

Boart Longyear Job Safety Analysis Form

Job or Operation: Unthreading a Cross thread | Date: April 19, 2007 | New : Yes | JSA#: S-052

Equipment Type: Long Stroke Sonic Drill | Operator: | Revised: | BLA#

Boart Longyear Division: Boart Longyear E & I | Reviewed By: Daniel Casey | Analysis: Phillip Cramer

Notes:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
A) If the joint is between upper and lower wrenches proceed to step C, if not go to step B.	CW, FB	Always make sure deck is clear of trip hazards and employees out of "no fly zone"
B) With upward tension high touque drill head into upper joint of pipe. If this dose not release the cross threaded joint it will ensure that you will be able to lower the joint to position it between the upper and lower wrenches without dropping the string.	CO, CW, SB	Driller - Keep area neer wrenches clear of personel.
B) Lower joint into position between upper and lower wrenches and proced to step C.	CO, CW, SB	Driller - Keep area neer wrenches clear of personel.
C) Close both upper & lower wrenches	CI, CBT As wrenches close caught in and or caught between the wrench jaws and the drill pipe	Driller - Keep area neer wrenches clear of personel.

Job or Operation: Unthreading a Cross thread Date: April 19, 2007 New : Yes JSA#: S-052

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
C) Rotate Upper wrench counter clockwise	SB, SA, CB, CW As top wrench turns struck by, struck against, contact by, contact with upper wrench assembly while turning	Have wrench area clear of employees and tooling
C) Open Top Wrench	CI, CBT As top wrench opens caught in the wrench assembly or caught in between wrench jaw and wrench table	Driller - Keep area neer wrenches clear of personel.
C) Rotate Drill Pipe counter clockwise	SB, CB, CW, CO	Have Rotation guard in place-No employee in "no fly zone".

Boart Longyear Job Safety Analysis Form

Job or Operation: Pipe Wrench Use | Date: 11/14/98 | New: ***no*** | JSA#: S-053

Equipment Type: Drills & Other | Employee(s) Observed: Helper / Driller | Revised: | BLA#

BLA Division: Support | Reviewed By: Jeff Goff | Analysis Made By: Denny Robblee | Risk Level:

Notes: | Review Due:

Required PPE: Safety Glasses, Steel Toes, Gloves, Hard Hat

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
1) Inspect Wrench	Caught between, pinch between wrench and other objects.	Check for cracks, burrs, worn/dirty jaws. Repair/replace as necessary. Do not use defective wrenches.
2) Inspect Work Area	Fall-same level, slip/trip hazards.	Keep work area as free of extraneous objects as possible. Clean up wet, oily, muddy spots if possible.
3) Using Wrench	Fall-same level, loss of balance or slip. Struck against/struck by wrench if it slips. Caught between wrench handle and other objects.	Try to always pull on the wrench; avoid pushing. Make sure you have a good grip; and that the wrench is properly adjusted for the pipe/fitting being worked on. Keep one hand on the wrench jaw, and try not to close fingers tightly around handle of wrench. Keep proper footing and balance.

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Boart Longyear Job Safety Analysis Form

Job or Operation:	Stacking Rods/Casing	Date:	10/15/07	New:		JSA#:	S-054
Equipment Type:	Drills	Employee(s) Observed:	Driller/Helper	Revised:	X	BLA#	L-117
BLA Division:	Support	Reviewed By:	D Schoen	Analysis Made By:		Risk Level:	
Notes:	Acceptable methods for tiedown assemblies consist of chains, wire rope, steel strapping, synthetic webbing and cordage.			Review Due:			

Required PPE:

Sequence of Basic Job Steps	Potential Hazards Unsafe Acts or Conditions	Recommended Safe Job Procedure
Inspect area and equipment to be used.	CW, FS: Fall-same level, slip/trip hazards.	Watch your footing and remove rocks or other objects that create trip hazards. Make sure that the area is as level as possible. If using a crane, check for powerlines.
Stack the rods/casing. (Flat Bed Truck)	SB, CBT, OE: Caught between pipe, rods, blocking, other objects. Struck by pipe, rods, equipment, tackle, hammer. Overexertion, lifting	Watch body position and hand placement. Rows that are placed on 4x4's must be chocked using plastic pipe chocks or designed wood blocks and nails. (ROCKS ARE NOT ACCEPTABLE TO CHOCK PIPES) Make sure no one is standing behind the stack when placing pipe/rods onto the stack. If rods/pipe need to be rolled, use a tool such as a crane stake, rather than hands. Make sure everyone involved knows and understands the hand signals to be used. If applicable, use a tag line to help steady the suspended load(s). **Flatbed trucks with a headerboard and the weight of the load is more than 1,100 pounds, must have a tie down for every 5 Feet (1.52 meters)**
Stack the rods/casing. (Cradle or Pipe rack)	SB, CBT, OE: Caught between pipe, rods, blocking, other objects. Struck by pipe, rods, equipment, tackle, hammer. Overexertion, lifting	Watch body position and hand placement when loading rods/casing into cradle area. Ensure bottom row is flat to provide a sturdy base. Ensure all additional rods/casing is stacked eveny in cradle area. When loading, do not position hands below pipe at any time.
Secure load with strap or other acceptable methods.	SB, CB, CW: One could get hit by tossing straps over load. Pinch fingers when securing load.	**DO NOT TOSS STRAPS OVER THE TOP OF LOAD WITH KNOWING AREA IS CLEAR**. Physically walk around to ensure no one is on the receiving side. Call out "Clear" prior to tossing strap over. Keep fingers clear of strap when tightening load.

Job or Operation: Stacking Rods/Casing Date: 10/15/07 New: JSA#: S-054

1. Struck By (SB)
2. Struck Against (SA)
3. Contacted By (CB)
4. Contact With (CW)
5. Caught On (CO)
6. Caught IN (CI)
7. Caught Between (CBT)
8. Fall - Same Level (FS)
9. Fall to Below (FB)
10. Overexertion (OE)
11. Exposure (E)

APPENDIX C

ELECTRONIC DATA RECORD SEARCH
(PROVIDED ON THE CD-ROM)

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TRACK ➤ INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property: PRELIMINARY SITE ASSESSMENT

NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

Job Number: 101003-02

PREPARED FOR:

Accord Engineering, Inc.

6050 Santo Road, Suite 175

San Diego, CA 92124

858-771-3588

11-12-10

Tel: (866) 664-9981 *Fax: (818) 249-4227*

Environmental FirstSearch
Site Information Report

Request Date:	11-12-10	**Search Type:**	COORD
Requestor Name:	Accord Engineering - Chen	**Job Number:**	101003-02
Standard:	ASTM-05	**Filtered Report**	

Target Site: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

Demographics

Sites:	351	**Non-Geocoded:**	45	**Population:**	NA
Radon:	NA				

Site Location

	Degrees (Decimal)	**Degrees (Min/Sec)**		**UTMs**
Longitude:	-118.043525	-118:2:37	**Easting:**	403335.783
Latitude:	33.739901	33:44:24	**Northing:**	3733612.674
Elevation:	13		**Zone:**	11

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
92647	HUNTINGTON BEACH	CA	0.32 NE	Y
92649	HUNTINGTON BEACH	CA	0.11 NE	Y
92683	WESTMINSTER	CA	0.73 NE	Y

Services:

	Requested?	Date
Fire Insurance Maps	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Search Summary Report

Target Site: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	10-21-10	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	10-21-10	1.00	0	0	0	0	0	0	0
CERCLIS	Y	08-31-10	1.00	0	0	0	0	1	0	1
NFRAP	Y	08-31-10	1.00	0	0	0	1	1	0	2
RCRA COR ACT	Y	09-14-10	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	09-14-10	1.00	0	0	0	0	0	0	0
RCRA GEN	Y	09-14-10	1.00	0	0	3	12	85	1	101
RCRA NLR	Y	09-14-10	1.00	0	0	1	1	10	0	12
Federal Brownfield	Y	10-01-10	1.00	0	0	0	0	0	0	0
ERNS	Y	10-21-10	1.00	0	0	0	21	13	18	52
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	4	4
State/Tribal Sites	Y	08-04-10	1.00	0	0	0	1	1	1	3
State Spills 90	Y	10-13-10	1.00	0	0	0	1	5	0	6
State/Tribal SWL	Y	09-29-10	1.00	0	0	0	0	0	3	3
State/Tribal LUST	Y	10-13-10	1.00	0	0	0	4	11	13	28
State/Tribal UST/AST	Y	10-27-10	1.00	0	0	0	2	15	2	19
State/Tribal EC	Y	NA	1.00	0	0	0	0	0	0	0
State/Tribal IC	Y	08-04-10	1.00	0	0	0	0	0	0	0
State/Tribal VCP	Y	08-04-10	1.00	0	0	0	0	0	0	0
State/Tribal Brownfields	Y	NA	1.00	0	0	0	0	0	0	0
State Permits	Y	10-13-10	1.00	0	0	0	0	0	0	0
State Other	Y	08-04-10	1.00	0	0	0	2	11	1	14
FI Map Coverage	Y	08-23-10	0.12	0	0	-	-	-	0	0
Federal IC/EC	Y	11-04-10	1.00	0	0	0	0	0	0	0
HW Manifest	Y	08-02-10	1.00	0	1	5	24	74	2	106
- TOTALS -				0	1	9	69	227	45	351

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

HISTORICAL FIRE INSURANCE MAPS

NO MAPS AVAILABLE

11-12-10
101003-02
NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

A search of FirstSearch Technology Corporation's proprietary database of historical fire insurance map availability confirmed that there are NO MAPS AVAILABLE for the Subject Location as shown above.

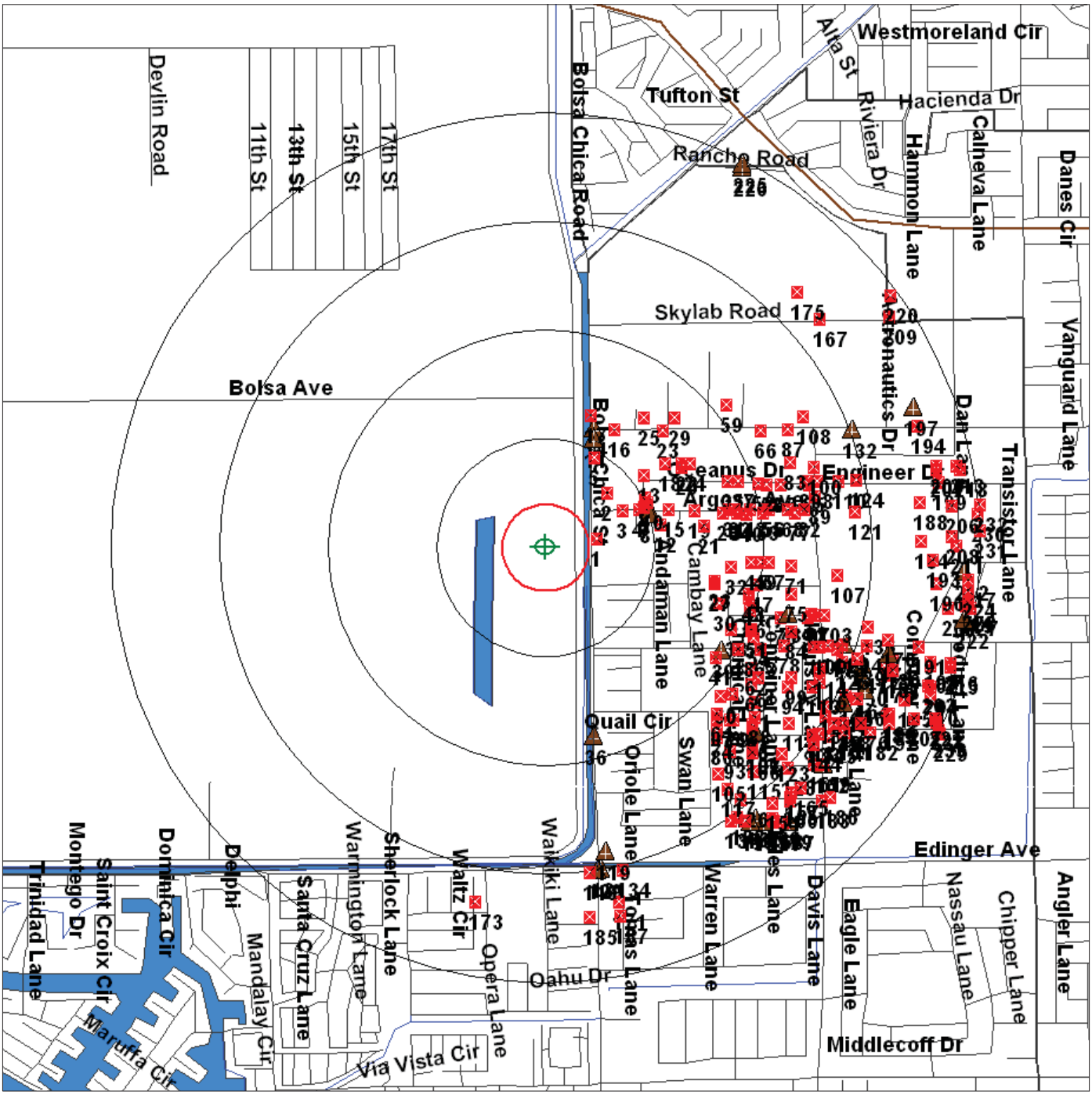
FirstSearch Technology Corporation's proprietary database of historical fire insurance map availability represents abstracted information from the Sanborn® Map Company obtained through online access to the U.S. Library of Congress via local libraries.

Environmental FirstSearch

1 Mile Radius

Single Map:

NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH, SEAL BEACH



Source: U.S. Census TIGER Files

Target Site (Latitude: 33.739901 Longitude: -118.043525) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

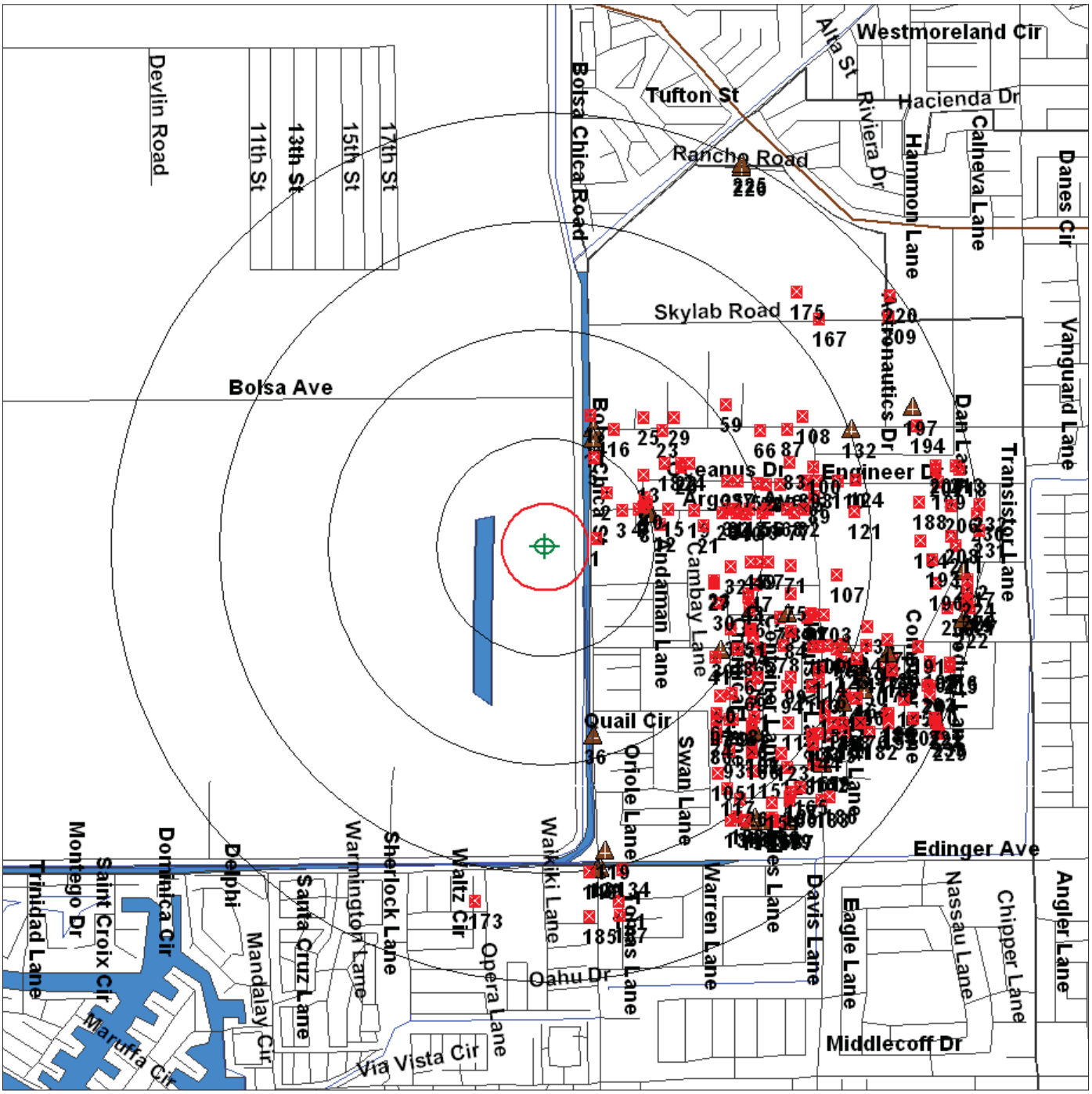
Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

1 Mile Radius

ASTM-05: Multiple Databases

NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH, SEAL BEACH



Source: U.S. Census TIGER Files

Target Site (Latitude: 33.739901 Longitude: -118.043525) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
HWMANIFEST	*GREAT WESTERN GRINDING INC CAL000080937/ACTIVE*	*15292 BOLSA CHICA RD HUNTINGTON BEA CA 92649*	*0.12 NE*	*- 10*	*1*	*2*
RCRANLR	*VEE IMPORT DOC CAD983597048/NLR*	*15182 BOLSA CHICA ST HUNTINGTON BEA CA 92649*	*0.19 NE*	*- 2*	*2*	*3*
HWMANIFEST	*LIFECOM CAL000275931/ACTIVE*	*5081 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.20 NE*	*0*	*3*	*4*
RCRAGN	*WESTERN ASSEMBLY INC CAD982520264/SGN*	*5081 ARGOSY DR HUNTINGTON BEA CA 92649*	*0.23 NE*	*+ 1*	*4*	*4*
HWMANIFEST	*COLOR ZONE DESIGNS CAL000312678/ACTIVE*	*15102 BOLSA CHICA STE ST HUNTINGTON BEA CA 92649*	*0.24 NE*	*- 6*	*5*	*5*
HWMANIFEST	*TRITON ENGINEERING CAL000167675/ACTIVE*	*15201 TRITON LANE HUNTINGTON BEA CA 92649*	*0.24 NE*	*+ 1*	*6*	*7*
RCRAGN	*HART TOOL CO CAR000011791/SGN*	*5111 ARGOSY DR HUNTINGTON BEA CA 92649*	*0.25 NE*	*+ 2*	*7*	*8*
RCRAGN	*INDUCTION HEAT TREAT INC CAR000095711/SGN*	*5111 ARGOSY DR HUNTINGTON BEA CA 92649*	*0.25 NE*	*+ 2*	*7*	*9*
HWMANIFEST	*PACIFIC LITHO INC CAL000330945/ACTIVE*	*5142 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.25 NE*	*+ 2*	*8*	*10*
HWMANIFEST	*NRN DESIGNS CORPORATION CAL000144931/ACTIVE*	*5142 ARGOSY HUNTINGTON BEA CA 92649*	*0.25 NE*	*+ 2*	*8*	*12*
ERNS	*PHYSICIAN S REFERENCE LAB 185842/FIXED FACILITY*	*15162 TRITON HUNTINGTON BEA CA 92649*	*0.26 NE*	*+ 2*	*9*	*13*
HWMANIFEST	*SCREEN ART INC CAL000318896/ACTIVE*	*15192 TRITON LANE HUNTINGTON BEA CA 92649*	*0.26 NE*	*+ 2*	*10*	*13*
RCRAGN	*STORK MMA LABORTORIES INC. CAL000100834/LGN*	*15062 BOLSA CHICA ST HUNTINGTON BEA CA 92649*	*0.27 NE*	*- 6*	*11*	*14*
HWMANIFEST	*STORK - MMA LABORATORIES INC CAL000100834/ACTIVE*	*15062 BOLSA CHICA HUNTINGTON BEA CA 92649*	*0.27 NE*	*- 6*	*11*	*16*
RCRAGN	*THE LUDLOW COMPANY L P CAR000086173/SGN*	*15272 JASON CIR HUNTINGTON BEA CA 92649*	*0.27 NE*	*+ 1*	*12*	*17*
HWMANIFEST	*OTTEN VALLOT and CO CAL000152912/ACTIVE*	*15131 TRITON 117 LANE HUNTINGTON BEA CA 92649*	*0.28 NE*	*+ 3*	*13*	*19*
UST	*MC DONNELL DOUGLAS SPACE SYS C TISID-STATE32761/ACTIVE*	*5301 BOLSA HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*20*
LUST	*BOEING T0605926872/COMPLETED - CASE CLO*	*5301 BOLSA HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*22*
ERNS	*MCDONNELL DOUGLAS AEROSPACE 415826/FIXED FACILITY*	*5301 BOLSA AVE HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*23*
ERNS	*MCDONNELL-DOUGLAS (ROBINSON) 167185/FIXED FACILITY*	*5301 BOLSA AVE HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*24*
ERNS	*MCDONNELL DOUGLAS AERO 489920/FIXED FACILITY*	*5301 BOLSA AVE HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*25*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
LUST	*BOEING (FORMER MCDONNELL DOUGL* *T0605900184/OPEN - REMEDIATION*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*27*
LUST	*BOEING COMPANY-BUILDING 37* *T0605962396/COMPLETED - CASE CLO*	*5301 BOLSA* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*32*
ERNS	*MCDONNELL DOUGLAS* *228932/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*33*
ERNS	*MCDONNELL DOUGLAS* *329474/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*34*
ERNS	*MCDONNELL DOUGLAS* *228937/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*36*
ERNS	*MCDONNELL DOUGLAS* *224440/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*38*
NFRAP	*MCDONNELL DOUGLAS CORP* *CAD008384588/NFRAP-N*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*39*
ERNS	*MCDONNELL DOUGLAS* *224439/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*41*
ERNS	*NRC-595953/FIXED*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*43*
ERNS	*MCDONALD DOUGLAS/T ROBINSON* *131415/UNKNOWN*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*45*
ERNS	*AEROSPACE MANUFACTURING FACILI* *NRC-569568/FIXED*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*47*
ERNS	*MCDONALD DOUGLAS SPACE SYSTEM* *260986/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*50*
ERNS	*MCDONALD DOUGLAS SPACE SY* *465939/FIXED FACILITY*	*5301 BOSLA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*51*
ERNS	*MCDONALD DOUGLAS HAZMAT* *513085/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*52*
ERNS	*MCDONALD DOUGLAS AEROSPACE* *513488/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92642*	*0.30 NE*	*- 5*	*14*	*52*
ERNS	*MCDONNELL DOUGLAS AERO.* *293668/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*53*
STATE	*MCDONNELL DOUGLAS ASTRONAUTICS* *CAL30370194/PROPERTY/SITE REFERR*	*5301 BOLSA* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*55*
UST	*THE BOEING COMPANY-SPACE AND C* *TISID4ORCO327/NOT REPORTED*	*5301 BOLSA AVE* *HUNTINGTON BEA CA*	*0.30 NE*	*- 5*	*14*	*59*
OTHER	*MCDONNELL DOUGLAS ASTRONAUTICS* *CAL30370194/REFER: OTHER AGENCY*	*5301 BOLSA* *HUNTINGTON BEA CA 92649*	*0.30 NE*	*- 5*	*14*	*61*
ERNS	*BOEING ACFT COMPANY* *573956/FIXED FACILITY*	*5301 BOLSA AVE* *HUNTINGTON BCH CA 92647*	*0.30 NE*	*- 5*	*14*	*62*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
ERNS	*NRC-577679/FIXED*	*5301 BOLSA AVE HUNTINGTON BEA CA 92647*	*0.30 NE*	*- 5*	*14*	*64*
HWMANIFEST	*HARRIS INDUSTRIES, INC CAL000159089/ACTIVE*	*5181 ARGOSY HUNTINGTON BEA CA 92649*	*0.30 NE*	*+ 2*	*15*	*67*
RCRAGN	*THE BOEING COMPANY CAD008384588/LGN*	*5301 BOLSA AVE HUNTINGTON BEA CA 92649*	*0.32 NE*	*+ 3*	*16*	*69*
HWMANIFEST	*WORKMAN AUTOMOTIVE CAL000182498/ACTIVE*	*15000 BOLSA CHICA UNIT ROAD SEAL BEACH CA 90740*	*0.32 NE*	*- 2*	*17*	*71*
HWMANIFEST	*I D TECHNOLOGY CORP INC CAL000276148/ACTIVE*	*5151 OCEANUS STE 102 DR HUNTINGTON BEA CA 92649*	*0.34 NE*	*+ 3*	*18*	*72*
RCRAGN	*CALIFORNIA FAUCETS CAR000122747/LGN*	*5231 ARGOSY DR HUNTINGTON BEA CA 92649*	*0.35 NE*	*+ 3*	*19*	*74*
HWMANIFEST	*VEOLIA ES TECHNICAL SOLUTIONS CAL000209382/ACTIVE*	*5202 OCEANUS DR HUNTINGTON BEA CA 92649*	*0.36 NE*	*+ 3*	*20*	*76*
RCRAGN	*DOUGLAS AIRCRAFT CO B-220 CAD982402539/SGN*	*15282 NEWSBOY CIRCLE HUNTIGTON BEAC CA 92649*	*0.37 NE*	*+ 3*	*21*	*77*
HWMANIFEST	*TRI MODELS INC CAL000159907/ACTIVE*	*5191 OCEANUS DR HUNTINGTON BEA CA 92649*	*0.37 NE*	*+ 3*	*22*	*79*
ERNS	*STELLICKT 259059/UNKNOWN (NRC)*	*5500 BOLSA HUNTINGTON BEA CA 92649*	*0.38 NE*	*+ 3*	*23*	*81*
HWMANIFEST	*COAST AEROSPACE MANUFACTURING CAL000309428/ACTIVE*	*5221 OCEANUS DR HUNTINGTON BEA CA 92649*	*0.38 NE*	*+ 3*	*24*	*82*
HWMANIFEST	*JEFF S PRESS INC CAL000106928/ACTIVE*	*5122 BOLSA 105 AVE HUNTINGTON BEA CA 92649*	*0.38 NE*	*+ 3*	*25*	*84*
HWMANIFEST	*COAST MOTOR WERK CAL000302811/ACTIVE*	*15385 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.40 SE*	*+ 1*	*26*	*85*
HWMANIFEST	*WCM MANUFACTURING CAL000326659/ACTIVE*	*15395 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.40 SE*	*+ 1*	*27*	*85*
RCRAGN	*RIMA ENTERPRISES INC CAD983583048/SGN*	*5340 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.42 NE*	*+ 3*	*28*	*86*
HWMANIFEST	*FAST FASTENERS CAL000329842/ACTIVE*	*5212 BOLSA STE AVE HUNTINGTON BEA CA 92649*	*0.42 NE*	*+ 3*	*29*	*87*
HWMANIFEST	*SIR MICHAELS CORP CAL000296796/ACTIVE*	*15442 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.42 SE*	*+ 1*	*30*	*87*
SPILLS	*CENTRILIFT, INC. SLC8_127/POST INVESTIGATION-R*	*5421 ARGOSY AVE HUNTINGTON BEA CA*	*0.43 NE*	*+ 3*	*31*	*87*
HWMANIFEST	*BLUE WHITE LTD CAL000237968/ACTIVE*	*5300 BUISNESS DR HUNTINGTON BEA CA 92649*	*0.43 SE*	*+ 2*	*32*	*89*
HWMANIFEST	*FIBREFORM ELECTRONICS INC CAD008256869/ACTIVE*	*5341 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.44 NE*	*+ 3*	*33*	*91*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
RCRAGN	*CandD PLASTICS (DIVISION OF Ca CAD983644428/SGN*	*5386 ARGOSY HUNTINGTON BEA CA 92649*	*0.45 NE*	*+ 3*	*34*	*92*
RCRAGN	*MAXELL CORP OF AMERICA CAD982504607/SGN*	*5191 OCEANUS DR HUNTINGTON BEA CA 92649*	*0.45 NE*	*+ 3*	*35*	*93*
OTHER	*VALLEY NORTH AMERICAN ORCO_GW_91UT111/NOT REPORTED*	*15752 BOLSA CHICA ST SEAL BEACH CA 90740*	*0.45 SE*	*- 5*	*36*	*94*
LUST	*VALLEY NORTH AMERICAN T0605901471/COMPLETED - CASE CLO*	*15752 BOLSA CHICA ST SEAL BEACH CA 90740*	*0.45 SE*	*- 5*	*36*	*95*
RCRAGN	*EXHIBIT PLACE THE CAD981384563/SGN*	*5221 OCEANUS DR HUNTINGTON BEA CA 92649*	*0.47 NE*	*+ 3*	*37*	*96*
ERNS	*AUTO TEST and DEVELOPMENT SVC 114460/UNKNOWN*	*15442 CHEMICAL LN HUNTINGTON BEA CA 92649*	*0.47 SE*	*+ 1*	*38*	*97*
HWMANIFEST	*3 D INSTRUMENTS INC CAD982328106/INACTIVE*	*15542 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.47 SE*	*0*	*39*	*99*
HWMANIFEST	*FOIL CORE INC CAL000286580/ACTIVE*	*15542 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.47 SE*	*0*	*39*	*100*
HWMANIFEST	*AAE AEROSPACE INC CAL000277800/ACTIVE*	*5382 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.47 NE*	*+ 3*	*40*	*100*
HWMANIFEST	*GANDT INDUSTRIES INC CAL000301933/ACTIVE*	*15551 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.47 SE*	*0*	*41*	*100*
RCRAGN	*CENTRILIFT HUGHES SVC CTR CAD981170160/SGN*	*5421 ARGOSY AVE HUNTINGTON BEA CA 92649*	*0.48 NE*	*+ 3*	*42*	*101*
HWMANIFEST	*BEACH CITY LIFT INC CAL000081769/ACTIVE*	*5361 COMMERCIAL DR HUNTINGTON BEA CA 92649*	*0.48 SE*	*+ 1*	*43*	*103*
HWMANIFEST	*CHIEF INDUSTRIES CAL000258172/ACTIVE*	*5362 COMMERCIAL DR HUNTINGTON BEA CA 92649*	*0.48 SE*	*+ 1*	*44*	*104*
HWMANIFEST	*WESTERN FORGE DIE CAL000046267/ACTIVE*	*5361 BUSINESS DR HUNTINGTON BEA CA 92649*	*0.48 SE*	*+ 3*	*45*	*106*
RCRAGN	*AUTOSEARCH WEST INC CAD983602376/SGN*	*15385 CHEMICAL LN HUNTINGTON BEA CA 92649*	*0.49 SE*	*+ 1*	*46*	*107*
RCRAGN	*BOBCAT INC CAD981426588/SGN*	*5261 BUSINESS DR HUNTINGTON BEA CA 92649*	*0.49 SE*	*+ 1*	*47*	*108*
RCRANLR	*MS BELLOWS CAD982021412/NLR*	*5322 MCFADDEN AVE HUNTINGTON BEA CA 92649*	*0.50 SE*	*+ 1*	*48*	*109*
HWMANIFEST	*NOTTHOFF ENGINEERING -LA-INC CAL000261823/INACTIVE*	*5381 BUSINESS DR HUNTINGTON BEA CA 92649*	*0.50 SE*	*+ 3*	*49*	*110*
RCRAGN	*JandR MICRO PARTS CAD981394380/SGN*	*15441 CHEMICAL LANE HUNTINGTON BEA CA 92649*	*0.51 SE*	*+ 1*	*50*	*110*
RCRAGN	*TECHNOLOGY IN HYDRAULIC ENG CA0000072777/SGN*	*15445 CHEMICAL LN HUNTINGTON BEA CA 92649*	*0.51 SE*	*+ 1*	*51*	*111*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
ERNS	*CALIFORNIA FAWCETS* *630631/FIXED FACILITY*	*5342 OCEANUS DR* *HUNTINGTON BEA CA 92649*	*0.51 NE*	*+ 3*	*52*	*112*
HWMANIFEST	*NOTTHOFF ENGINEERING-LA-INC* *CAL000276406/ACTIVE*	*5416 ARGOSY AVE* *HUNTINGTON BEA CA 92649*	*0.51 NE*	*+ 3*	*53*	*113*
RCRAGN	*MONEY MAILER INC* *CAD982505760/SGN*	*15472 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.52 SE*	*+ 1*	*54*	*113*
RCRAGN	*ZWICK ENERGY RESEARCH* *CAD983620808/SGN*	*5471 ARGOSY DR* *HUNTINGTON BEA CA 92649*	*0.52 NE*	*+ 3*	*55*	*114*
SPILLS	*CENTRILIFT* *G_SL188063852/OPEN - REMEDIATION*	*5421 ARGOSY AVE* *HUNTINGTON BEA CA 92648*	*0.52 NE*	*+ 3*	*56*	*115*
HWMANIFEST	*SMC* *CAL000122108/ACTIVE*	*5401 BUSINESS DR* *HUNTINGTON BEA CA 92649*	*0.52 SE*	*+ 3*	*57*	*117*
RCRAGN	*GENERAL ALUMINIUM FORGINGS INC* *CAD099160079/SGN*	*5302 OCEANUS DR* *HUNTINGTON BEA CA 92649*	*0.53 NE*	*+ 3*	*58*	*118*
ERNS	*MCDONALD DOUGLAS SPACE SY* *182420/FIXED FACILITY*	*5301 BOSLA AVE* *HUNTINGTON BEA CA*	*0.53 NE*	*+ 3*	*59*	*119*
HWMANIFEST	*OLIPHANT TOOL CO* *CAL000146007/ACTIVE*	*15652 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.53 SE*	*- 1*	*60*	*121*
RCRAGN	*ACPT* *CAR000058164/SGN*	*15602 CHEMICAL LN* *HUNTINGTON BEA CA 92649*	*0.54 SE*	*0*	*61*	*122*
RCRAGN	*FINISHLINE FINISHING* *CAD982487092/SGN*	*15541 CHEMICAL LN* *HUNTINGTON BEA CA 92649*	*0.55 SE*	*+ 1*	*62*	*123*
RCRAGN	*MS BELLOWS* *CAD982021412/SGN*	*5322 MCFADDEN AVE* *HUNTINGTON BEA CA 92649*	*0.55 SE*	*+ 1*	*63*	*124*
HWMANIFEST	*R and M MANUFACTURING INC* *CAL000286179/ACTIVE*	*15683 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.55 SE*	*- 1*	*64*	*125*
RCRAGN	*CALIFORNIA FAUCETS* *CAR000093450/SGN*	*5342 OCEANUS DR* *HUNTINGTON BEA CA 92649*	*0.56 NE*	*+ 3*	*65*	*125*
RCRAGN	*PACE INCORPORATED* *CAD982417081/SGN*	*5702 BOLSA CHICA AVE* *HUNTINGTON AVE CA 92649*	*0.56 NE*	*+ 3*	*66*	*126*
ERNS	*IN THE BACK OF THE BUILDING* *NRC-619744/FIXED*	*15697 CHEMICAL LANE* *HUNTINGTON BEA CA*	*0.56 SE*	*- 1*	*67*	*128*
HWMANIFEST	*ALL WEST PLASTICS INC* *CAL000258698/ACTIVE*	*5451 ARGOSY* *HUNTINGTON BEA CA 92649*	*0.56 NE*	*+ 3*	*68*	*130*
RCRAGN	*DEL CRAFT PLASTICS* *CAD981434541/SGN*	*15581 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.57 SE*	*+ 1*	*69*	*130*
RCRAGN	*SPEEDY CIRCUITS-A DIV. OF PJC* *CAD021221304/LGN*	*5332 COMMERCIAL DR* *HUNTINGTON BEA CA 92649*	*0.57 SE*	*+ 1*	*70*	*131*
HWMANIFEST	*PLASMA SYSTEMS INC* *CAL000275491/ACTIVE*	*5452 BUSINESS DR* *HUNTINGTON BEA CA 92649*	*0.57 SE*	*+ 2*	*71*	*132*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
HWMANIFEST	*PLASTIC CONCEPT INC* *CAL000298347/ACTIVE*	*15602 CONTAINER LANE* *HUNTINGTON BEA CA 92649*	*0.57 SE*	*+ 1*	*72*	*132*
UST	*GRANI INSTALLATION* *TISID-STATE34027/ACTIVE*	*5411 COMMERCIAL* *HUNTINGTON BEA CA 92649*	*0.58 SE*	*+ 1*	*73*	*133*
UST	*GRANI INSTALLATION* *TISID4ORCO350/NOT REPORTED*	*5411 COMMERCIAL DR* *HUNTINGTON BEA CA*	*0.58 SE*	*+ 1*	*73*	*133*
HWMANIFEST	*ALEXANDER S PRECISION MACHININ* *CAL000288692/ACTIVE*	*15731 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.58 SE*	*- 1*	*74*	*134*
HWMANIFEST	*DENNIS and SONS MACHINERY SALE* *CAL000308017/ACTIVE*	*5451 COMMERCIAL DR* *HUNTINGTON BEA CA 92649*	*0.58 SE*	*+ 1*	*75*	*134*
HWMANIFEST	*HYDROSPIN* *CAL000157478/ACTIVE*	*5281 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.58 SE*	*- 1*	*76*	*136*
HWMANIFEST	*S/R INDUSTRIES* *CAL000181927/ACTIVE*	*5482 ARGOSY DR* *HUNTINGTON BEA CA 92649*	*0.58 NE*	*+ 3*	*77*	*138*
RCRANLR	*SEVENSTRAND TACKLE CORP* *CAD981383292/NLR*	*5401 MCFADDEN AVE* *HUNTINGTON BEA CA 92649*	*0.59 SE*	*+ 1*	*78*	*139*
ERNS	*NRC-753680/STORAGE TANK*	*5281 RESEARCH DR* *HUNTINGTON CA 92649*	*0.59 SE*	*- 1*	*79*	*141*
SPILLS	*KAYMOR PLATING* *G_SLT8R0463931/COMPLETED - CASE CL*	*15751 CHEMICAL LANE* *HUNTINGTON BEA CA*	*0.59 SE*	*0*	*80*	*143*
RCRAGN	*AMERICAN EAGLE WHEEL CORP* *CAD981666738/SGN*	*15622 CHEMICAL LN* *HUNTINGTON BEA CA 92649*	*0.60 SE*	*0*	*81*	*144*
HWMANIFEST	*AERODYNE PRECISION MACHINING* *CAL000272145/ACTIVE*	*5471 ARGOSY AVE* *HUNTINGTON BEA CA 92649*	*0.60 NE*	*+ 3*	*82*	*145*
HWMANIFEST	*COASTWIDE MARKING SERVICES* *CAL000287575/ACTIVE*	*5445 OCEANUS STE 112 DR* *HUNTINGTON BEA CA 92649*	*0.60 NE*	*+ 3*	*83*	*145*
HWMANIFEST	*EVERLASTING GARDENS INC* *CAL000271517/ACTIVE*	*5452 MC FADDEN* *HUNTINGTON BEA CA 92649*	*0.60 SE*	*+ 2*	*84*	*145*
RCRAGN	*BROWNIE S CLEANERS* *CAD982461519/SGN*	*5422 OCEANUS DR* *HUNTINGTON BEA CA 92649*	*0.62 NE*	*+ 3*	*85*	*146*
RCRAGN	*METRI TECH INC* *CAD983666462/SGN*	*5411 OCEANUS DR* *HUNTINGTON BEA CA 92649*	*0.62 NE*	*+ 3*	*86*	*147*
UST	*KAISER / G T E* *TISID-STATE33740/ACTIVE*	*5832 BOLSA* *HUNTINGTON BEA CA 92649*	*0.62 NE*	*+ 3*	*87*	*148*
HWMANIFEST	*M J C ENGINEERING and TECHNOLO* *CAL000190523/ACTIVE*	*15701 CONTAINER LANE* *HUNTINGTON BEA CA 92649*	*0.62 SE*	*- 1*	*88*	*150*
RCRAGN	*PUBLISHERS PRESS* *CA0000070516/SGN*	*15121 GRAHAM NO 104* *HUNTINGTON BEA CA 92649*	*0.63 NE*	*+ 3*	*89*	*151*
RCRAGN	*ROCK INDUSTRIES INC* *CAD981455728/LGN*	*5402 COMMERCIAL DR* *HUNTINGTON BEA CA 92649*	*0.63 SE*	*+ 1*	*90*	*152*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
RCRAGN	*ROGERS MANUFACTURING INC* *CAD982403149/SGN*	*15675 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.63 SE*	*- 1*	*91*	*153*
RCRANLR	*LUSTRE-CAL NAMEPLATE CORP* *CAD981388283/NLR*	*5481A COMMERCIAL DR* *HUNTINGTON BEA CA 92649*	*0.63 SE*	*+ 1*	*92*	*154*
SPILLS	*KAYMOR PLATING* *SLC8_130/CLOSED*	*15751 CHEMICAL LANE* *HUNTINGTON BEA CA*	*0.63 SE*	*- 1*	*93*	*155*
RCRAGN	*CAL-AURUM INDUSTRIES* *CAT080031552/LGN*	*15632 CONTAINER LANE* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*0*	*94*	*156*
RCRAGN	*HONEMASTERS INC* *CAD983618281/SGN*	*15689 CHEMICAL LN* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*- 1*	*95*	*157*
RCRAGN	*HYDROSPIN* *CAR000181552/LGN*	*5281 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*0*	*96*	*158*
RCRAGN	*HYDROSPIN* *CAL000157478/SGN*	*5281 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*0*	*96*	*159*
RCRAGN	*HYDROSPIN* *CAR000161552/LGN*	*5281 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*0*	*96*	*160*
RCRAGN	*RAY FOSTER DENTAL EQUIP* *CA0000070532/SGN*	*5421 COMMERCIAL DR* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*+ 1*	*97*	*161*
RCRANLR	*BAKER SERVICE TOOLS* *CAD983619354/NLR*	*5501 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.64 NE*	*+ 3*	*98*	*162*
HWMANIFEST	*WELD-RITE INC* *CAL000325334/ACTIVE*	*15601 INDUSTRY LANE* *HUNTINGTON BEA CA 92649*	*0.64 SE*	*+ 1*	*99*	*163*
HWMANIFEST	*QUIKSILVER, INC* *CAL000267026/ACTIVE*	*15202 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.65 NE*	*+ 3*	*100*	*163*
RCRAGN	*CUSTOM EUROPEAN MTRS* *CAD983589060/SGN*	*15731 CHEMICAL* *HUNTINGTON BEA CA 92649*	*0.66 SE*	*- 1*	*101*	*164*
RCRAGN	*KAYS PRECISION MFG CORP* *CAD982013765/SGN*	*15721 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.66 SE*	*- 1*	*102*	*165*
RCRAGN	*SUNSHINE DESIGN* *CAD982443863/SGN*	*5451 COMMERCIAL* *HUNTINGTON BEA CA 92649*	*0.66 SE*	*+ 1*	*103*	*166*
RCRAGN	*TILCO ENGINEERING INC* *CAD983657586/SGN*	*5421 MCFADDEN AVE UNIT B* *HUNTINGTON BEA CA 92649*	*0.66 SE*	*+ 1*	*104*	*167*
HWMANIFEST	*SNOW and SNOW ENTERPRISES INC* *CAL000310141/ACTIVE*	*15841 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.66 SE*	*- 1*	*105*	*168*
RCRAGN	*SUMMIT STEEL* *CAD008391872/SGN*	*15751 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.67 SE*	*- 1*	*106*	*168*
RCRAGN	*THE BOEING CO. C-13 QUICK RESP* *CAR000112094/LGN*	*15400 GRAHAM ST STE 101* *HUNTINGTON BEA CA 92647*	*0.67 SE*	*+ 3*	*107*	*169*
HWMANIFEST	*HEWITT INDUSTRIES OF L.A.* *CAL000069659/ACTIVE*	*5492 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.67 NE*	*+ 5*	*108*	*171*

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Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

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TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
HWMANIFEST	*MICROFLEX TECHNOLOGIES LLC* *CAL000262533/ACTIVE*	*15538 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.67 SE*	*+ 1*	*109*	*172*
RCRAGN	*EXCEL INDUSTRIES* *CAD981668106/SGN*	*5531 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.69 NE*	*+ 3*	*110*	*172*
RCRAGN	*ULTRA TOOL INTERNATIONAL* *CAD981696487/SGN*	*5451 MCFADDEN AVE* *HUNTINGTON BEA CA 92649*	*0.69 SE*	*+ 1*	*111*	*173*
RCRANLR	*MOPARTS CORP* *CAD981651474/NLR*	*5382 REARCH DR* *HUNTINGTON BEA CA 92649*	*0.69 SE*	*- 1*	*112*	*174*
HWMANIFEST	*FACTORY WORKS* *CAL000254808/ACTIVE*	*15631 GRAHAM STE CandD ST* *HUNTINGTON BEA CA 92649*	*0.69 SE*	*+ 1*	*113*	*176*
HWMANIFEST	*HUNTINGTON BEACH HOGS and CHOP* *CAL000329250/ACTIVE*	*15588 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.69 SE*	*0*	*114*	*177*
RCRAGN	*CORTEC INC* *CAD981378177/SGN*	*15811 CHEMICAL LANE* *HUNTINGTON BEA CA 92649*	*0.70 SE*	*- 1*	*115*	*177*
HWMANIFEST	*EVOLUTION MOTORSPORTS INC DBA* *CAL000290537/ACTIVE*	*15608 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.70 SE*	*+ 1*	*116*	*178*
HWMANIFEST	*PAVCO INDUSTRIES INC* *CAL000191591/ACTIVE*	*5285 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.70 SE*	*- 1*	*117*	*180*
RCRAGN	*OPTO MECH INC* *CAD983661133/SGN*	*5484 MCFADDEN AVE* *HUNTINGTON BEA CA 92649*	*0.71 SE*	*+ 1*	*118*	*181*
HWMANIFEST	*CHEVRON 93060* *CAL000135810/ACTIVE*	*5002 EDINGER AVE* *HUNTINGTON BEA CA 92649*	*0.71 SE*	*- 4*	*119*	*183*
HWMANIFEST	*M K H PETROLEUM CORP* *CAL000219429/ACTIVE*	*5002 EDINGER AVE* *HUNTINGTON BEA CA 92649*	*0.71 SE*	*- 4*	*119*	*185*
RCRAGN	*AERODYNAMIC ENGINEERING INC* *CAD981169816/SGN*	*15495 GRAHAM* *HUNTINGTON BEA CA 92649*	*0.72 SE*	*+ 1*	*120*	*186*
RCRAGN	*MIDWEST AIR TECHNOLOGIES INC* *CAP000074559/SGN*	*5600 ARGOSY CIR UNIT 200* *HUNTINGTON BEA CA 92649*	*0.72 NE*	*+ 3*	*121*	*187*
LUST	*WEISER LOCK* *T0605900970/COMPLETED - CASE CLO*	*5555 MCFADDEN* *HUNTINGTON BEA CA 92649*	*0.72 SE*	*+ 1*	*122*	*188*
OTHER	*WEISER LOCK* *ORCO_GW_89UT87/NOT REPORTED*	*5555 MC FADDEN* *HUNTINGTON BEA CA 92649*	*0.72 SE*	*+ 1*	*122*	*189*
SPILLS	*WEISER LOCK* *SLC8_137/REMEDIATION*	*5555 MCFADDEN AVE* *HUNTINGTON BEA CA*	*0.72 SE*	*+ 1*	*122*	*189*
HWMANIFEST	*KEHOE TESTING and ENGINEERING* *CAL000322028/ACTIVE*	*5415 INDUSTRIAL DR* *HUNTINGTON BEA CA 92649*	*0.72 SE*	*- 1*	*123*	*190*
RCRAGN	*EBTEC CORP* *CAD981368814/SGN*	*5561 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.73 NE*	*+ 3*	*124*	*190*
RCRAGN	*SINA SCREEN PRINTING SHOP* *CAD983661125/SGN*	*15533 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.73 SE*	*+ 1*	*125*	*191*

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SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
RCRANLR	*AM AND ASSOCIATES INC* *CAD982470528/NLR*	*5312 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.73 SE*	*- 1*	*126*	*192*
RCRAGN	*WATER KEM LABORATORIES INC* *CAD982461733/SGN*	*15671 INDUSTRY LANE* *HUNTINGTON BEA CA 92649*	*0.74 SE*	*0*	*127*	*193*
RCRAGN	*SCREEN ART* *CAD983669417/SGN*	*5306 INDUSTRIAL DR* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*128*	*194*
RCRAGN	*SHELL SERVICE STATION* *CAR000086827/SGN*	*16001 BOLSA CHICA BLVD* *ORANGE CA 92649*	*0.75 SE*	*- 1*	*129*	*195*
LUST	*SHELL OIL* *T0605900283/OPEN - REMEDIATION*	*16001 BOLSA CHICA* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*129*	*197*
UST	*SHELL (3594-1206)* *TISID-STATE33479/ACTIVE*	*16001 BOLSA CHICA* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*129*	*200*
UST	*SHELL (135370)* *TISID4ORCO382/NOT REPORTED*	*16001 BOLSA CHICA ST* *HUNTINGTON BEA CA*	*0.75 SE*	*- 1*	*129*	*200*
OTHER	*SHELL OIL* *ORCO_GW_87UT143/NOT REPORTED*	*16001 BOLSA CHICA* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*129*	*201*
RCRAGN	*TIODIZE CO INC* *CAD042235226/SGN*	*15701 INDUSTRY LANE* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*0*	*130*	*202*
LUST	*CHEVRON 9-3069* *T0605902060/COMPLETED - CASE CLO*	*5002 EDINGER* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*131*	*204*
UST	*HUNTINGTON BEACH CHEVRON* *TISID-STATE32905/ACTIVE*	*5002 EDINGER* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*131*	*206*
OTHER	*CHEVRON STATION 9-3069* *ORCO_GW_97UT15/NOT REPORTED*	*5002 EDINGER AVE* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*- 1*	*131*	*206*
UST	*EDINGER MARKET AND GAS* *TISID4ORCO1043/NOT REPORTED*	*5002 EDINGER AVE* *HUNTINGTON BEA CA*	*0.75 SE*	*- 1*	*131*	*207*
UST	*AM/ PM OF HUNTINGTON BEACH* *TISID4ORCO318/NOT REPORTED*	*6002 BOLSA* *HUNTINGTON BEA CA*	*0.75 NE*	*+ 5*	*132*	*207*
UST	*AM/PM OF HUNTINGTON BEACH* *ORCOCOMP09122*	*6002 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.75 NE*	*+ 5*	*132*	*208*
UST	*ARCO OF HUNTINGTON BEACH (1989* *TISID-STATE33266/ACTIVE*	*6002 BOLSA* *HUNTINGTON BEA CA 92647*	*0.75 NE*	*+ 5*	*132*	*208*
OTHER	*HUNTUNGTON BEACH ARCO* *ORCO_GW_95UT5/NOT REPORTED*	*6002 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.75 NE*	*+ 5*	*132*	*209*
LUST	*HUNTINGTON BEACH ARCO* *T0605901827/OPEN - REMEDIATION*	*6002 BOLSA* *HUNTINGTON BEA CA 92647*	*0.75 NE*	*+ 5*	*132*	*211*
OTHER	*POLYMER DEVELOPMENT LABORATORY* *CAL30340281/REFER: EPA*	*15731 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.75 SE*	*0*	*133*	*214*
RCRAGN	*HUNTINGTON BEACH CHEVRON* *CAD983589177/SGN*	*5002 EDINGER* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*0*	*134*	*215*

Environmental FirstSearch
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Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
RCRANLR	*SCREEN SCENE* *CAD982443855/NLR*	*5542 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*- 1*	*135*	*216*
SPILLS	*WEISER LOCK - VES* *G_SL208053860/OPEN - REMEDIATION*	*5555 MCFADDEN AVE* *HUNTINGTON BEA CA*	*0.76 SE*	*+ 1*	*136*	*217*
HWMANIFEST	*CIRCUIT AUTOMATION* *CAL000323575/ACTIVE*	*5292 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*- 3*	*137*	*218*
HWMANIFEST	*FEDERAL EXPRESS CORPORATION* *CAL000005253/ACTIVE*	*5321 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*- 2*	*138*	*220*
HWMANIFEST	*HI-TECH PRODUCTION SERVICES IN* *CAL000286265/INACTIVE*	*15572 COMMERCE LANE* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*+ 1*	*139*	*221*
HWMANIFEST	*SEAGATE VETERINARY HOSPITAL* *CAL000091329/ACTIVE*	*16061 BOLSA CHICA ROAD* *HUNTINGTON BEA CA 92649*	*0.76 SE*	*- 2*	*140*	*223*
RCRAGN	*CARLSKIN MFG* *CAD983653692/SGN*	*15608 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.77 SE*	*+ 1*	*141*	*224*
RCRAGN	*WORKMAN AUTOMOTIVE* *CAD983584475/SGN*	*15631 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.77 SE*	*0*	*142*	*225*
RCRAGN	*PACIFIC PERFORMANCE* *CAD983593252/SGN*	*15631 GRAHAM UNIT C* *HUNTINGTON BEA CA 92649*	*0.77 SE*	*0*	*142*	*226*
RCRAGN	*WEISER LOCK* *CAD097578082/LGN*	*5555 MCFADDEN AVE* *HUNTINGTON BEA CA 92649*	*0.77 SE*	*+ 1*	*143*	*227*
HWMANIFEST	*CURLIN MEDICAL INC* *CAL000305741/ACTIVE*	*15751 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.77 SE*	*- 1*	*144*	*228*
RCRAGN	*FUSION INC* *CAD982343592/SGN*	*5402 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*- 1*	*145*	*228*
RCRAGN	*NDT INSTRUMENTS, INC* *CAD981458581/SGN*	*15622 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*+ 1*	*146*	*229*
LUST	*ENGARD COATINGS* *T0605901210/COMPLETED - CASE CLO*	*15541 COMMERCE* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*+ 1*	*147*	*231*
OTHER	*ENGARD COATINGS* *ORCO_GW_90UT19/NOT REPORTED*	*15541 COMMERCE LANE* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*+ 1*	*147*	*233*
HWMANIFEST	*KAESER COMPRESSORS INC* *CAL000284999/ACTIVE*	*5542 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*- 1*	*148*	*233*
HWMANIFEST	*SUMIT STEEL* *CAL000310706/ACTIVE*	*5332 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.78 SE*	*- 3*	*149*	*233*
UST	*VENUS LABS* *TISID-STATE33103/ACTIVE*	*15571 COMMERCE* *HUNTINGTON BEA CA*	*0.79 SE*	*+ 1*	*150*	*233*
LUST	*VENUS LABORATORIES* *T0605901513/OPEN - VERIFICATION*	*15571 COMMERCE LN* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*+ 1*	*150*	*235*
NFRAP	*STANDARD CHEMICAL* *CAD981622608/NFRAP-N*	*15571 COMMERCE LN* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*+ 1*	*150*	*238*

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Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
UST	*VENUS LABS* *TISID4ORCO395/NOT REPORTED*	*15571 COMMERCE LN* *HUNTINGTON BEA CA*	*0.79 SE*	*+ 1*	*150*	*238*
RCRAGN	*L B L CO* *CAD983654856/SGN*	*5395 INDUSTRIAL DR UNIT A* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 1*	*151*	*239*
LUST	*FEDERAL EXPRESS* *T0605901840/OPEN - SITE ASSESSME*	*5321 SYSTEM* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 2*	*152*	*241*
UST	*FEDERAL EXPRESS* *TISID-STATE32771/ACTIVE*	*5321 SYSTEM* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 2*	*152*	*243*
OTHER	*FEDERAL EXPRESS* *ORCO_GW_95UT4/NOT REPORTED*	*5321 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 2*	*152*	*243*
ERNS	*FEDERAL EXPRESS* *179315/FIXED FACILITY*	*5321 SYSTEMS DR* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 2*	*152*	*244*
UST	*M L BASHAW INC* *TISID-STATE33381/ACTIVE*	*5292 SYSTEM* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 3*	*153*	*245*
LUST	*SPEEDY CIRCUITS* *T0605902026/COMPLETED - CASE CLO*	*5292 SYSTEM* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 3*	*153*	*247*
OTHER	*SPEEDY CIRCYITS* *ORCO_GW_96UT51/NOT REPORTED*	*5292 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 3*	*153*	*248*
HWMANIFEST	*TERRY BROWNS MARINE SERVICE* *CAL000068172/ACTIVE*	*15886 MANUFACTURE LANE* *HUNTINGTON BEA CA 92649*	*0.79 SE*	*- 1*	*154*	*250*
ERNS	*ALLY PRODUCTIONS* *234530/FIXED FACILITY*	*5405 PRODUCTION LANE* *HUNTINGTON BEA CA 92649*	*0.80 SE*	*- 1*	*155*	*252*
HWMANIFEST	*CURLIN MEDICAL INC* *CAL000311932/ACTIVE*	*15662 COMMERCE LANE* *HUNTINGTON BEA CA 92649*	*0.80 SE*	*+ 1*	*156*	*253*
HWMANIFEST	*PRECISION FERRITES and CERAMIC* *CAL000138714/ACTIVE*	*5432 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.80 SE*	*- 1*	*157*	*255*
HWMANIFEST	*TIERRA VERDE LANDSCAPE INC* *CAL000069632/ACTIVE*	*5562 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.80 SE*	*- 1*	*158*	*257*
CERCLIS	*POLYMER DEVELOPMENT LABS 2* *CAD982360653/NOT PROPOSED*	*15731 GRAHAM AVE* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*159*	*258*
RCRAGN	*CURTIS PLASTICS* *CAD982018194/SGN*	*5332 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*160*	*259*
RCRAGN	*TURF VAC CORP* *CAD982041667/SGN*	*15701 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*161*	*260*
STATE	*POLYMER DEVELOPMENT LABORATORY* *CAL30340281/ACTIVE*	*15731 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*162*	*262*
RCRANLR	*BRAUN CORPORATION THE* *CAD981403991/NLR*	*15731 GRAHAM ST* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*162*	*263*
OTHER	*BEACH CITY LIFT* *ORCO_GW_91UT28/NOT REPORTED*	*5372 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 3*	*163*	*264*

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SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
LUST	*BEACH CITY LIFT* *T0605901345/COMPLETED - CASE CLO*	*5372 SYSTEM* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 3*	*163*	*266*
OTHER	*KOPPY INTERNATIONAL* *ORCO_GW_88UT190/NOT REPORTED*	*15602 COMMERCE LN* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*+ 1*	*164*	*267*
LUST	*KOPPY INTERNATIONAL* *T0605900660/COMPLETED - CASE CLO*	*15602 COMMERCE* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*+ 1*	*164*	*268*
HWMANIFEST	*EINMALIG* *CAL000153680/ACTIVE*	*5455 PRODUCTION LANE* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 1*	*165*	*270*
HWMANIFEST	*PRO FORK LIFT SERVICE INC* *CAL000317366/ACTIVE*	*5412 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.81 SE*	*- 2*	*166*	*271*
RCRAGN	*CAMBRO MFG CO* *CAR000190066/LGN*	*5801 SKYLAB RD* *HUNGTINGTON BE CA 92647*	*0.82 NE*	*+ 5*	*167*	*272*
RCRAGN	*NU-GRAPHICS MFG, INC* *CAD981391493/SGN*	*5312 SYSTEMS DR* *HUNTINGTON BEA CA 92649*	*0.82 SE*	*- 3*	*168*	*273*
RCRAGN	*SPEEDY CIRCUITS - FACILITY 2* *CAD076085125/LGN*	*5292 SYSTEM DR UNIT B* *HUNTINGTON BEA CA 92649*	*0.82 SE*	*- 3*	*169*	*274*
HWMANIFEST	*GandM MACHINE SHOP* *CAL000000906/ACTIVE*	*15531 COMPUTER LANE* *HUNTINGTON BEA CA 92649*	*0.82 SE*	*+ 1*	*170*	*276*
RCRAGN	*CLASSIC CLEANERS* *CAD981573843/SGN*	*16071 BOLSA CHICA* *HUNTINGTON BEA CA 92649*	*0.83 SE*	*- 1*	*171*	*277*
RCRAGN	*COATINGS RESOURCE CORPORATION* *CAD009556192/LGN*	*15541 COMMERCE LANE* *HUNTINGTON BEA CA 92649*	*0.83 SE*	*+ 1*	*172*	*278*
ERNS	*595660/FIXED FACILITY*	*16072 BALLAD LANE* *HUNTINGTON BEA CA 92649*	*0.83 SW*	*- 6*	*173*	*279*
HWMANIFEST	*KAWASAKI BOEKI INC* *CAL000252558/ACTIVE*	*15561 COMPUTER UNIT LANE* *HUNTINGTON BEA CA 92649*	*0.83 SE*	*+ 1*	*174*	*281*
HWMANIFEST	*CLARK S MARINE SERVICE* *CAL000294151/ACTIVE*	*15561 COMPUTER STE LANE* *HUNTINGTON BEA CA 92649*	*0.83 SE*	*+ 1*	*174*	*282*
HWMANIFEST	*HARDY FRAMES INC* *CAL000324416/ACTIVE*	*5511 SKYLAB ROAD* *HUNTINGTON BEA CA 92647*	*0.83 NE*	*+ 5*	*175*	*282*
HWMANIFEST	*UNITED FLIGHT ACCESSORIES OF C* *CAL000190838/ACTIVE*	*5602 RESEARCH UNIT DR* *HUNTINGTON BEA CA 92649*	*0.83 SE*	*- 1*	*176*	*284*
RCRAGN	*CALIFORNIA SHIRT PRINTER INC* *CAD981617780/SGN*	*5392 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.84 SE*	*- 3*	*177*	*285*
RCRAGN	*CALIF SHIRT PRINTER* *CAD981966963/SGN*	*5392 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.84 SE*	*- 3*	*177*	*286*
RCRAGN	*OCEANAIRE SPORTSWEAR INC* *CAD983583055/SGN*	*15562 COMMERCE LA* *HUNTINGTON BEA CA 92649*	*0.84 SE*	*+ 1*	*178*	*287*
RCRAGN	*PAUL PFAFF ENTERPRISES* *CA0000341313/SGN*	*5362 SYSTEM DR* *HUNTINGTON BEA CA 92649*	*0.84 SE*	*- 3*	*179*	*288*

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SEAL BEACH CA 90740

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HWMANIFEST	*AMERICAN SUSPENSION LLC* *CAL000304078/ACTIVE*	*15572 COMPUTER LANE* *HUNTINGTON BEA CA 92649*	*0.84 SE*	*+ 1*	*180*	*289*
HWMANIFEST	*OLIN ENGINEERING INC* *CAL000147121/ACTIVE*	*15592 COMPUTER LANE* *HUNTINGTON BEA CA 92649*	*0.85 SE*	*+ 1*	*181*	*291*
RCRAGN	*UNITED FLIGHT ACCESSORIES OF C* *CAR000196360/SGN*	*5602 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.86 SE*	*- 1*	*182*	*292*
RCRAGN	*US WHEEL CORP* *CA0001003359/SGN*	*5432 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.86 SE*	*- 1*	*183*	*293*
HWMANIFEST	*SIGNAL ENTERPRISE* *CAL000314728/ACTIVE*	*15319 PIPELINE LANE* *HUNTINGTON BEA CA 92649*	*0.86 NE*	*+ 3*	*184*	*294*
HWMANIFEST	*VINCENT THOMAS DDS* *CAL000105846/ACTIVE*	*16141 BOLSA CHICA ROAD* *HUNTINGTON BEA CA 92649*	*0.86 SE*	*- 3*	*185*	*296*
RCRAGN	*IVERPAC CORPORATION* *CAD982030256/SGN*	*5455 PRODUCTION DR* *HUNTINGTON BEA CA 92649*	*0.87 SE*	*- 1*	*186*	*297*
RCRAGN	*SEA GATE BAKERY* *CAD981997364/SGN*	*16107 BOLSA CHICA DR* *HUNTINGTON BEA CA 92649*	*0.87 SE*	*- 1*	*187*	*298*
HWMANIFEST	*FIBER SEAL OF LOS ANGELES INC* *CAL000307675/ACTIVE*	*15201 PIPELINE STE LANE* *HUNTINGTON BEA CA 92649*	*0.87 NE*	*+ 3*	*188*	*298*
RCRAGN	*SONIC JET PERFORMANCE INC* *CAR000052571/SGN*	*15662 COMMERCE LN* *HUNTINGTON BEA CA 92649*	*0.88 SE*	*+ 1*	*189*	*299*
HWMANIFEST	*RACE TRACK PISTONS INC* *CAL000312982/ACTIVE*	*15681 COMPUTER LANE* *HUNTINGTON BEA CA 92649*	*0.88 SE*	*0*	*190*	*300*
ERNS	*MARSECO* *268635/FIXED FACILITY*	*5742 MCFADDEN* *HUNTINGTON BEA CA 92649*	*0.89 SE*	*+ 1*	*191*	*302*
HWMANIFEST	*MIL SPEC HEAT TREATING INC.* *CAL000288334/ACTIVE*	*5662 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.89 SE*	*0*	*192*	*303*
HWMANIFEST	*STD WIRE PRODUCTS INC.* *CAL000252065/ACTIVE*	*5791 MACHINE DR* *HUNTINGTON BEA CA 92649*	*0.89 SE*	*+ 3*	*193*	*305*
RCRAGN	*BALL AEROSPACE SYS DIV MP* *CAD981457161/SGN*	*5252 BOLSA AVE* *HUNTINGTON BEA CA 92649*	*0.90 NE*	*+ 5*	*194*	*306*
RCRANLR	*MICA INDUSTRIES* *CAR000204867/NLR*	*15641 COMPUTER LN* *HUNTINGTON BEA CA 92649*	*0.90 SE*	*+ 1*	*195*	*307*
HWMANIFEST	*DEAD SLEDS CORPORATION* *CAL000319320/ACTIVE*	*15392 ASSEMBLY LANE* *HUNTINGTON BEA CA 92649*	*0.90 SE*	*+ 3*	*196*	*308*
HWMANIFEST	*C and D ZODIAC INC* *CAL000300057/ACTIVE*	*5701 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.91 NE*	*+ 5*	*197*	*308*
RCRAGN	*CandD ZODIAC - BOLSA* *CAL000300057/LGN*	*5701 BOLSA AVE* *HUNTINGTON BEA CA 92647*	*0.91 NE*	*+ 5*	*197*	*310*
RCRAGN	*B Z PRINTING* *CAD982508509/SGN*	*15532 COMPUTER LN* *HUNTINGTON BEA CA 92649*	*0.92 SE*	*+ 1*	*198*	*311*

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RCRAGN	*SAFE T JACK INC* *CAD983653148/SGN*	*5641 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.92 NE*	*+ 5*	*199*	*312*
HWMANIFEST	*PRECISION RESOURCE CAL DIVISIO* *CAL000204971/ACTIVE*	*5803 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.92 NE*	*+ 5*	*200*	*314*
HWMANIFEST	*UNITED CALIBRATION CORPORATION* *CAL000161867/ACTIVE*	*5802 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.92 NE*	*+ 5*	*201*	*316*
RCRAGN	*ERVINS AUTO* *CAD983592510/SGN*	*15542 COMPUTER LN STE C* *HUNTINGTON BEA CA 92649*	*0.93 SE*	*+ 1*	*202*	*317*
RCRAGN	*LASER JET PERFORMANCE* *CAD983666470/SGN*	*15591 COMPUTER LN* *HUNTINGTON BEA CA 92649*	*0.93 SE*	*+ 1*	*203*	*318*
RCRAGN	*M F G CONCEPTS INC* *CAD983672767/SGN*	*15592 COMPUTER LN* *HUNTINGTON BEA CA 92649*	*0.94 SE*	*+ 1*	*204*	*319*
RCRANLR	*HYPER CORP THE* *CAD983672643/NLR*	*15431 ELECTRONIC LN* *HUNTINGTON BEA CA 92649*	*0.94 SE*	*+ 3*	*205*	*320*
HWMANIFEST	*MILCO-WIRE EDM* *CAL000205107/ACTIVE*	*15221 CONNECTOR LANE* *HUNTINGTON BEA CA 92649*	*0.94 NE*	*+ 4*	*206*	*322*
HWMANIFEST	*TENSION MEMBER TECHNOLOGY* *CAL000282095/ACTIVE*	*5721 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.94 SE*	*+ 1*	*207*	*324*
HWMANIFEST	*THE DING KING TRAINING INSTITU* *CAL000330057/ACTIVE*	*15301 CONNECTOR LANE* *HUNTINGTON BEA CA 92649*	*0.94 NE*	*+ 3*	*208*	*325*
RCRAGN	*CLEVELAND GOLF CORP OFFICE* *CAR000157172/SGN*	*5601 SKYLAB RD* *HUNTINGTON BEA CA 92649*	*0.95 NE*	*+ 7*	*209*	*326*
RCRAGN	*GOLDENWEST CIRCUITS INC* *CA0001012384/SGN*	*15622 COMPUTER LN* *HUNTINGTON BEA CA 92649*	*0.95 SE*	*+ 1*	*210*	*327*
HWMANIFEST	*JE PISTONS INC* *CAL000196984/ACTIVE*	*15312 CONNECTOR LANE* *HUNTINGTON BEA CA 92649*	*0.95 NE*	*+ 3*	*211*	*329*
HWMANIFEST	*CIBA CORP DBA PIRA INTERNATION* *CAL000327657/ACTIVE*	*15361 ELECTRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.96 SE*	*+ 3*	*212*	*330*
HWMANIFEST	*LANSMONT WESTERN TECHNICAL SER* *CAL000318801/INACTIVE*	*15361 ELECTRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.96 SE*	*+ 3*	*212*	*330*
HWMANIFEST	*SANCON ENGINEERING INC* *CAL000156729/ACTIVE*	*5841 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.96 NE*	*+ 5*	*213*	*332*
RCRAGN	*BAKER OIL TOOLS* *CAR000035816/SGN*	*15421 ASSEMBLY LN* *HUNTINGTON BEA CA 92649*	*0.97 SE*	*+ 3*	*214*	*333*
RCRANLR	*HALO INDUSTRIES* *CAD983663097/NLR*	*15541 PRODUCT LN UNIT B* *HUNTINGTON BEA CA 92649*	*0.97 SE*	*+ 1*	*215*	*334*
ERNS	*SEIKO* *268628/FIXED FACILITY*	*15541 PRODUCT LANE* *HUNTINGTON BEA CA 92649*	*0.97 SE*	*+ 2*	*216*	*336*
HWMANIFEST	*DAVID PRUKOP S AUTO BODY and P* *CAL000173143/ACTIVE*	*15362 ELETRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.97 SE*	*+ 3*	*217*	*338*

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HWMANIFEST	*TIODIZE CO INC* *CAL000225226/ACTIVE*	*5858 ENGINEER DR* *HUNTINGTON BEA CA 92649*	*0.97 NE*	*+ 5*	*218*	*340*
RCRAGN	*HALO IND INC* *CAD982443848/SGN*	*15422 ASSEMBLY LN* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 3*	*219*	*341*
HWMANIFEST	*AIRTECH INTERNATIONAL INC* *CAL000170742/ACTIVE*	*5700 SKYLAB ROAD* *HUNTINGTON BEA CA 92647*	*0.98 NE*	*+ 7*	*220*	*343*
HWMANIFEST	*BARICO LIGHTING INC* *CAL000306218/ACTIVE*	*5761 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 1*	*221*	*344*
HWMANIFEST	*RODON PRODUCTS INC* *CAL000307654/ACTIVE*	*15481 ELECTRONIC STE LANE* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 2*	*222*	*344*
HWMANIFEST	*CONVERSION DEVICES INC* *CAL000068301/ACTIVE*	*15481 ELECTRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 2*	*222*	*346*
HWMANIFEST	*HQ MACHINE TECH INC* *CAL000290598/ACTIVE*	*15432 ELECTRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 2*	*223*	*347*
HWMANIFEST	*SENSONETICS INC* *CAL000289886/ACTIVE*	*15402 ELECTRONIC LANE* *HUNTINGTON BEA CA 92649*	*0.98 SE*	*+ 3*	*224*	*347*
RCRAGN	*MC DONNELL DOUGLAS* *CAP000065474/SGN*	*5212 RANCHO RD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*225*	*348*
RCRAGN	*DUKE SOLUTIONS HUNTINGTON BEAC* *CAT000623975/SGN*	*5212 RANCHO RD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*225*	*349*
ERNS	*CENTRAL PLANTS* *646741/FIXED FACILITY*	*5212 RANCHO RD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*225*	*350*
HWMANIFEST	*AMERESCO HUNTINGTON BEACH LLC* *CAL000289261/ACTIVE*	*5212 RANCHO ROAD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*225*	*351*
RCRAGN	*MC DONNELL DOUGLAS* *CAR000083113/SGN*	*5212 RANCHO RD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*225*	*351*
UST	*CENTRAL PLANTS INC* *TISID-STATE32778/ACTIVE*	*5223 RANCHO* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*226*	*352*
ERNS	*CENTRAL PLANTS INC.* *415925/FIXED FACILITY*	*5223 RANCHO RD* *HUNTINGTON BEA CA*	*0.99 NE*	*+ 6*	*226*	*352*
LUST	*CENTRAL PLANTS* *T0605901042/COMPLETED - CASE CLO*	*5223 RANCHO* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*226*	*354*
ERNS	*CENTRAL ,PLANTS INC* *415058/FIXED FACILITY*	*5223 RANCHO RD* *HUNTINGTON BEA CA*	*0.99 NE*	*+ 6*	*226*	*355*
OTHER	*CENTRAL PLANTS* *ORCO_GW_89UT223/NOT REPORTED*	*5223 RANCHO RD* *HUNTINGTON BEA CA 92647*	*0.99 NE*	*+ 6*	*226*	*355*
ERNS	*434661/FIXED FACILITY*	*15431 ELECTRIC LANE* *HUNTINGTON BEA CA*	*0.99 SE*	*+ 3*	*227*	*356*
HWMANIFEST	*VandS ENGINEERING* *CAL000290320/ACTIVE*	*5766 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*0.99 SE*	*0*	*228*	*356*

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RCRAGN	*BINGHAM DIV OF BFI* *CAD073575094/VGN*	*5722 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*1.00 SE*	*0*	*229*	*357*
RCRAGN	*C and C BOATS INC* *CAD028406072/TRANSPORTER*	*15201 PIPELINE LANE* *HUNTINGTON BEA CA 92649*	*1.00 NE*	*+ 4*	*230*	*358*
RCRAGN	*EINMALIG L T D* *CAD983599473/SGN*	*15335 PIPELINE LN* *HUNTINGTON BEA CA 92649*	*1.00 NE*	*+ 3*	*231*	*359*
RCRAGN	*P W STEPHENS ENVIRONMENTAL INC* *CAR000050815/TRANSPORTER*	*15201 PIPELINE LN STE B* *HUNTINGTON BEA CA 92649*	*1.00 NE*	*+ 4*	*232*	*360*
RCRAGN	*PHOTO TEMPLATE CORP* *CAD059784645/SGN*	*5721 RESEARCH DR* *HUNTINGTON BEA CA 92649*	*1.00 SE*	*0*	*233*	*361*

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DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100353900*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*362*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100354000*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*363*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100354100*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*364*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100350800*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*365*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100352400*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*366*
TRIBALLAND	*BUREAU OF INDIAN AFFAIRS CONTA* *BIA-92649*	*UNKNOWN* *CA 92649*	*NON GC*	*N/A*		*367*
ERNS	*US NAVY* *547992/FIXED FACILITY*	*UNKNOWN* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*368*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100355800/CASE CLOSED*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*369*
TRIBALLAND	*BUREAU OF INDIAN AFFAIRS CONTA* *BIA-92683*	*UNKNOWN* *CA 92683*	*NON GC*	*N/A*		*370*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100352200*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*371*
TRIBALLAND	*BUREAU OF INDIAN AFFAIRS CONTA* *BIA-92647*	*UNKNOWN* *CA 92647*	*NON GC*	*N/A*		*372*
TRIBALLAND	*BUREAU OF INDIAN AFFAIRS CONTA* *BIA-90740*	*UNKNOWN* *CA 90740*	*NON GC*	*N/A*		*372*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100350700/CASE CLOSED*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*373*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100350500/CASE CLOSED*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*374*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100379100/POST REMEDIAL ACTION*	*KITTS HIGHWAY* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*375*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100355900*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*376*
LUST	*US NAVAL WEAPONS STATION SEAL* *DOD100378900*	*US NAVAL WEAPONS STATION SE* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*377*
HWMANIFEST	*SMITH FAB* *CAL000317971/ACTIVE*	*14422 ASTRONAUTICS LN* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*378*
ERNS	*UNOCAL* *160904/FIXED FACILITY*	*SERVICE ATION 6502 EDINGER* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*379*
HWMANIFEST	*TSW ALLOY WHEELS* *CAL000304088/ACTIVE*	*14462 ASTRONAUTICS LN* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*380*

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SEAL BEACH CA 90740

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TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

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RCRAGN	*NAVAL WEAPONS STATION SEAL BEA* *CA0170024491/LGN*	*SEAL BEACH BLVD* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*381*
ERNS	*NAVAL WEAPONS STATION / ON HE* *NRC-810310/MOBILE*	*UNKNOWN* *SEAL BEACH CA*	*NON GC*	*N/A*		*383*
ERNS	*US NAVY* *365483/FIXED FACILITY*	*UNKNOWN* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*385*
ERNS	*US NAVY* *400839/MARINE VESSEL (EPA R*	*SEAL BEACH NAVAL WEAPONS ST* *LONG BEACH CA 90740*	*NON GC*	*N/A*		*386*
ERNS	*US NAVY* *371699/FIXED FACILITY*	*UNKNOWN* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*387*
ERNS	*US NAVY (U.S.S. LEWIS PULLER)* *309445/MARINE VESSEL (EPA R*	*UNKNOWN* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*388*
ERNS	*USN - NAVORD CENTER* *500166/FIXED FACILITY*	*NAVAL ORDINANCE CENTER FALL* *FALLBROOK CA 90740*	*NON GC*	*N/A*		*389*
ERNS	*USN - US NAVY* *560649/UNKNOWN*	*NAVAL WEAPONS STATION FALLB* *FALLBROOK CA 90740*	*NON GC*	*N/A*		*390*
ERNS	*USN-NAVAL WEAPONS STA* *376180/FIXED FACILITY*	*UNKNOWN* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*391*
ERNS	*130140/UNKNOWN*	*NAVAL WEAPONS STATION WHARF* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*392*
ERNS	*USN - NAVORD CENTER* *479598/FIXED FACILITY*	*FALLBROOK DETACHMENT STORAG* *FALLBROOK CA 90740*	*NON GC*	*N/A*		*393*
ERNS	*SHELL CALIF PRODUCTION* *131879/UNKNOWN*	*SOUTH BOLSA LEASE* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*394*
LUST	*SEAL BEACH NAVAL WEAPONS STATI* *T0605966796/NOT REPORTED*	*SEAL BEACH NAVAL WEAPONS ST* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*395*
ERNS	*UNOCAL* *465290/UNDERGROUND STORAGE*	*SERVICE ATION 6502 EDINGER* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*396*
ERNS	*SHELL (W. WILDER)* *22628/UNKNOWN*	*S. BOLSA LEASE/PACIFIC COAS* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*397*
ERNS	*SIGNAL LANDMARK PROPERTIES* *12554/UNKNOWN*	*WARNER + BOLSA CHICA BLVDS* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*397*
ERNS	*UNKNOWN* *188342/FIXED FACILITY*	*CORNER OF BOLSA CHICA AND H* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*398*
STATE	*NAVAL WEAPONS STATION SEAL BEA* *CAL80001234/ACTIVE*	*800 SEAL BEACH BLVD. CODE 0* *SEAL BEACH CA 90740*	*NON GC*	*N/A*		*400*
SWL	*SEAL BEACH NAVAL WEAPONS STATI* *SWIS30-CR-0162/CLOSED*	*PERIMETER ROAD AND A RAIL S* *SEAL BEACH CA*	*NON GC*	*N/A*		*401*
SWL	*BOUCHER SITE/BOLSA CHICA LF* *SWIS30-CR-0118/CLOSED*	*16600 BLOCK OF BOLSA CHICA* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*403*

Environmental FirstSearch
Sites Summary Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

TOTAL: 351 **GEOCODED:** 306 **NON GEOCODED:** 45 **SELECTED:** 351

DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Map ID	Page No.
SWL	*STEVERSON BROTHERS-BOLSA CHICA* *WMUD8 300036NUR*	*SE OF BOLSA CHICA AND DUNBA* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*404*
OTHER	*EXXON* *ORCO_GW_85UT56/NOT REPORTED*	*MCFADDEN AT EDWARDS* *HUNTINGTON BEA CA 92649*	*NON GC*	*N/A*		*405*
UST	*WEAPONS SUPPORT FACILITY SEAL* *TISID4ORCO828/NOT REPORTED*	*SEAL BEACH BLVD* *SEAL BEACH CA*	*NON GC*	*N/A*		*405*
UST	*7-ELEVEN STORE 3361* *TISID4ORCO1115/NOT REPORTED*	*13982 BOLSA CHICA RD* *WESTMINSTER CA 92683*	*NON GC*	*N/A*		*406*
ERNS	*15291 VICTORIA* *NRC-874813/FIXED*	*15291 VICTORIA* *HUNTINGTON BEA CA 92647*	*NON GC*	*N/A*		*407*

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 241 **DIST/DIR:** 0.12 NE **ELEVATION:** 3 **MAP ID:** 1

NAME: GREAT WESTERN GRINDING INC
ADDRESS: 15292 BOLSA CHICA RD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000080937
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/9/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15292 BOLSA CHICA ST, HUNTINGTON BEACH, CA 92649-1243*
Owner Name: *MICHAEL DEL MEDICO*
Owner Address: *15292 BOLSA CHICA RD, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *MICHAEL DEL MEDICO*
Contact Address: *, ,*
Contact Phone: *7148906592*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Waste oil and mixed oil*
2009 Total Tonnage: *0.95*
2008 Waste Type: *Other inorganic solid waste*
2008 Total Tonnage: *0.4*
2007 Waste Type: *Waste oil and mixed oil*
2007 Total Tonnage: *2.2935*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *1.04*
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *3.44*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other inorganic solid waste*
2004 Total Tonnage: *0.85*
2003 Waste Type: *Other inorganic solid waste*
2003 Total Tonnage: *0.6*
2002 Waste Type: *Other inorganic solid waste*
2002 Total Tonnage: *1*
2001 Waste Type: *Other inorganic solid waste*
2001 Total Tonnage: *0.75*
2000 Waste Type: *Other inorganic solid waste*
2000 Total Tonnage: *1.15*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Other inorganic solid waste*
1999 Total Tonnage: *1.8*
1998 Waste Type: *Other inorganic solid waste*
1998 Total Tonnage: *2.35*
1997 Waste Type: *Other inorganic solid waste*
1997 Total Tonnage: *0.5*
1996 Waste Type: *Metal sludge (see 121)*
1996 Total Tonnage: *0.5*
1995 Waste Type: *Metal sludge (see 121)*
1995 Total Tonnage: *0.6*
1994 Waste Type: *Other inorganic solid waste*
1994 Total Tonnage: *1.2*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 241 **DIST/DIR:** 0.12 NE **ELEVATION:** 3 **MAP ID:** 1

NAME: GREAT WESTERN GRINDING INC
ADDRESS: 15292 BOLSA CHICA RD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000080937
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type: *Metal dust (see 121) and machining waste*
1993 Total Tonnage: *1.6*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 115 **DIST/DIR:** 0.19 NE **ELEVATION:** 11 **MAP ID:** 2

NAME: VEE IMPORT DOC
ADDRESS: 15182 BOLSA CHICA ST
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD983597048
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JEFF CURT
15182 BOLSA CHICA F
HUNTINGTON BEACH CA 92647

PHONE: 7148989985

UNIVERSE INFORMATION:

NAIC INFORMATION

44131 - AUTOMOTIVE PARTS AND ACCESSORIES STORES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 256 **DIST/DIR:** 0.20 NE **ELEVATION:** 13 **MAP ID:** 3

NAME: LIFECOM
ADDRESS: 5081 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000275931
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 101 **DIST/DIR:** 0.23 NE **ELEVATION:** 14 **MAP ID:** 4

NAME: WESTERN ASSEMBLY INC
ADDRESS: 5081 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982520264
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5081 ARGOSY DRIVE
HUNTINGTON BEACH CA 92649

PHONE: 7148912900

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 223 **DIST/DIR:** 0.24 NE **ELEVATION:** 7 **MAP ID:** 5

NAME: COLOR ZONE DESIGNS
ADDRESS: 15102 BOLSA CHICA STE ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000312678
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 297 **DIST/DIR:** 0.24 NE **ELEVATION:** 14 **MAP ID:** 6

NAME: TRITON ENGINEERING
ADDRESS: 15201 TRITON LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000167675
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/21/1995*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15201 TRITON LN, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *KEN STUMP*
Owner Address: *5211 E FAIRLEE CT, ANAHEIM HILLS, CA 92807-0000*
Contact Name: *KEN STUMP/CEO*
Contact Address: *15201 TRITON LANE, H B, CA 92649-0000*
Contact Phone: *7148933601*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Unspecified oil-containing waste*
2009 Total Tonnage: *1.0425*
2008 Waste Type: *Unspecified oil-containing waste*
2008 Total Tonnage: *0.64635*
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type: *Organic liquids (nonsolvents) with halogens*
2006 Total Tonnage: *0.41*
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2003 Total Tonnage: *0.22*
2002 Waste Type: *Unspecified oil-containing waste*
2002 Total Tonnage: *0.83*
2001 Waste Type: *Unspecified oil-containing waste*
2001 Total Tonnage: *1.37*
2000 Waste Type: *Waste oil and mixed oil*
2000 Total Tonnage: *0.91*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Waste oil and mixed oil*
1999 Total Tonnage: *1.3343*
1998 Waste Type: *Waste oil and mixed oil*
1998 Total Tonnage: *1.0842*
1997 Waste Type: *Oil/water separation sludge*
1997 Total Tonnage: *1.0008*
1996 Waste Type: *Waste oil and mixed oil*
1996 Total Tonnage: *1.251*
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 297 **DIST/DIR:** 0.24 NE **ELEVATION:** 14 **MAP ID:** 6

NAME: TRITON ENGINEERING
ADDRESS: 15201 TRITON LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000167675
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 44 **DIST/DIR:** 0.25 NE **ELEVATION:** 15 **MAP ID:** 7

NAME: HART TOOL CO
ADDRESS: 5111 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000011791
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JIM CUNNINGHAM
5111 ARGOSY DR
HUNTINGTON BEACH CA 926491013

PHONE: 7148917880

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 50 **DIST/DIR:** 0.25 NE **ELEVATION:** 15 **MAP ID:** 7

NAME: INDUCTION HEAT TREAT INC
ADDRESS: 5111 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000095711
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: WILLIAM STATON
5111 ARGOSY DR
HUNTINGTON BEACH CA 92649

PHONE: 7148917804

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Tetrachloroethylene

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 268 **DIST/DIR:** 0.25 NE **ELEVATION:** 15 **MAP ID:** 8

NAME: PACIFIC LITHO INC
ADDRESS: 5142 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000330945
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 264 **DIST/DIR:** 0.25 NE **ELEVATION:** 15 **MAP ID:** 8

NAME: NRN DESIGNS CORPORATION
ADDRESS: 5142 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000144931
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *1/28/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5142 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-1067*
Owner Name: *CORPORATION*
Owner Address: *5142 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-1067*
Contact Name: *WILLIAM CHARNESKI, VICE PRES*
Contact Address: *5142 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-1067*
Contact Phone: *7148986363*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type: *Unspecified organic liquid mixture*
2007 Total Tonnage: *0.3*
2006 Waste Type: *Off-specification, aged or surplus organics*
2006 Total Tonnage: *0.11*
2005 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2005 Total Tonnage: *0.1*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2004 Total Tonnage: *0.1*
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type: *Unspecified organic liquid mixture*
2002 Total Tonnage: *0.91*
2001 Waste Type: *Unspecified organic liquid mixture*
2001 Total Tonnage: *0.1*
2000 Waste Type: *Waste oil and mixed oil*
2000 Total Tonnage: *1.6*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Waste oil and mixed oil*
1999 Total Tonnage: *0.2293*
1998 Waste Type: *Unspecified organic liquid mixture*
1998 Total Tonnage: *0.2293*
1997 Waste Type: *Off-specification, aged or surplus organics*
1997 Total Tonnage: *0.688*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 264 **DIST/DIR:** 0.25 NE **ELEVATION:** 15 **MAP ID:** 8

NAME: NRN DESIGNS CORPORATION
ADDRESS: 5142 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000144931
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 142 **DIST/DIR:** 0.26 NE **ELEVATION:** 15 **MAP ID:** 9

NAME: PHYSICIAN S REFERENCE LAB
ADDRESS: 15162 TRITON
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/24/1990
ID1: 185842
ID2:
STATUS: FIXED FACILITY
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 281 **DIST/DIR:** 0.26 NE **ELEVATION:** 15 **MAP ID:** 10

NAME: SCREEN ART INC
ADDRESS: 15192 TRITON LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000318896
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 86 **DIST/DIR:** 0.27 NE **ELEVATION:** 7 **MAP ID:** 11

NAME: STORK MMA LABORTORIES INC.
ADDRESS: 15062 BOLSA CHICA ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAL000100834
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ARTHUR LEWIS
BOLSA CHICA ST.
HUNTINGTON BEACH CA 92649

PHONE: 7148921961 2201

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA: N - NO
SUBJCA TSD 3004: N - NO
SUBJCA NON TSD: N - NO
SIGNIFICANT NON-COMPLIANCE(SNC): N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD: -----
CLOSURE WORKLOAD: -----
POST CLOSURE WORKLOAD: -----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS: -----
CORRECTIVE ACTION WORKLOAD: N - NO
GENERATOR STATUS: LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL: N
HUMAN EXPOSURE:
GW CONTROLS:
LAND TYPE: P

NAIC INFORMATION

54199 - ALL OTHER PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

222
791
792
D002 - CORROSIVE WASTE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 289 **DIST/DIR:** 0.27 NE **ELEVATION:** 7 **MAP ID:** 11

NAME: STORK - MMA LABORATORIES INC
ADDRESS: 15062 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000100834
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/19/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15062 BOLSA CHICA ST, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *STORK - MMA LABORATORIES INC*
Owner Address: *15062 BOLSA CHICA, HUNNINGTON BEACH, CA 92649-0000*
Contact Name: *ARTHUR LEWIS*
Contact Address: *15062 BOLSA CHICA RD, HUNNINGTON BEACH, CA 92649-0000*
Contact Phone: *7148921961*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Oil/water separation sludge*
2009 Total Tonnage: *8.8821*
2008 Waste Type: *Unspecified oil-containing waste*
2008 Total Tonnage: *4.17*
2007 Waste Type: *Liquids with pH <= 2*
2007 Total Tonnage: *1.6263*
2006 Waste Type: *Oil/water separation sludge*
2006 Total Tonnage: *1.45*
2005 Waste Type: *Other inorganic solid waste*
2005 Total Tonnage: *0.23*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *0.5*
2003 Waste Type: *Waste oil and mixed oil*
2003 Total Tonnage: *2*
2002 Waste Type:
2002 Total Tonnage: *0.4*
2001 Waste Type: *Other organic solids*
2001 Total Tonnage: *0.32*
2000 Waste Type: *Liquids with pH <= 2 with metals*
2000 Total Tonnage: *3.16*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Waste oil and mixed oil*
1999 Total Tonnage: *1.3761*
1998 Waste Type: *Liquids with pH <= 2 with metals*
1998 Total Tonnage: *0.688*
1997 Waste Type: *Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)*
1997 Total Tonnage: *0.688*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 289 **DIST/DIR:** 0.27 NE **ELEVATION:** 7 **MAP ID:** 11

NAME: STORK - MMA LABORATORIES INC
ADDRESS: 15062 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000100834
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 92 **DIST/DIR:** 0.27 NE **ELEVATION:** 14 **MAP ID:** 12

NAME: THE LUDLOW COMPANY L P
ADDRESS: 15272 JASON CIR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000086173
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: HANK MANCINI
15272 JASON CIR
HUNTINGTON BEACH CA 92649

PHONE: 7148915544

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 267 **DIST/DIR:** 0.28 NE **ELEVATION:** 16 **MAP ID:** 13

NAME: OTTEN VALLOT and CO
ADDRESS: 15131 TRITON 117 LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000152912
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *10/2/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15131 TRITON LN 117, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *LOTHAR VALLOT/RANDALL OTTEN*
Owner Address: *15131 TRITON LN 117, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *RANDALL OTTEN/PARTNER*
Contact Address: *15131 TRITON LN 117, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148936643*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 267 **DIST/DIR:** 0.28 NE **ELEVATION:** 16 **MAP ID:** 13

NAME: OTTEN VALLOT and CO
ADDRESS: 15131 TRITON 117 LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000152912
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

UST

SEARCH ID: 182 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MC DONNELL DOUGLAS SPACE SYS C
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE32761
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 189 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605926872
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083003934T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *00UT036*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water)*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *2004-07-01*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Began*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 189 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605926872
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 140 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS AEROSPACE
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 11/15/1994
ID1: 415826
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/15/1994 **TIME OF SPILL:** 1555

PRODUCT RELEASED (1): FC-70 FLUORINERT
QUANTITY (1): 1
UNITS
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANS**

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 141 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL-DOUGLAS (ROBINSON)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 4/18/90 0:
ID1: 167185
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 4/18/1990 **TIME OF SPILL:** 1015

PRODUCT RELEASED (1): HYDRAULIC OIL
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN:
RELEASE DETECTION: CRANK CASE RUPTURED
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 167185 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PUBLIC UTILITY
NAME OF DISCHARGER: MCDONNELL-DOUGLAS (ROBINSON)
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647-

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 138 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS AERO
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 5/6/96
ID1: 489920
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/6/1996 **TIME OF SPILL:** 1510

PRODUCT RELEASED (1): FIBERGLASS MATERIAL AND EPOXY R
QUANTITY (1): 2
UNITS (1): CBF

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: PLANT DISPOSAL AREA AFFECTED BY SMOKE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: IMMERSED COMBUSTION MATERIALS IN WATER, PACKED IN DRUMS, RAN DISCHARGE WATER THROUGH CLARIFICATION PROCESS. CLEANUP IS COMPLETE.
RELEASE DETECTION: FIBERGLASS AND EPOXY RESIN IN OVEN FOR DISPOSAL, CAUGHT FIRE AND SMOKE ENTERED SHOP SPACE. FIRE EXTINGUISHED ITSELF. CLEANUP COMPLETE
MISC. NOTES: EMPLOYEES MAY HAVE BEEN EVACUATED FOR A SHORT TIME

DISCHARGER INFORMATION
DISCHARGER ID: 489920
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MCDONNELL DOUGLAS AERO
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 190 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING (FORMER MCDONNELL DOUGLAS ASTRONAUTICS)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900184
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *083000239T*
LOCAL AGENCY: *ORANGE COUNTY*
LOCAL CASE NUMBER: *86UT143*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: ** Solvents*
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water)*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Remediation*
STATUS DATE: *2009-12-30*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-09-30 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-05-29 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-05-26 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-12-21 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-03-26 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 190 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING (FORMER MCDONNELL DOUGLAS ASTRONAUTICS)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900184
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

DATE (blank if not reported): *2010-09-22 00:00:00*
ACTION (blank if not reported): *Verbal Enforcement*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-06-15 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-05-20 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-04-27 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-10-01 00:00:00*
ACTION (blank if not reported): *Verbal Enforcement*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-02-09 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-06-14 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-02-11 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-04-16 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-04-27 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-04-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-02-11 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-12-24 00:00:00*
ACTION (blank if not reported): *Staff Letter*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 190 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING (FORMER MCDONNELL DOUGLAS ASTRONAUTICS)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900184
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-06-25 00:00:00*
ACTION (blank if not reported): ** Verbal Communication*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-05-21 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-11-23 00:00:00*
ACTION (blank if not reported): ** Verbal Communication*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-12-04 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-12-14 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-06-21 00:00:00*
ACTION (blank if not reported): ** No Action*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-11-15 00:00:00*
ACTION (blank if not reported): *Waste Discharge Requirements*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-04-04 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-03-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-08-11 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-05-02 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-02-02 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-06-07 00:00:00*
ACTION (blank if not reported): *Staff Letter*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 190 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING (FORMER MCDONNELL DOUGLAS ASTRONAUTICS)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900184
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-07-13 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-08-17 00:00:00*
ACTION (blank if not reported): *NPDES Permit*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-01-23 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-04-10 00:00:00*
ACTION (blank if not reported): *Site Visit / Inspection / Sampling*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-04-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-02-13 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-04-24 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-04-10 00:00:00*
ACTION (blank if not reported): *Meeting*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-07-21 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Pump and Treat Groundwater*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 190 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING (FORMER MCDONNELL DOUGLAS ASTRONAUTICS)
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900184
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

ACTION (blank if not reported): *Chemical Oxidation, In Situ*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Pump and Treat Groundwater*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-07-30 00:00:00*
ACTION (blank if not reported): *Focused Groundwater Assessment Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2006-09-03 00:00:00*
ACTION (blank if not reported): *Interim Remedial Action Plan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-01-30 00:00:00*
ACTION (blank if not reported): *4th Qtr 2008 Groundwater Monitoring Report*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2006-05-05 00:00:00*
ACTION (blank if not reported): *Interim Remedial Action Plan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-01-30 00:00:00*
ACTION (blank if not reported): *Other Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-02-19 00:00:00*
ACTION (blank if not reported): *Other Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-01-30 00:00:00*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2006-05-05 00:00:00*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-11-18 00:00:00*
ACTION (blank if not reported): *Addendum to the Supplemental Alpha Aquifer Groundwater Assessment Work Plan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2006-08-29 00:00:00*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-03-19 00:00:00*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*

- More Details Exist For This Site; Max Page Limit Reached -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 191 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING COMPANY-BUILDING 37
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605962396
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER:
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *03UT027*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *2004-01-07*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-01-07 00:00:00*
ACTION (blank if not reported): *Closure/No Further Action Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Began*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 191 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING COMPANY-BUILDING 37
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605962396
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 137 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 8/9/1991
ID1: 228932
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/9/1991 **TIME OF SPILL:** 1503

PRODUCT RELEASED (1): NITROGEN TETROXIDE
QUANTITY (1): 6
UNITS
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANS**

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 136 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 6/22/93
ID1: 329474
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 6/22/1993 **TIME OF SPILL:** 0925

PRODUCT RELEASED (1): SODIUM HYDROXIDE
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CLEANUP BY HAZMAT PERSONNEL, NO WATERWAYS INVOLVED
RELEASE DETECTION: A VALVE STUCK OPEN CAUSING SPILL
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 329474 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647-

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 135 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 8/9/91
ID1: 228937
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/9/1991 **TIME OF SPILL:** 1320

PRODUCT RELEASED (1): NITROGEN TETROXIDE
QUANTITY (1): 6
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

SPILL INFORMATION
DATE OF SPILL: 8/9/1991 **TIME OF SPILL:** 1320

PRODUCT RELEASED (1): NITROGEN TETROXIDE
QUANTITY (1): 6
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 135 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 8/9/91
ID1: 228937
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: CLEANUP BY RP S HAZ MAT
RELEASE DETECTION: UNITS-OTHERS=OUNCES LAB TECHNICIAN HAD SUBSTANCE IN CONTAINER THAT LEAKED
MISC. NOTES: TECHNICIAN INHALED SOME SUBSTANCE, TAKEN TO DISPENSARY AND RELEASED

DISCHARGER INFORMATION
DISCHARGER ID: 228937
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92617-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEANUP BY RP S HAZ MAT
RELEASE DETECTION: UNITS-OTHERS=OUNCES LAB TECHNICIAN HAD SUBSTANCE IN CONTAINER THAT LEAKED
MISC. NOTES: TECHNICIAN INHALED SOME SUBSTANCE, TAKEN TO DISPENSARY AND RELEASED

DISCHARGER INFORMATION
DISCHARGER ID: 228937
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92617-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 134 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 7/6/91
ID1: 224440
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/6/1991 **TIME OF SPILL:** 1200

PRODUCT RELEASED (1): CHROMIUM TRIOXIDE and
QUANTITY (1): 20
UNITS (1): GAL

PRODUCT RELEASED (2): SODIUM HYDROXIDE MIXTURE
QUANTITY (2): 0
UNITS (2): UNK

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

SPILL INFORMATION
DATE OF SPILL: 7/6/1991 **TIME OF SPILL:** 1200

PRODUCT RELEASED (1): CHROMIUM TRIOXIDE and
QUANTITY (1): 20
UNITS (1): GAL

PRODUCT RELEASED (2): SODIUM HYDROXIDE MIXTURE
QUANTITY (2): 0
UNITS (2): UNK

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 134 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 7/6/91
ID1: 224440
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: CLEANUP BY NEWPORT HAZMAT
RELEASE DETECTION: MACHINE THAT MIXES CHEMICALS MALFUNCTIONED
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 224440
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEANUP BY NEWPORT HAZMAT
RELEASE DETECTION: MACHINE THAT MIXES CHEMICALS MALFUNCTIONED
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 224440
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

NFRAP

SEARCH ID: 2 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS CORP
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 8/31/10
ID1: CAD008384588
ID2: 0900453
STATUS: NFRAP-N
PHONE:

DESCRIPTION:

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
ARCHIVE SITE	EPA In-House		9/29/1994
DISCOVERY	State, Fund Financed		12/1/1987
PRELIMINARY ASSESSMENT LOW PRIORITY FOR FURTHER ASSESSMENT	State, Fund Financed		2/5/1990
SITE INSPECTION NFRAP: NO FURTHER REMEDIAL ACTION PLANNED	EPA Fund-Financed	19-94-9/9/	9/29/1994

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 133 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/6/91
ID1: 224439
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/6/1991 **TIME OF SPILL:** 1500

PRODUCT RELEASED (1): CHROMIC ACID DILUTE
QUANTITY (1): 50
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

SPILL INFORMATION
DATE OF SPILL: 7/6/1991 **TIME OF SPILL:** 1500

PRODUCT RELEASED (1): CHROMIC ACID DILUTE
QUANTITY (1): 50
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 133 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/6/91
ID1: 224439
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: CLEANUP BY MCDONNELL DOUGLAS
RELEASE DETECTION: TANK OVERFLOW
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 224439
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEANUP BY MCDONNELL DOUGLAS
RELEASE DETECTION: TANK OVERFLOW
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 224439
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: MCDONNELL DOUGLAS
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 148 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/02
ID1: NRC-595953
ID2:
STATUS: FIXED
PHONE: 7148965309

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED:	07-MAR-02	**DATE COMPLETE:**	07-MAR-02
CALL TAKER:	AMB7531	**CALL TYPE:**	INC

RESPONSIBLE PARTY: LUANNE SCORZA
PHONE 1: 7148965309 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: BOEING CO.
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647

INITIALLY REPORTED BY: TELEPHONE
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF:
SOURCE:

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE CALLER REPORTED HYDRAULIC OIL WAS RELEASED FROM UNKNOWN SOURCE.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	UNKNOWN
INCIDENT DATE:	07-MAR-02	**INCIDENT DATE DESC:**	DISCOVERED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	T
POTENTIAL_FLAG:		**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:	N	**LNG FLAG:**	
AIRCRAFT TYPE:	UNKNOWN	**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	MANUFACTURING FACILITY	**POWER GEN FACILITY:**	U
GENERATING CAPACITY:		**TYPE OF FUEL:**	

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 148 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/02
ID1: NRC-595953
ID2:
STATUS: FIXED
PHONE: 7148965309

NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	
RAILROAD MILEPOST:		**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			
DESCRIPTION OF TANK:			
OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	SOIL
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:		**OTHER AGENCY NOTIFIED:**	

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 148 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/02
ID1: NRC-595953
ID2:
STATUS: FIXED
PHONE: 7148965309

WEATHER CONDITIONS:	RAINY	**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: EXCAVATED SOIL

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	OES, WATER QUALITY CONTROL BOARD
FED AGENCY NOTIFIED:		**STRUCTURE NAME:**	
TYPE OF STRUCTURE:		**ALLISION:**	
STRUCTURE OPERATIONAL:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:	N	**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:		**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: THE CALLER HAD NO ADDITIONAL INFORMATION.

MATERIAL INFORMATION

CHRIS CODE:	OHY	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: HYDRAULIC OIL
AMOUNT OF MATERIAL: 0 UNKNOWN AMOUNT
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 132 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS/T ROBINSON
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 131415
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 116 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: AEROSPACE MANUFACTURING FACILITY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/01
ID1: NRC-569568
ID2:
STATUS: FIXED
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 6/14/2001 6:55:11 PM **DATE COMPLETE:** 6/14/2001 7:09:11 PM
CALL TAKER: **CALL TYPE:** INC

RESPONSIBLE PARTY:
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: SOUTHWEST INDUSTRIES
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS:
RANCHO CUCAMONGA CA 91730

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE CALLER REPORTS THAT DURING ASBESTOS REMOVAL A SOLVENT WAS USED TO REMOVE GLUE AND RELEASED FUMES TO THE AIR THAT CAUSED SYMPTOMS IN 8 PERSONS WITH 3 GOING TO THE CLINIC.

INCIDENT TYPE: FIXED
INCIDENT CAUSE: OPERATOR ERROR
INCIDENT DATE: 6/13/2001 9:38:00 AM
INCIDENT DATE DESC: OCCURRED
DISTANCE FROM CITY:
DISTANCE UNITS:
DIRECTION FROM CITY:
LOCATION SECTION:
LOCATION TOWNSHIP:
LOCATION RANGE:

AIRCRAFT TYPE: UNKNOWN
AIRCRAFT MODEL:
AIRCRAFT ID:
AIRCRAFT FUEL CAPACITY:
AIRCRAFT FUEL CAPACITY UNITS:
AIRCRAFT FUEL ON BOARD:
AIRCRAFT FUEL ON BOARD UNITS:
AIRCRAFT SPOT NUMBER:
AIRCRAFT HANGER:
AIRCRAFT RUNWAY NUM:
ROAD MILE MARKER:
BUILDING ID: 22
TYPE OF FIXED OBJECT: MANUFACTURING FACILITY
POWER GEN FACILITY: NO
GENERATING CAPACITY:
TYPE OF FUEL:
NPDES:
NPDES COMPLIANCE: UNKNOWN
PIPELINE TYPE:
DOT REGULATED: UNKNOWN
PIPELINE ABOVE GROUND: ABOVE
EXPOSED UNDERWATER: NO
PIPELINE COVERED: UNKNOWN
GRADE CROSSING: NO
LOCATION SUBDIVISION:
RAILROAD MILEPOST:
TYPE VEHICLE INVOLVED:
CROSSING DEVICE TYPE:
DEVICE OPERATIONAL: YES

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 116 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:	AEROSPACE MANUFACTURING FACILITY	**REV:**	12/31/01
ADDRESS:	5301 BOLSA AVE	**ID1:**	NRC-569568
	HUNTINGTON BEACH CA 92647	**ID2:**	
	ORANGE	**STATUS:**	FIXED
CONTACT:		**PHONE:**	
SOURCE:	NRC		

DOT CROSSING NUMBER:		**BRAKE FAILURE:**	NO
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	UNKNOWN
TANK REGULATED:	UNKNOWN	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	NO	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	UNKNOWN
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	

FIRE INVOLVED:	NO	**FIRE EXTINGUISHED:**	UNKNOWN
ANY EVACUATIONS:	YES	**NUMBER EVACUATED:**	100
WHO EVACUATED:	EMPLOYEES	**RADIUS OF EVACUATION:**	
ANY INJURIES:	YES	**NUMBER INJURED:**	8
NUMBER HOSPITALIZED:	3	**ANY FATALITIES:**	NO
NUMBER FATALITIES:		**ANY DAMAGES:**	NO
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	NO
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	NO	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	NO
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	NO

TRACK CLOSED:	NO	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	AIR	**ADDTL MEDIUM INFO:**	ATMOSPHERE
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	YES
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	HUNTINGTON BEACH F.D.
ST AGENCY RPT NUM:	01-3444	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	CLEAR	**AIR TEMPERATURE:**	90
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	UNKNOWN	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 116 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: AEROSPACE MANUFACTURING FACILITY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/01
ID1: NRC-569568
ID2:
STATUS: FIXED
PHONE:

DESC OF REMEDIAL ACTION: BOEING STOPPED THE CONTRACTOR S USE OF MATERIAL DURING WORKING HOURS, AND ASBESTOS REMOVAL WILL CONTINUE AFTER HOURS.

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	NO	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	CA OES
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: LETTERS WERE SENT TO REGIONAL EPA, CA ENVIROMENTAL PROTECTION AGENCY (TOXINS CONTROL), AND PUBLIC HEALTH.

MATERIAL INFORMATION

CHRIS CODE:	NCC	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: FUMES FROM ENVIROSOLV 140 DEGREASER
AMOUNT OF MATERIAL: 0 UNKNOWN AMOUNT
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 131 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS SPACE SYSTEM
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 3/18/92
ID1: 260986
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/18/1992 **TIME OF SPILL:** 1300

PRODUCT RELEASED (1): ALUMINUM/WATER (1 PINT)
QUANTITY (1): 1
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

SPILL INFORMATION
DATE OF SPILL: 3/18/1992 **TIME OF SPILL:** 1300

PRODUCT RELEASED (1): ALUMINUM/WATER (1 PINT)
QUANTITY (1): 1
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: YES

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 131 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS SPACE SYSTEM
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 3/18/92
ID1: 260986
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: HAZ CATING TO DETERMINE REASON FOR REACTION, NONE WAS FOUND. RP THINKS COCA-COLA WAS INTRODUCED INTO CONTAINER
RELEASE DETECTION: UNKNOWN CAUSE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 260986 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: MCDONALD DOUGLAS SPACE SYSTEM
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647-

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	YES		

ACTIONS TAKEN: HAZ CATING TO DETERMINE REASON FOR REACTION, NONE WAS FOUND. RP THINKS COCA-COLA WAS INTRODUCED INTO CONTAINER
RELEASE DETECTION: UNKNOWN CAUSE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 260986 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: MCDONALD DOUGLAS SPACE SYSTEM
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647-

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 129 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS SPACE SY
ADDRESS: 5301 BOSLA AVE
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE: EPA

REV: 10/8/90 0:
ID1: 465939
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 10/8/1990 **TIME OF SPILL:** 1015

PRODUCT RELEASED (1): HYDROGEN SULFIDE
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** YES
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: AIR

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: SECURED THE SYSTEM TO REPLACE THE CONTROL VALVE.
RELEASE DETECTION: PROCESS TANK / DUE TO A CONTROL VALVE FAILURE.
MISC. NOTES: 1 PLANT EMPLOYEE RECEIVED MINOR INHALATION DISTRESS BUT NOT ADMITTED TO ANY MEDICAL FACILITY FOR TREATMENT.

DISCHARGER INFORMATION

DISCHARGER ID: 465939
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MCDONALD DOUGLAS SPACE SY
ADDRESS: 5301 BOSLA AVE
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 128 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS HAZMAT
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 5/6/1996
ID1: 513085
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/6/1996 **TIME OF SPILL:** 1510

PRODUCT RELEASED (1): EPOXY RESIN (CAUGHT ON FIRE)
QUANTITY (1): 3

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANS**

ERNS

SEARCH ID: 127 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONALD DOUGLAS AEROSPACE
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92642
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/16/1996
ID1: 513488
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/16/1996 **TIME OF SPILL:** 0830

PRODUCT RELEASED (1): 1,1,1, TCE
QUANTITY (1): 0
UNITS (1):
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANS**

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 139 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS AERO.
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 11/2/1992
ID1: 293668
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/2/1992 **TIME OF SPILL:** 1421

PRODUCT RELEASED (1): ALUMINIUM METAL CHIPS SHAVING *
QUANTITY (1): 4
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	YES	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NONE
RELEASE DETECTION: * AND PINK HYDROCARBON OIL, POSSIBLE PASAJELL CHEM MATERIAL WAS PLACED IN A PLASTIC CONTAINER AND IT REACTED WITH M
MISC. NOTES: OTHER = OUNCES OF MATERIAL. THE MATERIALS THAT WERE MIXED WERE AN OIL PRODUCT AND PASAJELL

DISCHARGER INFORMATION
DISCHARGER ID: 293668
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MCDONNELL DOUGLAS AERO.
ADDRESS: 5301 BOLSA AVENUE
HUNTINGTON BEACH CA 92647

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 150 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: CA EPA

REV: 07/03/00
ID1: CAL30370194
ID2:
STATUS: PROPERTY/SITE REFERRED
PHONE:

OTHER SITE NAMES (blank below = not reported by agency)
MCDONNELL DOUGLAS ASTRONAUTICS

GENERAL SITE INFORMATION
File Name (if different than site name):

Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY (REFOA)*
AWP Site Type: *N/A*
NPL Site:
Fund:
Status Date: *06011995*
Lead:
Staff:
Senior Supervisor: *MMONROY*

DTSC Region and RWQCB : *4 / LONG BEACH*
Branch: *SOUTHERN CA. - B*
RWQCB:
Site Access: *Controlled*
On Cortese List:
Groundwater Contamination:
Haz Ranking Score:
Haz Ranking Score:
Number of Sources Contributing to Contamination at the Site: *0*

INFORMATION ON SPECIAL PROGRAMS THE SITE IS ASSOCIATED WITH (blank below = not reported by agency)
CERCLA II

PROJECTED ACTIVITIES (blank below = not reported by agency)

PROJECTED ACTIVITIES (blank below = not reported by agency)

PROJECTED ACTIVITIES (blank below = not reported by agency)

PROJECTED ACTIVITIES (blank below = not reported by agency)

PROJECTED ACTIVITIES (blank below = not reported by agency)
Activity: ***DISCOVERY (DISC)***
Activity Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
Completion Due Date:
Revised Completion Due Date:
Date Activity Actually Completed: *08011981*
Yards of Solids Removed: *0*
Yards of Solids Treated: *0*
Gallons of Liquid Removed: *0*
Gallons of Liquid Treated: *0*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 150 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: CA EPA

REV: 07/03/00
ID1: CAL30370194
ID2:
STATUS: PROPERTY/SITE REFERRED
PHONE:

Activity: *(SS)*
Activity Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
Completion Due Date:
Revised Completion Due Date:
Date Activity Actually Completed: *05181987*
Yards of Solids Removed: *0*
Yards of Solids Treated: *0*
Gallons of Liquid Removed: *0*
Gallons of Liquid Treated: *0*

Activity: *(PA)*
Activity Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
Completion Due Date:
Revised Completion Due Date:
Date Activity Actually Completed: *04011989*
Yards of Solids Removed: *0*
Yards of Solids Treated: *0*
Gallons of Liquid Removed: *0*
Gallons of Liquid Treated: *0*

Activity: *(SS)*
Activity Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
Completion Due Date:
Revised Completion Due Date:
Date Activity Actually Completed: *05021995*
Yards of Solids Removed: *0*
Yards of Solids Treated: *0*
Gallons of Liquid Removed: *0*
Gallons of Liquid Treated: *0*

Activity: *(SS)*
Activity Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
Completion Due Date:
Revised Completion Due Date:
Date Activity Actually Completed: *06011995*
Yards of Solids Removed: *0*
Yards of Solids Treated: *0*
Gallons of Liquid Removed: *0*
Gallons of Liquid Treated: *0*

DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

DATE	COMMENT
08011981	*FACILITY IDENTIFIED ID VIA PHONE BOOK*
DATE	**COMMENT**
08011981	*MISSILE MFG ONSITE IN 1963*
DATE	**COMMENT**
05161982	*Q. SENT*
DATE	**COMMENT**

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

STATE

SEARCH ID: 150 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: CA EPA

REV: 07/03/00
ID1: CAL30370194
ID2:
STATUS: PROPERTY/SITE REFERRED
PHONE:

06021982 *Q.RETURNED*

DATE	COMMENT
08121982	*FACILITY DRIVE-BY LARGE COMPLEX; SITE SECURED*
12021982	*HAZ.WASTE DISPOSAL METHODS UNKNOWN FOR*
12021982	*PRE-1972 (QUEST)*
12031982	*FINAL STRATEGY SITE REFERRED: TO HWMB ENF-SACTO*
05181987	*SITE SCREENING DONE MORE INFO NEEDED*
04011989	*PRELIM ASSESS DONE SI MEDIUM PRIORITY RECOMMENDED DUE TO*
04011989	*THE PRESENCE OF CONTAMINATED SOILS AND*
04011989	*GROUNDWATER.*
07281989	*SUBMIT TO EPA EPA RECOMMENDATION: BASED ON AVAILABLE*
07281989	*INFORMATION, AN SI MEDIUM PRIORITY IS*
07281989	*RECOMMENDED*
05021995	*Dept received a U.S. EPA CERCLA SI report dated Sept 16,*
05021995	*1994. EPA recommends NFA under CERCLA due to the fact that*
05021995	*RP is compliant with local agencies. The report indicates*
05021995	*that the site is currently active and regulated by RCRA as*
05021995	*a large generator. Orange County Health Care Agency direct.*
05021995	*the soil sampling during the removal of 18 USTs in August*

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Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

STATE

SEARCH ID: 150 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: CA EPA

REV: 07/03/00
ID1: CAL30370194
ID2:
STATUS: PROPERTY/SITE REFERRED
PHONE:

DATE	COMMENT
05021995	*1986. Phase I analytical results indicate the pressure of*
05021995	*VOCs in gw. Therefore, SA RWQCB assumed the lead role for*
05021995	*Phase II site assessment. The report indicates that McDonal*
05021995	*Douglas maintains permits with the DTSC for their waste-*
05021995	*water, coolant ultra filtration, and photographic silver*
05021995	*recovery processes. The two USTs on-site are regulated by*
05021995	*Orange County. The site currently has 85 active permits*
05021995	*with SCAGMD. NFA FOR DTSC.*
06011995	*Dept. received a USEPA CERCLA SI report dated 9/19/94. EPA*
06011995	*recommends NFA under CERCLA because RP is compliant w/local*
06011995	*agencies. The report indicates the site is currently active*
06011995	*and regulated by RCRA as a large quantity generator. Orange*
06011995	*Co. Health Care Agency directed soil sampling during the*
06011995	*removal of the 18 USTs in 8/86. Phase I analytical results*
06011995	*indicate the presence of VOCs in gw. Therefore, SA RWQCB*
06011995	*assumed the lead role for the Phase II Site Assessment.*
06011995	*The report also indicates that McDonald Douglas maintains*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

STATE

SEARCH ID: 150 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: CA EPA

REV: 07/03/00
ID1: CAL30370194
ID2:
STATUS: PROPERTY/SITE REFERRED
PHONE:

DATE	COMMENT
06011995	*permits w/DTSC for their waste-water, coolant ultra-*

DATE	COMMENT
06011995	*filtration and photographic silver recovery processes. The*

DATE	COMMENT
06011995	*two USTs onsite are regulated by Orange Co. The site*

DATE	COMMENT
06011995	*currently has 85 active permits w/SCAGMD. NFA for DTSC.*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

UST

SEARCH ID: 185 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:	THE BOEING COMPANY-SPACE AND COMMUNICATION	**REV:**	07/01/2008
ADDRESS:	5301 BOLSA AVE	**ID1:**	TISID4ORCO327
	HUNTINGTON BEACH CA 92647	**ID2:**	
	ORANGE	**STATUS:**	NOT REPORTED
CONTACT:		**PHONE:**	
SOURCE:	ORANGE CO DEH		

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION

According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0024673*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 165 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 08/04/10
ID1: CAL30370194
ID2:
STATUS: REFER: OTHER AGENCY
PHONE:

GENERAL SITE INFORMATION

Site Type: *Historical*
Status: *Refer: Other Agency*
Status Date: *1995-06-01*
NPL Site: *NO*
Funding:
Regulatory Agencies Involved: *NONE SPECIFIED*
Lead Agency: *NONE SPECIFIED*
Project Manager:
Supervisor: ** MMONROY*
Branch: *Cypress*
Acres:
Assessor s Parcel Number: *NONE SPECIFIED*
Past Uses: *NONE SPECIFIED*
Potential Contaminants: *ACID SOLUTION WITHOUT METALS, ALKALINE SOLUTION WITHOUT METALS, UNSPECIFIED ACID SOLUTION, UNSPECIFIED OIL CONTAINING WASTE, UNSPECIFIED SLUDGE WASTE, UNSPECIFIED SOLVENT MIXTURES*
Confirmed Contaminants: *NONE SPECIFIED*
Potential Media Affected: *NONE SPECIFIED*
Restricted Use: *NO*
Site Management Required: *NONE SPECIFIED*
Special Programs Associated with this Site: ** CERC2*

OTHER SITE NAMES (blank below = not reported by agency)

30370194

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Site Screening***
Completion Date: ***1995-06-01 00:00:00***
Comments: *Dept. received a USEPA CERCLA SI report dated 9/19/94. EPA recommends NFA under CERCLA because RP is compliant w/local agencies. The report indicates the site is currently active and regulated by RCRA as a large quantity generator. Orange Co. Health Care Agency directed soil sampling during the removal of the 18 USTs in 8/86. Phase I analytical results indicate the presence of VOCs in gw. Therefore, SA RWQCB assumed the lead role for the Phase II Site Assessment. The report also indicates that McDonald Douglas maintains permits w/DTSC for their waste-water, coolant ultra- filtration and photographic silver recovery processes. The two USTs onsite are regulated by Orange Co. The site currently has 85 active permits w/SCAGMD. NFA for DTSC.*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Site Screening***
Completion Date: ***1995-05-02 00:00:00***
Comments: *Dept received a U.S. EPA CERCLA SI report dated Sept 16, 1994. EPA recommends NFA under CERCLA due to the fact that RP is compliant with local agencies. The report indicates that the site is currently active and regulated by RCRA as a large generator. Orange County Health Care Agency direct. the soil sampling during the removal of 18 USTs in August 1986. Phase I analytical results indicate the pressure of VOCs in gw. Therefore, SA RWQCB assumed the lead role for Phase II site assessment. The report indicates that McDonal Douglas maintains permits with the DTSC for their waste- water, coolant ultra filtration, and photographic silver recovery processes. The two USTs on-site are regulated by Orange County. The site currently has 85 active permits with SCAGMD. NFA FOR DTSC.*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

OTHER

SEARCH ID: 165 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: MCDONNELL DOUGLAS ASTRONAUTICS
ADDRESS: 5301 BOLSA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 08/04/10
ID1: CAL30370194
ID2:
STATUS: REFER: OTHER AGENCY
PHONE:

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Preliminary Assessment Report***
Completion Date: ***1989-04-01 00:00:00***
Comments: *PRELIM ASSESS DONE SI MEDIUM PRIORITY RECOMMENDED DUE TO THE PRESENCE OF CONTAMINATED SOILS AND GROUNDWATER.*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Site Screening***
Completion Date: ***1987-05-18 00:00:00***
Comments: *SITE SCREENING DONE MORE INFO NEEDED*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: **** Discovery***
Completion Date: ***1981-08-01 00:00:00***
Comments: *FACILITY IDENTIFIED ID VIA PHONE BOOK MISSILE MFG ONSITE IN 1963*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 119 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME: BOEING ACFT COMPANY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BCH CA 92647
Orange
CONTACT:
SOURCE: EPA

REV: 4/2/98
ID1: 573956
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 4/2/1998 **TIME OF SPILL:** 0845

PRODUCT RELEASED (1):
QUANTITY (1):
UNITS (1):

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	YES

WATERBODY AFFECTED BY RELEASE: CHEMICAL BURNED EMPLOYEE S RIGHT ARM

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: 911 CALL WAS MADE AND THE BURNED EMPLOYEE WAS TRANSPORTED TO THE HOSPITAL.
RELEASE DETECTION: SOURCE: WHILE THE EMPLOYEE WAS MIXING RESIN,HE MIXED IN TOO MUCH CATALYST CAUSING A CHEMICAL REACTION, BURNING THE EMPLOYEE S RIGHT ARM
MISC. NOTES: CALLER NOTIFIED CA OES (98-1590).

DISCHARGER INFORMATION
DISCHARGER ID: 573956
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: BOEING ACFT COMPANY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BCH CA 92647

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 146 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/01
ID1: NRC-577679
ID2:
STATUS: FIXED
PHONE: 7148965309

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED:	24-AUG-01	**DATE COMPLETE:**	24-AUG-01
CALL TAKER:	JLC2872	**CALL TYPE:**	INC

RESPONSIBLE PARTY: LUANNE SCORZA
PHONE 1: 7148965309 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: BOEING CO.
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647

INITIALLY REPORTED BY:
PHONE:

INIT REPORTED COMPANY:
ON BEHALF OF: Y
SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE MATERIAL RELASED WHEN SODIUM DICHROMATE LEAKED OUT OF THE BOTTOM OF A ROCKET A DROP GOT INTO AN EMPLOYEES EYE.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	UNKNOWN
INCIDENT DATE:	24-AUG-01	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
WMD CHEM FLAG:	F	**RAD FLAG:**	F
BIO FLAG:	F	**OIL FLAG:**	
POTENTIAL_FLAG:		**AMT MATERIAL FLAG:**	
MILITARY ORG FLAG:		**LNG FLAG:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	BLDG 42
TYPE OF FIXED OBJECT:	MANUFACTURING FACILITY	**POWER GEN FACILITY:**	N

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 146 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/01
ID1: NRC-577679
ID2:
STATUS: FIXED
PHONE: 7148965309

GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**RAILROAD HOTLINE:**	
GRADE CROSSING:	N	**LOCATION SUBDIVISION:**	
RAILROAD MILEPOST:		**TYPE VEHICLE INVOLVED:**	
CROSSING DEVICE TYPE:		**DEVICE OPERATIONAL:**	Y
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			
DESCRIPTION OF TANK:			
OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	Y	**NUMBER INJURED:**	1
NUMBER HOSPITALIZED:	1	**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	CONCRETE
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 146 **DIST/DIR:** 0.30 NE **ELEVATION:** 8 **MAP ID:** 14

NAME:
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT: LUANNE SCORZA
SOURCE: NRC

REV: 12/31/01
ID1: NRC-577679
ID2:
STATUS: FIXED
PHONE: 7148965309

ST AGENCY RPT NUM:
WEATHER CONDITIONS:
WIND SPEED:
WATER SUPPLY CONTAM: U
SHEEN COLOR:
SHEEN ODOR DESCRIPTION:
CURRENT SPEED:
WATER TEMPERATURE:

OTHER AGENCY NOTIFIED:
AIR TEMPERATURE:
WIND DIRECTION:
SHEEN SIZE:
DIR OF SHEEN TRAVEL:
WAVE CONDITION:
CURRENT DIRECTION:

DESC OF REMEDIAL ACTION: SORBENTS DEPLOYED

EMPL FATALITY:
COMMUNITY IMPACT: N
EMPLOYEE INJURIES:
OCCUPANT FATALITY:
ROAD CLOSURE UNITS:
SHEEN SIZE UNITS:
HAZMAT
FED AGENCY NOTIFIED:
TYPE OF STRUCTURE:
STRUCTURE OPERATIONAL:
SHEEN SIZE LENGTH: N
SHEEN SIZE WIDTH:
OFFSHORE:
RELEASE RATE UNIT:

PASS FATALITY:
WIND SPEED UNITS:
PASSENGER INJURIES:
CURRENT SPEED UNITS:
TRACK CLOSURE UNITS:
STATE AGENCY NOTIFIED: CA OES, HUNTINGTON BEACH
STRUCTURE NAME:
ALLISION:
NEAREST RIVER MILE MARK:
SHEEN SIZE LENGTH UNITS:
SHEEN SIZE WIDTH UNITS:
DURATION UNIT:
RELEASE RATE RATE:

ADDITIONAL INFO: THE CALLER HAS NO ADDITIONAL INFORMATION.

MATERIAL INFORMATION

CHRIS CODE: SCR
UN NUMBER:

CASE NUMBER: 000000-00-0
REACHED WATER: NO

NAME OF MATERIAL: SODIUM DICHROMATE
AMOUNT OF MATERIAL: 1 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 243 **DIST/DIR:** 0.30 NE **ELEVATION:** 15 **MAP ID:** 15

NAME: HARRIS INDUSTRIES, INC
ADDRESS: 5181 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000159089
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *3/30/1995*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5181 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *WILLIAM HELZER*
Owner Address: *5181 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *WILLIAM D HELZER PRESIDENT*
Contact Address: *5181 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148988048*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type: *Waste oil and mixed oil*
2008 Total Tonnage: *0.209*
2007 Waste Type: *Unspecified organic liquid mixture*
2007 Total Tonnage: *0.22935*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *0.16*
2005 Waste Type: *Unspecified organic liquid mixture*
2005 Total Tonnage: *0.22*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Waste oil and mixed oil*
2004 Total Tonnage: *0.12*
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type: *Waste oil and mixed oil*
2002 Total Tonnage: *0.22*
2001 Waste Type: *Photochemicals/photoprocessing waste*
2001 Total Tonnage: *0.02*
2000 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2000 Total Tonnage: *0.45*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type: *Organic solids with halogens*
1998 Total Tonnage: *0.125*
1997 Waste Type: *Organic solids with halogens*
1997 Total Tonnage: *0.1*
1996 Waste Type: *Unspecified oil-containing waste*
1996 Total Tonnage: *0.1251*
1995 Waste Type: *Off-specification, aged or surplus organics*
1995 Total Tonnage: *0.1042*
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 243 **DIST/DIR:** 0.30 NE **ELEVATION:** 15 **MAP ID:** 15

NAME: HARRIS INDUSTRIES, INC
ADDRESS: 5181 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000159089
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 91 **DIST/DIR:** 0.32 NE **ELEVATION:** 16 **MAP ID:** 16

NAME: THE BOEING COMPANY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD008384588
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5301 BOLSA AVE
HUNTINGTON BEACH CA 92647

PHONE: 7148964300

UNIVERSE INFORMATION:

NAIC INFORMATION

336413 - OTHER AIRCRAFT PARTS AND AUXILIARY EQUIPMENT MANUFACTURING
336414 - GUIDED MISSILE AND SPACE VEHICLE MANUFACTURING
336411 - AIRCRAFT MANUFACTURING
336419 - OTHER GUIDED MISSILE AND SPACE VEHICLE PARTS AND AUXILIARY EQUIPMENT MANUFACTURING
336411 - AIRCRAFT MANUFACTURING
336414 - GUIDED MISSILE AND SPACE VEHICLE MANUFACTURING
336414 - GUIDED MISSILE AND SPACE VEHICLE MANUFACTURING
336414 - GUIDED MISSILE AND SPACE VEHICLE MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 7/13/2004
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 7/13/2004
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** B - STATE CONTRACTOR
DETERMINED: 7/21/1992 **DETERMINED BY:** B - STATE CONTRACTOR
CITATION: 262.10-12.A
RESOLVED: 4/20/1994
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0002 **RESPONSIBLE:** B - STATE CONTRACTOR
DETERMINED: 4/2/2004 **DETERMINED BY:** B - STATE CONTRACTOR
CITATION:
RESOLVED: 7/13/2004
TYPE: GENERATOR-GENERAL REQUIREMENTS

HAZARDOUS WASTE INFORMATION:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 91 **DIST/DIR:** 0.32 NE **ELEVATION:** 16 **MAP ID:** 16

NAME: THE BOEING COMPANY
ADDRESS: 5301 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD008384588
ID2:
STATUS: LGN
PHONE:

Benzene
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel;
Methyl ethyl ketone
Chromium
Corrosive waste
Hydrogen sulfide (OR) Hydrogen sulfide H2S
Ignitable waste
Mercury
Tetrachloroethylene
The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichlorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; all spent solvent mixtures/bl
The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
Trichloroethylene
Reactive waste
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.
Lead

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 306 **DIST/DIR:** 0.32 NE **ELEVATION:** 11 **MAP ID:** 17

NAME: WORKMAN AUTOMOTIVE
ADDRESS: 15000 BOLSA CHICA UNIT ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000182498
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/24/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15000 BOLSA CHICA RD UNIT A, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *DARLENE MCFALL*
Owner Address: *15000 BOLSA CHICA ST, HB, CA 92649-0000*
Contact Name: *DARLENE MCFALL - OWNER*
Contact Address: *15000 BOLSA CHICA RD UNIT A, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148988128*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type: *Unspecified aqueous solution*
2000 Total Tonnage: *0.79*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 306 **DIST/DIR:** 0.32 NE **ELEVATION:** 11 **MAP ID:** 17

NAME: WORKMAN AUTOMOTIVE
ADDRESS: 15000 BOLSA CHICA UNIT ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000182498
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 249 **DIST/DIR:** 0.34 NE **ELEVATION:** 16 **MAP ID:** 18

NAME: I D TECHNOLOGY CORP INC
ADDRESS: 5151 OCEANUS STE 102 DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000276148
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 19 **DIST/DIR:** 0.35 NE **ELEVATION:** 16 **MAP ID:** 19

NAME: CALIFORNIA FAUCETS
ADDRESS: 5231 ARGOSY DR
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000122747
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: FREDERICK DESBOROUGH
5231 ARGOSY DR
HUNTINGTON BEACH CA 926491015

PHONE: 7148917797

CONTACT INFORMATION: FREDERICK DESBOROUGH
5231 ARGOSY DR
HUNTINGTON BEACH CA 92649

PHONE: 714-891-7797

UNIVERSE INFORMATION:

NAIC INFORMATION

332913 - PLUMBING FIXTURE FITTING AND TRIM MANUFACTURING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 3/15/2006
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0200 **RESPONSIBLE:** S - STATE
DETERMINED: 3/15/2006 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED:
TYPE: GENERATOR-RECORDKEEPING REQUIREMENTS

VIOLATION NUMBER: 0201 **RESPONSIBLE:** S - STATE
DETERMINED: 3/15/2006 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED:
TYPE: GENERATOR-GENERAL REQUIREMENTS

VIOLATION NUMBER: 0202 **RESPONSIBLE:** S - STATE
DETERMINED: 3/15/2006 **DETERMINED BY:** S - STATE
CITATION:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 19 **DIST/DIR:** 0.35 NE **ELEVATION:** 16 **MAP ID:** 19

NAME: CALIFORNIA FAUCETS
ADDRESS: 5231 ARGOSY DR
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000122747
ID2:
STATUS: LGN
PHONE:

RESOLVED:
TYPE: GENERATOR-RECORDKEEPING REQUIREMENTS

HAZARDOUS WASTE INFORMATION:

Lead
Chromium
Corrosive waste
Selenium

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 301 **DIST/DIR:** 0.36 NE **ELEVATION:** 16 **MAP ID:** 20

NAME: VEOLIA ES TECHNICAL SOLUTIONS LLC
ADDRESS: 5202 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000209382
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/16/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5202 OCEANUS DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *VEOLIA ES TECHNICAL SOLUTIONS LLC*
Owner Address: *107 S MOTOR AVE, AZUSA, CA 91702*
Contact Name: *JAVED HUSSAIN-ENVIRO MGR*
Contact Address: *107 S MOTOR AVE, AZUSA, CA 91702*
Contact Phone: *6268152220*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Other organic solids*
2009 Total Tonnage: *0.125*
2008 Waste Type: *Liquids with pH <= 2*
2008 Total Tonnage: *0.0275*
2007 Waste Type: *Unspecified oil-containing waste*
2007 Total Tonnage: *0.1*
2006 Waste Type: *Other organic solids*
2006 Total Tonnage: *0.07*
2005 Waste Type: *NONE*
2005 Total Tonnage: *0.12*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *0.05*
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *0.12*
2002 Waste Type: *Other organic solids*
2002 Total Tonnage: *0.1*
2001 Waste Type: *Unspecified oil-containing waste*
2001 Total Tonnage: *0.02*
2000 Waste Type: *Other organic solids*
2000 Total Tonnage: *0.02*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 301 **DIST/DIR:** 0.36 NE **ELEVATION:** 16 **MAP ID:** 20

NAME: VEOLIA ES TECHNICAL SOLUTIONS LLC
ADDRESS: 5202 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000209382
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 32 **DIST/DIR:** 0.37 NE **ELEVATION:** 16 **MAP ID:** 21

NAME: DOUGLAS AIRCRAFT CO B-220
ADDRESS: 15282 NEWSBOY CIRCLE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982402539
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15282 NEWSBOY CIRCLE
HUNTIGTON BEACH CA 92649

PHONE: 2135933789

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 296 **DIST/DIR:** 0.37 NE **ELEVATION:** 16 **MAP ID:** 22

NAME: TRI MODELS INC
ADDRESS: 5191 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000159907
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/20/1995*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5191 OCEANUS DR, HUNTINGTON BEACH, CA 92649-1026*
Owner Name: *TRI MODELS INC*
Owner Address: *5191 OCEANUS DR, HUNTINGTON BEACH, CA 92649-1026*
Contact Name: *JEFF HERZOG SHOP SUPERVISOR*
Contact Address: *5191 OCEANUS DR, HUNTINGTON BEACH, CA 92649-1026*
Contact Phone: *7148960823*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2009 Total Tonnage: *0.2604*
2008 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2008 Total Tonnage: *0.2982*
2007 Waste Type: *Waste oil and mixed oil*
2007 Total Tonnage: *6.8805*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *3.33*
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *3.21*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Liquids with pH <= 2*
2004 Total Tonnage: *0.01*
2003 Waste Type: *Waste oil and mixed oil*
2003 Total Tonnage: *3.44*
2002 Waste Type: *Waste oil and mixed oil*
2002 Total Tonnage: *5.73*
2001 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2001 Total Tonnage: *0.47*
2000 Waste Type: *Unspecified organic liquid mixture*
2000 Total Tonnage: *0.02*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
1999 Total Tonnage: *0.0417*
1998 Waste Type: *Waste oil and mixed oil*
1998 Total Tonnage: *2.919*
1997 Waste Type: *Waste oil and mixed oil*
1997 Total Tonnage: *2.919*
1996 Waste Type: *Waste oil and mixed oil*
1996 Total Tonnage: *3.8989*
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 296 **DIST/DIR:** 0.37 NE **ELEVATION:** 16 **MAP ID:** 22

NAME: TRI MODELS INC
ADDRESS: 5191 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000159907
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 144 **DIST/DIR:** 0.38 NE **ELEVATION:** 16 **MAP ID:** 23

NAME: STELLICKT
ADDRESS: 5500 BOLSA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 3/10/92
ID1: 259059
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/10/1992 **TIME OF SPILL:** 1325

PRODUCT RELEASED (1): PAINT LATEX
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: GUTTER TO STORM DRAIN

SPILL INFORMATION
DATE OF SPILL: 3/10/1992 **TIME OF SPILL:** 1325

PRODUCT RELEASED (1): PAINT LATEX
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: GUTTER TO STORM DRAIN

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 144 **DIST/DIR:** 0.38 NE **ELEVATION:** 16 **MAP ID:** 23

NAME: STELLICKT
ADDRESS: 5500 BOLSA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 3/10/92
ID1: 259059
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

ACTIONS TAKEN: CONTAINED EMA IS RESPONDING FOR CLEANUP
RELEASE DETECTION: 2 GALS PAINTS WASHED INTO STORM DRAIN WITH 200-300 GAL WATER
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 259059
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: STELLICKT
ADDRESS: 5500 BOLSA
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CONTAINED EMA IS RESPONDING FOR CLEANUP
RELEASE DETECTION: 2 GALS PAINTS WASHED INTO STORM DRAIN WITH 200-300 GAL WATER
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 259059
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: STELLICKT
ADDRESS: 5500 BOLSA
HUNTINGTON BEACH CA 92647-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 220 **DIST/DIR:** 0.38 NE **ELEVATION:** 16 **MAP ID:** 24

NAME: COAST AEROSPACE MANUFACTURING
ADDRESS: 5221 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000309428
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 251 **DIST/DIR:** 0.38 NE **ELEVATION:** 16 **MAP ID:** 25

NAME: JEFF S PRESS INC
ADDRESS: 5122 BOLSA 105 AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000106928
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/25/1993*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5122 BOLSA AVE STE 105, HUNTINGTON BEACH, CA 92649-1050*
Owner Name: *JEFF S PRESS INC*
Owner Address: *5122 BOLSA AVE STE 105, HUNTINGTON BEACH, CA 92649-1050*
Contact Name: *JEFF WILKINS/PRES*
Contact Address: *5122 BOLSA AVE STE 105, HUNTINGTON BEACH, CA 92649-1050*
Contact Phone: *7148915706*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2009 Total Tonnage: *0.1176*
2008 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2008 Total Tonnage: *0.1512*
2007 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2007 Total Tonnage: *0.13344*
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2005 Total Tonnage: *0.05*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2001 Total Tonnage: *0.16*
2000 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
2000 Total Tonnage: *0.06*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 251 **DIST/DIR:** 0.38 NE **ELEVATION:** 16 **MAP ID:** 25

NAME: JEFF S PRESS INC
ADDRESS: 5122 BOLSA 105 AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000106928
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 221 **DIST/DIR:** 0.40 SE **ELEVATION:** 14 **MAP ID:** 26

NAME: COAST MOTOR WERK
ADDRESS: 15385 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000302811
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 303 **DIST/DIR:** 0.40 SE **ELEVATION:** 14 **MAP ID:** 27

NAME: WCM MANUFACTURING
ADDRESS: 15395 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000326659
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 75 **DIST/DIR:** 0.42 NE **ELEVATION:** 16 **MAP ID:** 28

NAME: RIMA ENTERPRISES INC
ADDRESS: 5340 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983583048
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JAY DUTT
5340 ARGOSY AVE
HUNTINGTON BEACH CA 92649

PHONE: 7148934534

UNIVERSE INFORMATION:

NAIC INFORMATION

333293 - PRINTING MACHINERY AND EQUIPMENT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 234 **DIST/DIR:** 0.42 NE **ELEVATION:** 16 **MAP ID:** 29

NAME: FAST FASTENERS
ADDRESS: 5212 BOLSA STE AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000329842
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 285 **DIST/DIR:** 0.42 SE **ELEVATION:** 14 **MAP ID:** 30

NAME: SIR MICHAELS CORP
ADDRESS: 15442 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000296796
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

SPILLS

SEARCH ID: 153 **DIST/DIR:** 0.43 NE **ELEVATION:** 16 **MAP ID:** 31

NAME: CENTRILIFT, INC.
ADDRESS: 5421 ARGOSY AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: CA EPA

REV: 07/01/2003
ID1: SLC8_127
ID2:
STATUS: POST INVESTIGATION-REMEDIAL MO
PHONE:

Lead Agency: *REGIONAL BOARD*
Program: *SLIC*
Case Type: *SOIL AND GROUNDWATER*
Status: *POST INVESTIGATION-REMEDIAL MONITORING*
Substance: *TCE,TCA*
Comments:
Thomas Brothers Guide Location: *827-E4*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 213 **DIST/DIR:** 0.43 SE **ELEVATION:** 15 **MAP ID:** 32

NAME: BLUE WHITE LTD
ADDRESS: 5300 BUISNESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000237968
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/6/2001*
Inactivity Date:
Facility Mail Name: *WILLIAM MC DOWELL/DIRE OF ENG*
Facility Mailing Address: *5300 BUISNESS DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *BLUE WHITE LTD*
Owner Address: *5300 BUISNESS DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *DANIEL ESTRADA-GENERAL MANAGER*
Contact Address: *5300 BUISNESS DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148938529*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE*
2009 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
2009 Total Tonnage: *0.025*
2008 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
2008 Total Tonnage: *0.05*
2007 Waste Type: *Other organic solids*
2007 Total Tonnage: *0.14*
2006 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2006 Total Tonnage: *0.01*
2005 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2005 Total Tonnage: *0.21*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2004 Total Tonnage: *0.17*
2003 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2003 Total Tonnage: *0.23*
2002 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2002 Total Tonnage: *0.14*
2001 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2001 Total Tonnage: *0.02*
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 213 **DIST/DIR:** 0.43 SE **ELEVATION:** 15 **MAP ID:** 32

NAME: BLUE WHITE LTD
ADDRESS: 5300 BUISNESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000237968
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 237 **DIST/DIR:** 0.44 NE **ELEVATION:** 16 **MAP ID:** 33

NAME: FIBREFORM ELECTRONICS INC
ADDRESS: 5341 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAD008256869
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*4/10/1987*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*5341 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name:	*FIBREFORM ELECTRONICS INC*
Owner Address:	*5341 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name:	*DEAN BARLOW*
Contact Address:	*5341 ARGOSY AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone:	*7148989641*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:	*FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE*
2009 Waste Type:	*Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)*
2009 Total Tonnage:	*0.195*
2008 Waste Type:	*Liquids with halogenated organic compounds >= 1,000 Mg./L*
2008 Total Tonnage:	*1.07169*
2007 Waste Type:	*Liquids with halogenated organic compounds >= 1,000 Mg./L*
2007 Total Tonnage:	*0.2919*
2006 Waste Type:	*Oil/water separation sludge*
2006 Total Tonnage:	*3.33*
2005 Waste Type:	*Waste oil and mixed oil*
2005 Total Tonnage:	*7.08*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:	*Waste oil and mixed oil*
2004 Total Tonnage:	*0.77*
2003 Waste Type:	*Waste oil and mixed oil*
2003 Total Tonnage:	*1.04*
2002 Waste Type:	*Waste oil and mixed oil*
2002 Total Tonnage:	*0.62*
2001 Waste Type:	*Liquids with halogenated organic compounds >= 1,000 Mg./L*
2001 Total Tonnage:	*0.27*
2000 Waste Type:	*Liquids with halogenated organic compounds >= 1,000 Mg./L*
2000 Total Tonnage:	*0.14*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:	*Other organic solids*
1999 Total Tonnage:	*0.45*
1998 Waste Type:	
1998 Total Tonnage:	
1997 Waste Type:	
1997 Total Tonnage:	
1996 Waste Type:	*Waste oil and mixed oil*
1996 Total Tonnage:	*1.0008*
1995 Waste Type:	*Off-specification, aged or surplus inorganics*
1995 Total Tonnage:	*0.0041*
1994 Waste Type:	
1994 Total Tonnage:	
1993 Waste Type:	*Contaminated soil from site clean-up*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 237 **DIST/DIR:** 0.44 NE **ELEVATION:** 16 **MAP ID:** 33

NAME: FIBREFORM ELECTRONICS INC
ADDRESS: 5341 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAD008256869
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage: *0.014*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 15 **DIST/DIR:** 0.45 NE **ELEVATION:** 16 **MAP ID:** 34

NAME: CandD PLASTICS (DIVISION OF CandD AEROSPACE,
ADDRESS: 5386 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983644428
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: DAVE MCCORMICK
5386 ARGOSY
HUNTINGTON BEACH CA 92649

PHONE: 7148911906

UNIVERSE INFORMATION:

NAIC INFORMATION

336413 - OTHER AIRCRAFT PARTS AND AUXILIARY EQUIPMENT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
Ignitable waste
Corrosive waste
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 57 **DIST/DIR:** 0.45 NE **ELEVATION:** 16 **MAP ID:** 35

NAME: MAXELL CORP OF AMERICA
ADDRESS: 5191 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982504607
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5191 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 4049221000

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 169 **DIST/DIR:** 0.45 SE **ELEVATION:** 8 **MAP ID:** 36

NAME:	VALLEY NORTH AMERICAN	**REV:**	07/01/99
ADDRESS:	15752 BOLSA CHICA ST	**ID1:**	ORCO_GW_91UT111
	HUNTINGTON BEACH CA 92649	**ID2:**	
	ORANGE	**STATUS:**	NOT REPORTED
CONTACT:		**PHONE:**	
SOURCE:	ORANGE CO EHD		

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*4*
Fund:	*F*
Substance Code:	*12034*
Description:	*DIESEL*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	*01-02-92*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 200 **DIST/DIR:** 0.45 SE **ELEVATION:** 8 **MAP ID:** 36

NAME: VALLEY NORTH AMERICAN
ADDRESS: 15752 BOLSA CHICA ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901471
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083001969T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *91UT111*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1992-01-02*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 38 **DIST/DIR:** 0.47 NE **ELEVATION:** 16 **MAP ID:** 37

NAME: EXHIBIT PLACE THE
ADDRESS: 5221 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981384563
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5221 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 7148914020

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 118 **DIST/DIR:** 0.47 SE **ELEVATION:** 14 **MAP ID:** 38

NAME: AUTO TEST and DEVELOPMENT SVC
ADDRESS: 15442 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 114460
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 203 **DIST/DIR:** 0.47 SE **ELEVATION:** 13 **MAP ID:** 39

NAME: 3 D INSTRUMENTS INC
ADDRESS: 15542 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAD982328106
ID2:
STATUS: INACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*6/17/1988*
Inactivity Date:	*6/30/2004*
Facility Mail Name:	
Facility Mailing Address:	*15542 CHEMICAL LN, HUNTINGTON BEACH, CA 92649-1505*
Owner Name:	*RANDOLPH HEARTFIELD*
Owner Address:	*15542 CHEMICAL LN, HUNTINGTON BEACH, CA 92649-1505*
Contact Name:	*EARL R SELMAN/ACCT MGR*
Contact Address:	*, HUNTINGTON BEACH, CA 92649-1505*
Contact Phone:	*7148945351*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:	
2009 Waste Type:	
2009 Total Tonnage:	
2008 Waste Type:	*Waste oil and mixed oil*
2008 Total Tonnage:	*0.85*
2007 Waste Type:	*Waste oil and mixed oil*
2007 Total Tonnage:	*2.6*
2006 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2006 Total Tonnage:	*0.52*
2005 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2005 Total Tonnage:	*2.16*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:	*Latex waste*
2004 Total Tonnage:	*0.22*
2003 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2003 Total Tonnage:	*1.36*
2002 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2002 Total Tonnage:	*0.67*
2001 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2001 Total Tonnage:	*1.4*
2000 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
2000 Total Tonnage:	*1.5*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
1999 Total Tonnage:	*0.5004*
1998 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
1998 Total Tonnage:	*0.3502*
1997 Waste Type:	
1997 Total Tonnage:	
1996 Waste Type:	*Organic liquids with metals (see 121)*
1996 Total Tonnage:	*0.4587*
1995 Waste Type:	
1995 Total Tonnage:	
1994 Waste Type:	
1994 Total Tonnage:	
1993 Waste Type:	*Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 203 **DIST/DIR:** 0.47 SE **ELEVATION:** 13 **MAP ID:** 39

NAME: 3 D INSTRUMENTS INC
ADDRESS: 15542 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAD982328106
ID2:
STATUS: INACTIVE
PHONE:

1993 Total Tonnage: *0.4586*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 238 **DIST/DIR:** 0.47 SE **ELEVATION:** 13 **MAP ID:** 39

NAME: FOIL CORE INC
ADDRESS: 15542 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000286580
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 204 **DIST/DIR:** 0.47 NE **ELEVATION:** 16 **MAP ID:** 40

NAME: AAE AEROSPACE INC
ADDRESS: 5382 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000277800
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 240 **DIST/DIR:** 0.47 SE **ELEVATION:** 13 **MAP ID:** 41

NAME: GANDT INDUSTRIES INC
ADDRESS: 15551 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000301933
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 24 **DIST/DIR:** 0.48 NE **ELEVATION:** 16 **MAP ID:** 42

NAME: CENTRILIFT HUGHES SVC CTR
ADDRESS: 5421 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981170160
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5421 ARGOSY AVE
HUNTINGTON BEACH CA 92649

PHONE: 9183419600

UNIVERSE INFORMATION:

NAIC INFORMATION

333132 - OIL AND GAS FIELD MACHINERY AND EQUIPMENT MANUFACTURING
333911 - PUMP AND PUMPING EQUIPMENT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 212 **DIST/DIR:** 0.48 SE **ELEVATION:** 14 **MAP ID:** 43

NAME: BEACH CITY LIFT INC
ADDRESS: 5361 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000081769
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/21/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5361 COMMERCIAL DR, HUNTINGTON BEACH, CA 92649-1251*
Owner Name: *COLE PATTY L*
Owner Address: *, ,*
Contact Name: *MIKE COLE*
Contact Address: *5361 COMMERCIAL DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148928311*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Other organic solids*
2005 Total Tonnage: *0.05*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *0.1*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type: *Unspecified solvent mixture*
2000 Total Tonnage: *0.02*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Other organic solids*
1999 Total Tonnage: *0.125*
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type: *Unspecified aqueous solution*
1995 Total Tonnage: *0.1251*
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type: *Unspecified aqueous solution*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 212 **DIST/DIR:** 0.48 SE **ELEVATION:** 14 **MAP ID:** 43

NAME: BEACH CITY LIFT INC
ADDRESS: 5361 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000081769
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage: *0.3753*

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 216 **DIST/DIR:** 0.48 SE **ELEVATION:** 14 **MAP ID:** 44

NAME: CHIEF INDUSTRIES
ADDRESS: 5362 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000258172
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 305 **DIST/DIR:** 0.48 SE **ELEVATION:** 16 **MAP ID:** 45

NAME: WESTERN FORGE DIE
ADDRESS: 5361 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000046267
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *2/15/1991*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5361 BUSINESS DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *TARPIN CORPORATION*
Owner Address: *, ,*
Contact Name: *HAROLD JERMAKIAN*
Contact Address: *, ,*
Contact Phone:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 305 **DIST/DIR:** 0.48 SE **ELEVATION:** 16 **MAP ID:** 45

NAME: WESTERN FORGE DIE
ADDRESS: 5361 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000046267
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 7 **DIST/DIR:** 0.49 SE **ELEVATION:** 14 **MAP ID:** 46

NAME: AUTOSEARCH WEST INC
ADDRESS: 15385 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983602376
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JOHN HOULIHAN
15385 CHEMICAL LN
HUNTINGTON BEACH CA 92649

PHONE: 7148949849

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 12 **DIST/DIR:** 0.49 SE **ELEVATION:** 14 **MAP ID:** 47

NAME: BOBCAT INC
ADDRESS: 5261 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981426588
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: WILLIAM WHITE
5261 BUSINESS DR
HUNTINGTON BEACH CA 92649

PHONE: 7148927748

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 112 **DIST/DIR:** 0.50 SE **ELEVATION:** 14 **MAP ID:** 48

NAME: MS BELLOWS
ADDRESS: 5322 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 2/16/10
ID1: CAD982021412
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	N - NO
SUBJCA TSD 3004:	N - NO
SUBJCA NON TSD:	N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):	N - NO
BEGINNING OF THE YEAR SNC:	
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	N - NO
GENERATOR STATUS:	SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE
INSTITUTIONAL CONTROL:	N
HUMAN EXPOSURE:	
GW CONTROLS:	
LAND TYPE:	

NAIC INFORMATION

334518 - WATCH, CLOCK, AND PART MANUFACTURING
334519 - OTHER MEASURING AND CONTROLLING DEVICE MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY:	STATE	**DATE:**	04/23/2004
TYPE:	WRITTEN INFORMAL		
AGENCY:	STATE	**DATE:**	06/31/2006
TYPE:	WRITTEN INFORMAL		

VIOLATION INFORMATION:

VIOLATION NUMBER:	5001	**RESPONSIBLE:**	S - STATE
DETERMINED:	06/31/2006	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	06/05/2006
TYPE:	GENERATORS - GENERAL		

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 262 **DIST/DIR:** 0.50 SE **ELEVATION:** 16 **MAP ID:** 49

NAME: NOTTHOFF ENGINEERING -LA-INC
ADDRESS: 5381 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000261823
ID2:
STATUS: INACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 52 **DIST/DIR:** 0.51 SE **ELEVATION:** 14 **MAP ID:** 50

NAME: JandR MICRO PARTS
ADDRESS: 15441 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981394380
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15441 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148466800

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 89 **DIST/DIR:** 0.51 SE **ELEVATION:** 14 **MAP ID:** 51

NAME: TECHNOLOGY IN HYDRAULIC ENG
ADDRESS: 15445 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0000072777
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: DAN RISK
15445 CHEMICAL LN
HUNTINGTON BEACH CA 92649

PHONE: 7148968761

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 120 **DIST/DIR:** 0.51 NE **ELEVATION:** 16 **MAP ID:** 52

NAME: CALIFORNIA FAWCETS
ADDRESS: 5342 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/1999
ID1: 630631
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/14/1999 **TIME OF SPILL:** 1000

PRODUCT RELEASED (1): HYDROCHLORIC ACID
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	YES	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: ATMOSPHERE

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NONE / THIS OCCURS MONDAY THROUGH FRIDAY TWICE DAILY
RELEASE DETECTION: CALLER STATED THAT THE RP EMITS A HEAVY ODOR OF ACID FROM THREE LARGE BUCKETS IN THE BACK YARD OF THE PROPERTY DURING DAILY OPERATIONS
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 630631
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: CALIFORNIA FAWCETS
ADDRESS: 5342 OCEANUS DRIVE
HUNTINGTON BEACH CA 92649

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 263 **DIST/DIR:** 0.51 NE **ELEVATION:** 16 **MAP ID:** 53

NAME: NOTTHOFF ENGINEERING-LA-INC
ADDRESS: 5416 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000276406
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 62 **DIST/DIR:** 0.52 SE **ELEVATION:** 14 **MAP ID:** 54

NAME: MONEY MAILER INC
ADDRESS: 15472 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982505760
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15472 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148989111

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 103 **DIST/DIR:** 0.52 NE **ELEVATION:** 16 **MAP ID:** 55

NAME: ZWICK ENERGY RESEARCH
ADDRESS: 5471 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983620808
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ART MONTANA
5471 ARGOSY DR
HUNTINGTON BEACH CA 92649

PHONE: 7148911640

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SPILLS

SEARCH ID: 152 **DIST/DIR:** 0.52 NE **ELEVATION:** 16 **MAP ID:** 56

NAME: CENTRILIFT
ADDRESS: 5421 ARGOSY AVE
HUNTINGTON BEACH CA 92648

CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: G_SL188063852
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *SL188063852*
LOCAL AGENCY:
LOCAL CASE NUMBER:
CASE TYPE: *Cleanup Program Site*
STATUS: *Open - Remediation*
STATUS DATE: *2002-06-13*
POTENTIAL CONTAMINANTS OF CONCERN:
POTENTIAL MEDIA AFFECTED:
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-01-30 00:00:00*
ACTION (blank if not reported): *2ND BI-ANNUAL FLUID LEVEL MONITORING AND GROUNDWATER SAMPLING REPORT - JUNE THROUGH DECEMBER 2008*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-07-17 00:00:00*
ACTION (blank if not reported): *First Semi-annual Groundwater Montoring Report*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-01-30 00:00:00*
ACTION (blank if not reported): *SECOND QUARTER 2009 NPDES REPORT*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-10-31 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-06-03 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

CONTACT TYPE: *Regional Board Caseworker*
CONTACT NAME: *MANECK G. CHICHGAR*
ORGANIZATION NAME: *SANTA ANA RWQCB (REGION 8)*
CONTACT ADDRESS: *3737 MAIN STREET, Suite 500*
CONTACT CITY: *RIVERSIDE*
CONTACT EMAIL: *mchichgar waterboards.ca.gov*
CONTACT PHONE NUMBER:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 286 **DIST/DIR:** 0.52 SE **ELEVATION:** 16 **MAP ID:** 57

NAME: SMC
ADDRESS: 5401 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000122108
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/2/1994*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5401 BUSINESS DR, HUNTINGTON BEACH, CA 92649-1225*
Owner Name: *GARY MCCONNELL*
Owner Address: *5401 BUSINESS DR, HUNTINGTON BEACH, CA 92649-1225*
Contact Name: *GARY F MCCONNELL/PRESIDENT*
Contact Address: *5401 BUSINESS DR, HUNTINGTON BEACH, CA 92649-1225*
Contact Phone: *7148954381*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *1.6*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type: *Waste oil and mixed oil*
2000 Total Tonnage: *1.04*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type: *Waste oil and mixed oil*
1997 Total Tonnage: *0.417*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 286 **DIST/DIR:** 0.52 SE **ELEVATION:** 16 **MAP ID:** 57

NAME: SMC
ADDRESS: 5401 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000122108
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 41 **DIST/DIR:** 0.53 NE **ELEVATION:** 16 **MAP ID:** 58

NAME: GENERAL ALUMINIUM FORGINGS INC
ADDRESS: 5302 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD099160079
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5302 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 7148915393

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 130 **DIST/DIR:** 0.53 NE **ELEVATION:** 16 **MAP ID:** 59

NAME: MCDONALD DOUGLAS SPACE SY
ADDRESS: 5301 BOSLA AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: EPA

REV: 10/8/1990
ID1: 182420
ID2:
STATUS: FIXED FACILITY
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 266 **DIST/DIR:** 0.53 SE **ELEVATION:** 12 **MAP ID:** 60

NAME: OLIPHANT TOOL CO
ADDRESS: 15652 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000146007
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *9/3/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15652 CHEMICAL LANE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *WILLIAM and DIANA OLIPHANT*
Owner Address: *15652 CHEMICAL LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *DIANA OLIPHANT/PARTNER*
Contact Address: *15652 CHEMICAL LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7149036336*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Oil/water separation sludge*
2009 Total Tonnage: *1.2093*
2008 Waste Type: *Oil/water separation sludge*
2008 Total Tonnage: *2.2935*
2007 Waste Type: *Oil/water separation sludge*
2007 Total Tonnage: *2.7105*
2006 Waste Type: *Oil/water separation sludge*
2006 Total Tonnage: *2.06*
2005 Waste Type: *Unspecified oil-containing waste*
2005 Total Tonnage: *2.26*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Unspecified oil-containing waste*
2004 Total Tonnage: *3.85*
2003 Waste Type: *Unspecified oil-containing waste*
2003 Total Tonnage: *4.69*
2002 Waste Type: *Unspecified oil-containing waste*
2002 Total Tonnage: *1.05*
2001 Waste Type: *Unspecified oil-containing waste*
2001 Total Tonnage: *2.96*
2000 Waste Type: *Unspecified oil-containing waste*
2000 Total Tonnage: *2.85*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Metal sludge (see 121)*
1999 Total Tonnage: *2.4*
1998 Waste Type: *Metal sludge (see 121)*
1998 Total Tonnage: *1.25*
1997 Waste Type: *Unspecified oil-containing waste*
1997 Total Tonnage: *2.919*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 266 **DIST/DIR:** 0.53 SE **ELEVATION:** 12 **MAP ID:** 60

NAME: OLIPHANT TOOL CO
ADDRESS: 15652 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000146007
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 4 **DIST/DIR:** 0.54 SE **ELEVATION:** 13 **MAP ID:** 61

NAME: ACPT
ADDRESS: 15602 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000058164
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JAMES LESLIE
15602 CHEMICAL LN
HUNTINGTON BEACH CA 926491507

PHONE: 7148955544

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 39 **DIST/DIR:** 0.55 SE **ELEVATION:** 14 **MAP ID:** 62

NAME: FINISHLINE FINISHING
ADDRESS: 15541 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982487092
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15541 CHEMICAL LN
HUNTINGTON BEACH CA 92649

PHONE: 7148956112

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 63 **DIST/DIR:** 0.55 SE **ELEVATION:** 14 **MAP ID:** 63

NAME: MS BELLOWS
ADDRESS: 5322 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982021412
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5322 MCFADDEN AVE
HUNTINGTON BEACH CA 92649

PHONE: 7148985602

UNIVERSE INFORMATION:

NAIC INFORMATION

334519 - OTHER MEASURING AND CONTROLLING DEVICE MANUFACTURING
334518 - WATCH, CLOCK, AND PART MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 11/23/2004
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 11/23/2004
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** B - STATE CONTRACTOR
DETERMINED: 10/14/2004 **DETERMINED BY:** B - STATE CONTRACTOR
CITATION:
RESOLVED: 11/23/2004
TYPE: GENERATOR-GENERAL REQUIREMENTS

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 276 **DIST/DIR:** 0.55 SE **ELEVATION:** 12 **MAP ID:** 64

NAME: R and M MANUFACTURING INC
ADDRESS: 15683 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000286179
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 20 **DIST/DIR:** 0.56 NE **ELEVATION:** 16 **MAP ID:** 65

NAME: CALIFORNIA FAUCETS
ADDRESS: 5342 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000093450
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ADELE SANCHEZ
5342 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 7148917797

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Corrosive waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 69 **DIST/DIR:** 0.56 NE **ELEVATION:** 16 **MAP ID:** 66

NAME: PACE INCORPORATED
ADDRESS: 5702 BOLSA CHICA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982417081
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: COURTNEY LINDSAY
5702 BOLSA AVENUE
HUNTINGTON AVENUE CA 92649

PHONE: 7148922565

UNIVERSE INFORMATION:

NAIC INFORMATION

514199 - ALL OTHER INFORMATION SERVICES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 125 **DIST/DIR:** 0.56 SE **ELEVATION:** 12 **MAP ID:** 67

NAME: IN THE BACK OF THE BUILDING
ADDRESS: 15697 CHEMICAL LANE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/02
ID1: NRC-619744
ID2:
STATUS: FIXED
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 8/13/2002 12:50:45 PM **DATE COMPLETE:** 8/13/2002 1:17:09 PM
CALL TAKER: **CALL TYPE:** INC

RESPONSIBLE PARTY:
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: AIRDYNE
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS:
HUNTINGTON BEACH CA 92649

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: CALLER REPORTS THAT MACHINES ARE CLEANING OUT COOLING TANKS WITH A WATER HOSE AND LETTING OILY SUBSTANCE GO INTO THE SEWER.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	OTHER
INCIDENT DATE:	8/13/2002 9:53:00 AM	**INCIDENT DATE DESC:**	DISCOVERED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
AIRCRAFT TYPE:	UNKNOWN	**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	OTHER	**POWER GEN FACILITY:**	NO
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	UNKNOWN
PIPELINE TYPE:		**DOT REGULATED:**	UNKNOWN
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	NO
PIPELINE COVERED:	UNKNOWN	**GRADE CROSSING:**	NO
LOCATION SUBDIVISION:		**RAILROAD MILEPOST:**	
TYPE VEHICLE INVOLVED:		**CROSSING DEVICE TYPE:**	
DEVICE OPERATIONAL:	YES		

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 125 **DIST/DIR:** 0.56 SE **ELEVATION:** 12 **MAP ID:** 67

NAME: IN THE BACK OF THE BUILDING
ADDRESS: 15697 CHEMICAL LANE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/02
ID1: NRC-619744
ID2:
STATUS: FIXED
PHONE:

DOT CROSSING NUMBER:		**BRAKE FAILURE:**	NO
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	UNKNOWN
TANK REGULATED:	UNKNOWN	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	NO	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	UNKNOWN
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	NO	**FIRE EXTINGUISHED:**	UNKNOWN
ANY EVACUATIONS:	NO	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	NO	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	NO
NUMBER FATALITIES:		**ANY DAMAGES:**	NO
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	NO
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	NO	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	NO
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	NO
TRACK CLOSED:	NO	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	WATER	**ADDTL MEDIUM INFO:**	UNKNOWN
BODY OF WATER:	UNKNOWN	**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	UNKNOWN
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	NO REPORT	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:		**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	UNKNOWN	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 125 **DIST/DIR:** 0.56 SE **ELEVATION:** 12 **MAP ID:** 67

NAME: IN THE BACK OF THE BUILDING
ADDRESS: 15697 CHEMICAL LANE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/02
ID1: NRC-619744
ID2:
STATUS: FIXED
PHONE:

DESC OF REMEDIAL ACTION: UNKNOWN

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	NO	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: REPORTING PARTY UNCOOPERATIVE WITH NRC WATCHSTANDER AND DISCONNECTED BEFORE COMPLETION OF NRC REPORT.

MATERIAL INFORMATION

CHRIS CODE:	OUN	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	YES

NAME OF MATERIAL: UNKNOWN OILY SUBSTANCE MIXED WITH WATER
AMOUNT OF MATERIAL: 0 UNKNOWN AMOUNT
AMOUNT IN WATER: 0 UNKNOWN AMOUNT

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 208 **DIST/DIR:** 0.56 NE **ELEVATION:** 16 **MAP ID:** 68

NAME: ALL WEST PLASTICS INC
ADDRESS: 5451 ARGOSY
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000258698
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 31 **DIST/DIR:** 0.57 SE **ELEVATION:** 14 **MAP ID:** 69

NAME: DEL CRAFT PLASTICS
ADDRESS: 15581 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981434541
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15581 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148910118

UNIVERSE INFORMATION:

NAIC INFORMATION

326199 - ALL OTHER PLASTICS PRODUCT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 85 **DIST/DIR:** 0.57 SE **ELEVATION:** 14 **MAP ID:** 70

NAME: SPEEDY CIRCUITS-A DIV. OF PJC TECH. INC.
ADDRESS: 5332 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD021221304
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5332 COMMERCIAL DRIVE
HUNTINGTON BEACH CA 92649

PHONE: 7148984901

UNIVERSE INFORMATION:

NAIC INFORMATION

334412 - BARE PRINTED CIRCUIT BOARD MANUFACTURING
334418 - PRINTED CIRCUIT ASSEMBLY (ELECTRONIC ASSEMBLY) MANUFACTURING
334412 - BARE PRINTED CIRCUIT BOARD MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	B - STATE CONTRACTOR
DETERMINED:	3/8/1993	**DETERMINED BY:**	B - STATE CONTRACTOR
CITATION:	262.10-12.A		
RESOLVED:	3/24/1994		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		

HAZARDOUS WASTE INFORMATION:

Corrosive waste
Lead
Spent cyanide plating bath solutions from electroplating operations.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 270 **DIST/DIR:** 0.57 SE **ELEVATION:** 15 **MAP ID:** 71

NAME: PLASMA SYSTEMS INC
ADDRESS: 5452 BUSINESS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000275491
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 271 **DIST/DIR:** 0.57 SE **ELEVATION:** 14 **MAP ID:** 72

NAME: PLASTIC CONCEPT INC
ADDRESS: 15602 CONTAINER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000298347
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 177 **DIST/DIR:** 0.58 SE **ELEVATION:** 14 **MAP ID:** 73

NAME: GRANI INSTALLATION
ADDRESS: 5411 COMMERCIAL
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE34027
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

UST

SEARCH ID: 178 **DIST/DIR:** 0.58 SE **ELEVATION:** 14 **MAP ID:** 73

NAME: GRANI INSTALLATION
ADDRESS: 5411 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO350
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION

According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0024452*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 207 **DIST/DIR:** 0.58 SE **ELEVATION:** 12 **MAP ID:** 74

NAME: ALEXANDER S PRECISION MACHINING INC
ADDRESS: 15731 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000288692
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 229 **DIST/DIR:** 0.58 SE **ELEVATION:** 14 **MAP ID:** 75

NAME: DENNIS and SONS MACHINERY SALES INC DBA PM MACHINES
ADDRESS: 5451 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000308017
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 248 **DIST/DIR:** 0.58 SE **ELEVATION:** 12 **MAP ID:** 76

NAME: HYDROSPIN
ADDRESS: 5281 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000157478
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/6/1996*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5281 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1540*
Owner Name: *LUXFER INC*
Owner Address: *5281 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1540*
Contact Name: *JIM ANDERSEN*
Contact Address: *5281 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1540*
Contact Phone: *7148988041*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2008 Total Tonnage: *0.231*
2007 Waste Type: *Liquids with pH <= 2*
2007 Total Tonnage: *8.2566*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *1.04*
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *18.2*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *0.23*
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *8.92*
2002 Waste Type: *Other organic solids*
2002 Total Tonnage: *7.1*
2001 Waste Type: *Other organic solids*
2001 Total Tonnage: *2.02*
2000 Waste Type: *Other organic solids*
2000 Total Tonnage: *2.55*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Waste oil and mixed oil*
1999 Total Tonnage: *1.326*
1998 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
1998 Total Tonnage: *1.251*
1997 Waste Type: *Waste oil and mixed oil*
1997 Total Tonnage: *2.0641*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 248 **DIST/DIR:** 0.58 SE **ELEVATION:** 12 **MAP ID:** 76

NAME: HYDROSPIN
ADDRESS: 5281 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000157478
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 279 **DIST/DIR:** 0.58 NE **ELEVATION:** 16 **MAP ID:** 77

NAME: S/R INDUSTRIES
ADDRESS: 5482 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000181927
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/14/1998*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5482 ARGOSY DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *S R INDUSTRIES*
Owner Address: *676 ELM ST, CONCORD, MA 01742-0000*
Contact Name: *P HERNANDEZ-PRODUCTION SUPVR*
Contact Address: *5482 ARGOSY DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148987535*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Unspecified oil-containing waste*
2009 Total Tonnage: *0.22935*
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type: *Waste oil and mixed oil*
2007 Total Tonnage: *0.22935*
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *0.91*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2004 Total Tonnage: *1.14*
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type: *Waste oil and mixed oil*
2002 Total Tonnage: *1.14*
2001 Waste Type: *Waste oil and mixed oil*
2001 Total Tonnage: *2.5*
2000 Waste Type: *Other inorganic solid waste*
2000 Total Tonnage: *0.31*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Other inorganic solid waste*
1999 Total Tonnage: *0.025*
1998 Waste Type: *Unspecified organic liquid mixture*
1998 Total Tonnage: *0.2293*
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 279 **DIST/DIR:** 0.58 NE **ELEVATION:** 16 **MAP ID:** 77

NAME: S/R INDUSTRIES
ADDRESS: 5482 ARGOSY DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000181927
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 114 **DIST/DIR:** 0.59 SE **ELEVATION:** 14 **MAP ID:** 78

NAME: SEVENSTRAND TACKLE CORP
ADDRESS: 5401 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD981383292
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5401 MCFADDEN AVE
HUNTINGTON BEACH CA 92649

PHONE: 7148912431

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 147 **DIST/DIR:** 0.59 SE **ELEVATION:** 12 **MAP ID:** 79

NAME:
ADDRESS: 5281 RESEARCH DR
HUNTINGTON CA 92649
ORANGE
CONTACT: JIM ANDERSEN
SOURCE: NRC

REV: 12/31/05
ID1: NRC-753680
ID2:
STATUS: STORAGE TANK
PHONE: 7148988041

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 3/24/2005 5:15:55 PM **DATE COMPLETE:** 3/24/2005 5:20:05 PM
CALL TAKER: NCT7613 **CALL TYPE:** INC

RESPONSIBLE PARTY: JIM ANDERSEN
PHONE 1: 7148988041 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: HYDRO SPIN
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 5281 RESEARCH DR
HUNTINGTON CA 92649

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE MATERIAL RELEASED FROM A RECYCLING METAL BIN DUE TO OPERATOR ERROR.

INCIDENT TYPE: STORAGE TANK **INCIDENT CAUSE:** OPERATOR ERROR
INCIDENT DATE: 3/24/2005 11:00:00 AM **INCIDENT DATE DESC:** OCCURRED
DISTANCE FROM CITY: **DISTANCE UNITS:**
DIRECTION FROM CITY: **LOCATION SECTION:**
LOCATION TOWNSHIP: **LOCATION RANGE:**

AIRCRAFT TYPE: **AIRCRAFT MODEL:**
AIRCRAFT ID: **AIRCRAFT FUEL CAPACITY:**
AIRCRAFT FUEL CAPACITY UNITS: **AIRCRAFT FUEL ON BOARD:**
AIRCRAFT FUEL ON BOARD UNITS: **AIRCRAFT SPOT NUMBER:**
AIRCRAFT HANGER: **AIRCRAFT RUNWAY NUM:**
ROAD MILE MARKER: **BUILDING ID:**
TYPE OF FIXED OBJECT: **POWER GEN FACILITY:** U
GENERATING CAPACITY: **TYPE OF FUEL:**
NPDES: **NPDES COMPLIANCE:** U
PIPELINE TYPE: **DOT REGULATED:** U
PIPELINE ABOVE GROUND: ABOVE **EXPOSED UNDERWATER:** N
PIPELINE COVERED: U **GRADE CROSSING:** N
LOCATION SUBDIVISION: **RAILROAD MILEPOST:**
TYPE VEHICLE INVOLVED: **CROSSING DEVICE TYPE:**
DEVICE OPERATIONAL: Y

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 147 **DIST/DIR:** 0.59 SE **ELEVATION:** 12 **MAP ID:** 79

NAME:
ADDRESS: 5281 RESEARCH DR
HUNTINGTON CA 92649
ORANGE
CONTACT: JIM ANDERSEN
SOURCE: NRC

REV: 12/31/05
ID1: NRC-753680
ID2:
STATUS: STORAGE TANK
PHONE: 7148988041

DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	Y
TANK REGULATED:	N	**TANK REGULATED BY:**	
TANK ID:	UNKNOWN	**CAPACITY OF TANK:**	0
CAPACITY OF TANK UNITS:	UNKNOWN AMOUNT	**ACTUAL AMOUNT:**	0
ACTUAL AMOUNT UNITS:	UNKNOWN AMOUNT	**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK: RECYCLING METAL BIN

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	ASPHALT
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	H0502973	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	PARTLY CLOUDY	**AIR TEMPERATURE:**	65
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 147 **DIST/DIR:** 0.59 SE **ELEVATION:** 12 **MAP ID:** 79

NAME:
ADDRESS: 5281 RESEARCH DR
HUNTINGTON CA 92649
ORANGE
CONTACT: JIM ANDERSEN
SOURCE: NRC

REV: 12/31/05
ID1: NRC-753680
ID2:
STATUS: STORAGE TANK
PHONE: 7148988041

DESC OF REMEDIAL ACTION: CLEAN UP UNDERWAY, MATERIAL CONTAINED

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	PUBLIC WORKS, FIRE DEPT
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: NO ADDITIONAL INFORMATION.

MATERIAL INFORMATION

CHRIS CODE:	NCC	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: DASCOOL (LIQUID)
AMOUNT OF MATERIAL: 20 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SPILLS

SEARCH ID: 154 **DIST/DIR:** 0.59 SE **ELEVATION:** 13 **MAP ID:** 80

NAME: KAYMOR PLATING
ADDRESS: 15751 CHEMICAL LANE
HUNTINGTON BEACH CA

CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: G_SLT8R0463931
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *SLT8R046*
LOCAL AGENCY:
LOCAL CASE NUMBER:
CASE TYPE: *Cleanup Program Site*
STATUS: *Completed - Case Closed*
STATUS DATE: *1998-06-01*
POTENTIAL CONTAMINANTS OF CONCERN:
POTENTIAL MEDIA AFFECTED:
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

CONTACT TYPE: *Regional Board Caseworker*
CONTACT NAME: *KAMRON SAREMI*
ORGANIZATION NAME: *SANTA ANA RWQCB (REGION 8)*
CONTACT ADDRESS: *3737 MAIN STREET, SUITE 500*
CONTACT CITY: *RIVERSIDE*
CONTACT EMAIL: *ksaremi waterboards.ca.gov*
CONTACT PHONE NUMBER: *9517824130*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 6 **DIST/DIR:** 0.60 SE **ELEVATION:** 13 **MAP ID:** 81

NAME: AMERICAN EAGLE WHEEL CORP
ADDRESS: 15622 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981666738
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

332999 - ALL OTHER MISCELLANEOUS FABRICATED METAL PRODUCT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 205 **DIST/DIR:** 0.60 NE **ELEVATION:** 16 **MAP ID:** 82

NAME: AERODYNE PRECISION MACHINING
ADDRESS: 5471 ARGOSY AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000272145
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 222 **DIST/DIR:** 0.60 NE **ELEVATION:** 16 **MAP ID:** 83

NAME: COASTWIDE MARKING SERVICES
ADDRESS: 5445 OCEANUS STE 112 DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000287575
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 231 **DIST/DIR:** 0.60 SE **ELEVATION:** 15 **MAP ID:** 84

NAME: EVERLASTING GARDENS INC
ADDRESS: 5452 MC FADDEN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000271517
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 13 **DIST/DIR:** 0.62 NE **ELEVATION:** 16 **MAP ID:** 85

NAME: BROWNIE S CLEANERS
ADDRESS: 5422 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982461519
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5422 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 7143733867

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 60 **DIST/DIR:** 0.62 NE **ELEVATION:** 16 **MAP ID:** 86

NAME: METRI TECH INC
ADDRESS: 5411 OCEANUS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983666462
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: OVIDIU APAHIDEAN
5411 OCEANUS DR
HUNTINGTON BEACH CA 92649

PHONE: 7148951362

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

UST

SEARCH ID: 180 **DIST/DIR:** 0.62 NE **ELEVATION:** 16 **MAP ID:** 87

NAME: KAISER / G T E
ADDRESS: 5832 BOLSA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE33740
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 257 **DIST/DIR:** 0.62 SE **ELEVATION:** 12 **MAP ID:** 88

NAME: M J C ENGINEERING and TECHNOLOGY INC
ADDRESS: 15701 CONTAINER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000190523
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *9/20/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15701 CONTAINER LANE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *MJC ENGINEERING and TECH. INC*
Owner Address: *15701 CONTAINER LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *PER CARLSON-GENERAL MANAGER*
Contact Address: *15701 CONTAINER LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148900618*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Unspecified oil-containing waste*
2009 Total Tonnage: *0.22935*
2008 Waste Type: *Unspecified oil-containing waste*
2008 Total Tonnage: *0.22935*
2007 Waste Type: *Other organic solids*
2007 Total Tonnage: *0.05*
2006 Waste Type: *Unspecified oil-containing waste*
2006 Total Tonnage: *0.83*
2005 Waste Type: *Unspecified oil-containing waste*
2005 Total Tonnage: *0.22*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *0.05*
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *0.35*
2002 Waste Type: *Unspecified oil-containing waste*
2002 Total Tonnage: *0.22*
2001 Waste Type: *Unspecified organic liquid mixture*
2001 Total Tonnage: *0.68*
2000 Waste Type: *Unspecified organic liquid mixture*
2000 Total Tonnage: *0.22*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Unspecified oil-containing waste*
1999 Total Tonnage: *0.2293*
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 257 **DIST/DIR:** 0.62 SE **ELEVATION:** 12 **MAP ID:** 88

NAME: M J C ENGINEERING and TECHNOLOGY INC
ADDRESS: 15701 CONTAINER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000190523
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 73 **DIST/DIR:** 0.63 NE **ELEVATION:** 16 **MAP ID:** 89

NAME: PUBLISHERS PRESS
ADDRESS: 15121 GRAHAM NO 104
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0000070516
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: EDWARD N BYNON
15121 GRAHAM NO 104
HUNTINGTON BEACH CA 92649

PHONE: 7148936693

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 76 **DIST/DIR:** 0.63 SE **ELEVATION:** 14 **MAP ID:** 90

NAME: ROCK INDUSTRIES INC
ADDRESS: 5402 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD981455728
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5402 COMMERCIAL DR
HUNTINGTON BEACH CA 92649

PHONE: 7148911750

UNIVERSE INFORMATION:

NAIC INFORMATION

334412 - BARE PRINTED CIRCUIT BOARD MANUFACTURING
335931 - CURRENT-CARRYING WIRING DEVICE MANUFACTURING
334412 - BARE PRINTED CIRCUIT BOARD MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001
DETERMINED: 10/19/2004
CITATION:
RESOLVED:
TYPE: GENERATOR-GENERAL REQUIREMENTS

RESPONSIBLE: B - STATE CONTRACTOR
DETERMINED BY: B - STATE CONTRACTOR

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 77 **DIST/DIR:** 0.63 SE **ELEVATION:** 12 **MAP ID:** 91

NAME: ROGERS MANUFACTURING INC
ADDRESS: 15675 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982403149
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15675 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148940100

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 109 **DIST/DIR:** 0.63 SE **ELEVATION:** 14 **MAP ID:** 92

NAME: LUSTRE-CAL NAMEPLATE CORP
ADDRESS: 5481A COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD981388283
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5481A COMMERCIAL DR
HUNTINGTON BEACH CA 92649

PHONE: 2093346263

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SPILLS

SEARCH ID: 155 **DIST/DIR:** 0.63 SE **ELEVATION:** 12 **MAP ID:** 93

NAME: KAYMOR PLATING
ADDRESS: 15751 CHEMICAL LANE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: CA EPA

REV: 07/01/2003
ID1: SLC8_130
ID2:
STATUS: CLOSED
PHONE:

Lead Agency: *REGIONAL BOARD*
Program: *SLIC*
Case Type: *SOIL AND GROUNDWATER*
Status: *CLOSED*
Substance: *SOLVENT*
Comments:
Thomas Brothers Guide Location: *828-D5*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 17 **DIST/DIR:** 0.64 SE **ELEVATION:** 13 **MAP ID:** 94

NAME: CAL-AURUM INDUSTRIES
ADDRESS: 15632 CONTAINER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAT080031552
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
14906 DILLOW STREET
WESTMINSTER CA 92683

PHONE:

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15632 CONTAINER LN
HUNTINGTON BEACH CA 92649

PHONE: 7148973536

UNIVERSE INFORMATION:

NAIC INFORMATION

332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001
DETERMINED: 1/21/1993
CITATION: 262.10-12.A
RESOLVED: 6/23/1994
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
RESPONSIBLE: B - STATE CONTRACTOR
DETERMINED BY: B - STATE CONTRACTOR

HAZARDOUS WASTE INFORMATION:

Ignitable waste
Reactive waste
Plating bath residues from the bottom of plating baths from electroplating operations in which cyanides are used in the process.
Spent cyanide plating bath solutions from electroplating operations.
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel;
Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process.
Chromium
Silver
Lead
Corrosive waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 45 **DIST/DIR:** 0.64 SE **ELEVATION:** 12 **MAP ID:** 95

NAME: HONEMASTERS INC
ADDRESS: 15689 CHEMICAL LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983618281
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: GARY SYLVESTER
15689 CHEMICAL LN
HUNTINGTON BEACH CA 92649

PHONE: 7148922519

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 47 **DIST/DIR:** 0.64 SE **ELEVATION:** 13 **MAP ID:** 96

NAME: HYDROSPIN
ADDRESS: 5281 RESEARCH DR
HUNTINGTON BEACH CA 92649
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000181552
ID2:
STATUS: LGN
PHONE:

CONTACT INFORMATION:

JIM J ANDERSEN
714-898-8041 244
JANDERSEN US.LUXFERCYLINDERS.COM

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA CA BASELINE UNIVERSE:	*NO*
GPRA CA 2008:	*NO*

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	NO
SUBJCA TSD 3004:	NO
SUBJCA NON TSD:	NO
SUBJCA TSD DISCRETION:	NO

PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----

PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	NO
GENERATOR STATUS:	LQG
TRANSPORTER:	NO
UNIVERSAL WASTE:	NO
RECYCLER:	NO
USED OIL:	NO
IMPORTER:	NO
MIXED WASTE GENERATOR:	NO
ONSITE BURNER EXEMPT:	NO
FURNACE EXEMPTION:	NO
UNDERGROUND INJECTION:	NO

NAIC 1:	All Other Miscellaneous Fabricated Metal Product Manufacturing
NAIC 2:	
NAIC 3:	
NAIC 4:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 48 **DIST/DIR:** 0.64 SE **ELEVATION:** 13 **MAP ID:** 96

NAME: HYDROSPIN
ADDRESS: 5281 RESEARCH DR
HUNTINGTON BEACH CA 92649
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAL000157478
ID2:
STATUS: SGN
PHONE:

CONTACT INFORMATION:

JIM J ANDERSEN
7148988041 244
JANDERSEN US.LUXFERCYLINDERS.COM

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA CA BASELINE UNIVERSE:	*NO*
GPRA CA 2008:	*NO*

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	NO
SUBJCA TSD 3004:	NO
SUBJCA NON TSD:	NO
SUBJCA TSD DISCRETION:	NO

PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----

PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	NO
GENERATOR STATUS:	SQG
TRANSPORTER:	NO
UNIVERSAL WASTE:	NO
RECYCLER:	NO
USED OIL:	NO
IMPORTER:	NO
MIXED WASTE GENERATOR:	N
ONSITE BURNER EXEMPT:	NO
FURNACE EXEMPTION:	NO
UNDERGROUND INJECTION:	NO

NAIC 1:	All Other Miscellaneous Fabricated Metal Product Manufacturing
NAIC 2:	
NAIC 3:	
NAIC 4:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 49 **DIST/DIR:** 0.64 SE **ELEVATION:** 13 **MAP ID:** 96

NAME: HYDROSPIN
ADDRESS: 5281 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000161552
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	N - NO
SUBJCA TSD 3004:	N - NO
SUBJCA NON TSD:	N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):	N - NO
BEGINNING OF THE YEAR SNC:	
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	N - NO
GENERATOR STATUS:	LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE
INSTITUTIONAL CONTROL:	N
HUMAN EXPOSURE:	
GW CONTROLS:	
LAND TYPE:	P

NAIC INFORMATION

331316 - ALUMINUM EXTRUDED PRODUCT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

D002 - CORROSIVE WASTE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 74 **DIST/DIR:** 0.64 SE **ELEVATION:** 14 **MAP ID:** 97

NAME: RAY FOSTER DENTAL EQUIP
ADDRESS: 5421 COMMERCIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0000070532
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: MARK FOSTER
5421 COMMERCIAL DR
HUNTINGTON BEACH CA 92649

PHONE: 7148977795

UNIVERSE INFORMATION:

NAIC INFORMATION

339114 - DENTAL EQUIPMENT AND SUPPLIES MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 105 **DIST/DIR:** 0.64 NE **ELEVATION:** 16 **MAP ID:** 98

NAME: BAKER SERVICE TOOLS
ADDRESS: 5501 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD983619354
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JIM MICK
15421 ASSEMBLY LN
HUNTINGTON BEACH CA 92649

PHONE: 7148918544

UNIVERSE INFORMATION:

NAIC INFORMATION

213112 - SUPPORT ACTIVITIES FOR OIL AND GAS OPERATIONS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 304 **DIST/DIR:** 0.64 SE **ELEVATION:** 14 **MAP ID:** 99

NAME: WELD-RITE INC
ADDRESS: 15601 INDUSTRY LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000325334
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 275 **DIST/DIR:** 0.65 NE **ELEVATION:** 16 **MAP ID:** 100

NAME: QUIKSILVER, INC
ADDRESS: 15202 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000267026
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 30 **DIST/DIR:** 0.66 SE **ELEVATION:** 12 **MAP ID:** 101

NAME: CUSTOM EUROPEAN MTRS
ADDRESS: 15731 CHEMICAL
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983589060
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: DUNN BRADLEY
15731 CHEMICAL
HUNTINGTON BEACH CA 92649

PHONE: 7148945767

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 53 **DIST/DIR:** 0.66 SE **ELEVATION:** 12 **MAP ID:** 102

NAME: KAYS PRECISION MFG CORP
ADDRESS: 15721 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982013765
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15721 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148980333

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 88 **DIST/DIR:** 0.66 SE **ELEVATION:** 14 **MAP ID:** 103

NAME: SUNSHINE DESIGN
ADDRESS: 5451 COMMERCIAL
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982443863
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5451 COMMERCIAL
HUNTINGTON BEACH CA 92649

PHONE: 7148957824

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 93 **DIST/DIR:** 0.66 SE **ELEVATION:** 14 **MAP ID:** 104

NAME: TILCO ENGINEERING INC
ADDRESS: 5421 MCFADDEN AVE UNIT B
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983657586
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: MARVIN COMBS
5421 MCFADDEN AVE UNIT B
HUNTINGTON BEACH CA 92649

PHONE: 7148972320

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 287 **DIST/DIR:** 0.66 SE **ELEVATION:** 12 **MAP ID:** 105

NAME: SNOW and SNOW ENTERPRISES INC DBA RON CATT AUTOMOTIV
ADDRESS: 15841 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000310141
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 87 **DIST/DIR:** 0.67 SE **ELEVATION:** 12 **MAP ID:** 106

NAME: SUMMIT STEEL
ADDRESS: 15751 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD008391872
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: FOURMONT THOMAS
15751 CHEMICAL LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148983433

UNIVERSE INFORMATION:

NAIC INFORMATION

332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 90 **DIST/DIR:** 0.67 SE **ELEVATION:** 16 **MAP ID:** 107

NAME: THE BOEING CO. C-13 QUICK RESPONSE SHOP
ADDRESS: 15400 GRAHAM ST STE 101
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000112094
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: RON FORNATOR
2401 E WARDLOW RD C174 0010
LONG BEACH CA 908075309

PHONE: 5625933836

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001
DETERMINED: 9/7/2005
CITATION: 262.41
RESOLVED:
TYPE: GENERATOR-OTHER REQUIREMENTS

RESPONSIBLE: E - EPA
DETERMINED BY: E - EPA

HAZARDOUS WASTE INFORMATION:

Chromium
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
Mercury
Ignitable waste
D000
Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel;
Corrosive waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 244 **DIST/DIR:** 0.67 NE **ELEVATION:** 18 **MAP ID:** 108

NAME: HEWITT INDUSTRIES OF L.A.
ADDRESS: 5492 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000069659
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *10/16/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5492 BOLSA AVE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *HEWITT INDS OF LOS ANGELES*
Owner Address: *5492 BOLSA AVENUE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *SONIA V. HEWITT, BOOKKEEPER*
Contact Address: *5492 BOLSA AVE, HUNTINGTON BEACH, CA 92649-1021*
Contact Phone: *7148919300*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 244 **DIST/DIR:** 0.67 NE **ELEVATION:** 18 **MAP ID:** 108

NAME: HEWITT INDUSTRIES OF L.A.
ADDRESS: 5492 BOLSA AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000069659
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 259 **DIST/DIR:** 0.67 SE **ELEVATION:** 14 **MAP ID:** 109

NAME: MICROFLEX TECHNOLOGIES LLC
ADDRESS: 15538 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000262533
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 37 **DIST/DIR:** 0.69 NE **ELEVATION:** 16 **MAP ID:** 110

NAME: EXCEL INDUSTRIES
ADDRESS: 5531 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981668106
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 96 **DIST/DIR:** 0.69 SE **ELEVATION:** 14 **MAP ID:** 111

NAME: ULTRA TOOL INTERNATIONAL
ADDRESS: 5451 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981696487
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 111 **DIST/DIR:** 0.69 SE **ELEVATION:** 12 **MAP ID:** 112

NAME: MOPARTS CORP
ADDRESS: 5382 REARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD981651474
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5382 REARCH DR
HUNTINGTON BEACH CA 92649

PHONE: 7148913578

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 233 **DIST/DIR:** 0.69 SE **ELEVATION:** 14 **MAP ID:** 113

NAME: FACTORY WORKS
ADDRESS: 15631 GRAHAM STE CandD ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000254808
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/27/2002 3:50:55 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15631 GRAHAM ST STE CandD, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *GARY TOPAL*
Owner Address: *15631 GRAHAM ST D/E, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *GARY TOPAL OWNER*
Contact Address: *15631 GRAHAM ST, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7143734828*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 233 **DIST/DIR:** 0.69 SE **ELEVATION:** 14 **MAP ID:** 113

NAME: FACTORY WORKS
ADDRESS: 15631 GRAHAM STE CandD ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000254808
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 247 **DIST/DIR:** 0.69 SE **ELEVATION:** 13 **MAP ID:** 114

NAME: HUNTINGTON BEACH HOGS and CHOPPERS
ADDRESS: 15588 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000329250
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 28 **DIST/DIR:** 0.70 SE **ELEVATION:** 12 **MAP ID:** 115

NAME: CORTEC INC
ADDRESS: 15811 CHEMICAL LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981378177
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 232 **DIST/DIR:** 0.70 SE **ELEVATION:** 14 **MAP ID:** 116

NAME: EVOLUTION MOTORSPORTS INC DBA EVOSPORT
ADDRESS: 15608 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000290537
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 269 **DIST/DIR:** 0.70 SE **ELEVATION:** 12 **MAP ID:** 117

NAME: PAVCO INDUSTRIES INC
ADDRESS: 5285 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000191591
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/21/2000*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5285 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *PAVCO INDUSTRIES INC*
Owner Address: *5285 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *ANITA ANGDAHL/BOOKKEEPER/SEC*
Contact Address: *5285 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148951522*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2009 Total Tonnage: *0.168*
2008 Waste Type: *Unspecified oil-containing waste*
2008 Total Tonnage: *0.1668*
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Unspecified organic liquid mixture*
2005 Total Tonnage: *1.83*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Alkaline solution without metals pH >= 12.5*
2004 Total Tonnage: *0.06*
2003 Waste Type: *Alkaline solution without metals pH >= 12.5*
2003 Total Tonnage: *0.2*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Waste oil and mixed oil*
2001 Total Tonnage: *0.22*
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 269 **DIST/DIR:** 0.70 SE **ELEVATION:** 12 **MAP ID:** 117

NAME: PAVCO INDUSTRIES INC
ADDRESS: 5285 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000191591
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 67 **DIST/DIR:** 0.71 SE **ELEVATION:** 14 **MAP ID:** 118

NAME: OPTO MECH INC
ADDRESS: 5484 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983661133
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: DAVID BROWNING
5484 MCFADDEN AVE
HUNTINGTON BEACH CA 92649

PHONE: 7148942066

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 215 **DIST/DIR:** 0.71 SE **ELEVATION:** 9 **MAP ID:** 119

NAME: CHEVRON 93060
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000135810
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/3/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *PO BOX 6004, SAN RAMON, CA 94583-0000*
Owner Name: *CHERVON PRODUCTS CO*
Owner Address: *PO BOX 6004, SAN RAMON, CA 94583-0000*
Contact Name: *KATHY NORRIS*
Contact Address: *PO BOX 6004, SAN RAMON, CA 94583-0000*
Contact Phone: *9258425931*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type: *Unspecified solvent mixture*
1997 Total Tonnage: *2.502*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 215 **DIST/DIR:** 0.71 SE **ELEVATION:** 9 **MAP ID:** 119

NAME: CHEVRON 93060
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000135810
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 258 **DIST/DIR:** 0.71 SE **ELEVATION:** 9 **MAP ID:** 119

NAME: M K H PETROLEUM CORP
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000219429
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/20/2001*
Inactivity Date:
Facility Mail Name: *KAMBIZ ESFAHANI/PRESIDENT*
Facility Mailing Address: *5002 EDINGER AVE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *M K H PETROLUMN CORP*
Owner Address: *5002 EDINGER AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *KAMBIZ ESFAHANI*
Contact Address: *5002 EDINGER AVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148400522*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 258 **DIST/DIR:** 0.71 SE **ELEVATION:** 9 **MAP ID:** 119

NAME: M K H PETROLEUM CORP
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000219429
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 5 **DIST/DIR:** 0.72 SE **ELEVATION:** 14 **MAP ID:** 120

NAME: AERODYNAMIC ENGINEERING INC
ADDRESS: 15495 GRAHAM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981169816
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15495 GRAHAM
HUNTINGTON BEACH CA 92649

PHONE: 7148912651

UNIVERSE INFORMATION:

NAIC INFORMATION

333319 - OTHER COMMERCIAL AND SERVICE INDUSTRY MACHINERY MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 61 **DIST/DIR:** 0.72 NE **ELEVATION:** 16 **MAP ID:** 121

NAME: MIDWEST AIR TECHNOLOGIES INC
ADDRESS: 5600 ARGOSY CIR UNIT 200
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 12/9/02
ID1: CAP000074559
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE TYPE:

SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

SIC INFORMATION:

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 202 **DIST/DIR:** 0.72 SE **ELEVATION:** 14 **MAP ID:** 122

NAME: WEISER LOCK
ADDRESS: 5555 MCFADDEN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900970
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *083001252T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *89UT087*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water)*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1990-04-03*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 170 **DIST/DIR:** 0.72 SE **ELEVATION:** 14 **MAP ID:** 122

NAME: WEISER LOCK
ADDRESS: 5555 MC FADDEN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_89UT87
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type: *G*
Contract Status: *8*
Fund: *F*
Substance Code: *12034*
Description: *DIESEL*
Lead Refferal: *N*
Enforcement:
Date Closed: *04-30-90*

SPILLS

SEARCH ID: 156 **DIST/DIR:** 0.72 SE **ELEVATION:** 14 **MAP ID:** 122

NAME: WEISER LOCK
ADDRESS: 5555 MCFADDEN AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: CA EPA

REV: 07/01/2003
ID1: SLC8_137
ID2:
STATUS: REMEDIATION
PHONE:

Lead Agency: *REGIONAL BOARD*
Program: *SLIC*
Case Type: *SOIL AND GROUNDWATER*
Status: *REMEDIATION*
Substance: *SOLVENTS*
Comments: *REMEDIAL ACTIONS BEING IMPLEMENTED. VAPOR EXTRACTION AND GROUNDWATER PUMPING AND TREATMENT. GW MONITORING PROGRAM.*
Thomas Brothers Guide Location: *827-E5*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 254 **DIST/DIR:** 0.72 SE **ELEVATION:** 12 **MAP ID:** 123

NAME: KEHOE TESTING and ENGINEERING INC
ADDRESS: 5415 INDUSTRIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000322028
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 34 **DIST/DIR:** 0.73 NE **ELEVATION:** 16 **MAP ID:** 124

NAME: EBTEC CORP
ADDRESS: 5561 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981368814
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5561 ENGINEER DR
HUNTINGTON BEACH CA 92649

PHONE: 7148980775

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 82 **DIST/DIR:** 0.73 SE **ELEVATION:** 14 **MAP ID:** 125

NAME: SINA SCREEN PRINTING SHOP
ADDRESS: 15533 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983661125
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ABEE TAVAKOLI
15533 GRAHAM ST
HUNTINGTON BEACH CA 92649

PHONE: 7143734648

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 104 **DIST/DIR:** 0.73 SE **ELEVATION:** 12 **MAP ID:** 126

NAME: AM AND ASSOCIATES INC
ADDRESS: 5312 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD982470528
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: AL LANG
602 N CYPRESS ST
ORANGE CA 92667

PHONE: 7147441100

UNIVERSE INFORMATION:

NAIC INFORMATION

42269 - OTHER CHEMICAL AND ALLIED PRODUCTS WHOLESALERS
325998 - ALL OTHER MISCELLANEOUS CHEMICAL PRODUCT AND PREPARATION MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 99 **DIST/DIR:** 0.74 SE **ELEVATION:** 13 **MAP ID:** 127

NAME: WATER KEM LABORATORIES INC
ADDRESS: 15671 INDUSTRY LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982461733
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15671 INDUSTRY LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148927731

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 79 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 128

NAME: SCREEN ART
ADDRESS: 5306 INDUSTRIAL DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983669417
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: KIM PROCTOR
5306 INDUSTRIAL DR
HUNTINGTON BEACH CA 92649

PHONE: 7148914185

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 81 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL SERVICE STATION
ADDRESS: 16001 BOLSA CHICA BLVD
HUNTINGTON BEACH CA 92646
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000086827
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: SONDRA BIENVENU
P O BOX 2099
HOUSTON TX 77252

PHONE: 7132415036

UNIVERSE INFORMATION:

NAIC INFORMATION

44711 - GASOLINE STATIONS WITH CONVENIENCE STORES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Benzene
D000
Ignitable waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 198 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL OIL
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900283
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083000357T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *87UT143*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Aquifer used for drinking water supply*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Remediation*
STATUS DATE: *2004-06-29*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-12-22 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-03-25 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-08-24 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-03-01 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-03-16 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 198 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL OIL
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900283
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

DATE (blank if not reported): *2010-04-14 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-03-17 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-08-25 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-04-09 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-09-18 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-07-10 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-02-28 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-01-18 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-04-13 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-03-23 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-01-19 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-04-24 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-12-09 00:00:00*
ACTION (blank if not reported): *Staff Letter*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 198 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL OIL
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900283
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-09-01 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-09-18 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2001-02-17 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2000-04-17 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2001-02-16 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-05-22 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-02-23 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-06-29 00:00:00*
ACTION (blank if not reported): *Staff Letter - 1*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-12-06 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-06-29 00:00:00*
ACTION (blank if not reported): *Staff Letter - 2*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-08-10 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-05-05 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 198 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL OIL
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900283
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Began*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Dual Phase Extraction*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 184 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL (3594-1206)
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE33479
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

UST

SEARCH ID: 183 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL (135370)
ADDRESS: 16001 BOLSA CHICA ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO382
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION

According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0024961*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 167 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 129

NAME: SHELL OIL
ADDRESS: 16001 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_87UT143
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*G*
Contract Status:	*7*
Fund:	*F*
Substance Code:	*8006619*
Description:	*GASOLINE*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 94 **DIST/DIR:** 0.75 SE **ELEVATION:** 13 **MAP ID:** 130

NAME: TIODIZE CO INC
ADDRESS: 15701 INDUSTRY LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD042235226
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15701 INDUSTRY LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148984377

UNIVERSE INFORMATION:

NAIC INFORMATION

324191 - PETROLEUM LUBRICATING OIL AND GREASE MANUFACTURING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	B - STATE CONTRACTOR
DETERMINED:	12/30/1991	**DETERMINED BY:**	B - STATE CONTRACTOR
CITATION:	262.10-12.A		
RESOLVED:	11/10/1993		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 193 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: CHEVRON 9-3069
ADDRESS: 5002 EDINGER
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605902060
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083003017T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *97UT015*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Fuel Oxygenates, Gasoline*
POTENTIAL MEDIA AFFECTED: *Aquifer used for drinking water supply*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *2009-09-22*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-09-22 00:00:00*
ACTION (blank if not reported): *Closure/No Further Action Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-09-16 00:00:00*
ACTION (blank if not reported): *File Review - Closure*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-09-22 00:00:00*
ACTION (blank if not reported): *File Review - Closure*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 193 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: CHEVRON 9-3069
ADDRESS: 5002 EDINGER
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605902060
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

DATE (blank if not reported): *2005-04-11 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-12-30 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-03-20 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-05-17 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Began*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Pump and Treat Groundwater*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 193 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: CHEVRON 9-3069
ADDRESS: 5002 EDINGER
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605902060
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 179 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: HUNTINGTON BEACH CHEVRON
ADDRESS: 5002 EDINGER
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE32905
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

OTHER

SEARCH ID: 160 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: CHEVRON STATION 9-3069
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_97UT15
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*G*
Contract Status:	*3*
Fund:	*F*
Substance Code:	*8006619*
Description:	*GASOLINE*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 175 **DIST/DIR:** 0.75 SE **ELEVATION:** 12 **MAP ID:** 131

NAME: EDINGER MARKET AND GAS
ADDRESS: 5002 EDINGER AVE
HUNTINGTON BEACH CA 92649
ORANGE CO
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO1043
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION
According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0024440*

UST

SEARCH ID: 171 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: AM/ PM OF HUNTINGTON BEACH
ADDRESS: 6002 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO318
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION
According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0023980*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 172 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: AM/PM OF HUNTINGTON BEACH
ADDRESS: 6002 BOLSA AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE:

REV: 04/13/2000
ID1: ORCOCOMP09122
ID2:
STATUS:
PHONE:

ORANGE COUNTY TANKS LIST INFORMATION
ISSUE DATE: *9/23/98*

UST

SEARCH ID: 173 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: ARCO OF HUNTINGTON BEACH (1989
ADDRESS: 6002 BOLSA
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE33266
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA
This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 163 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: HUNTUNGTON BEACH ARCO
ADDRESS: 6002 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_95UT5
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*3*
Fund:	*F*
Substance Code:	*8006619*
Description:	*GASOLINE*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 196 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: HUNTINGTON BEACH ARCO
ADDRESS: 6002 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901827
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083002623T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *95UT005*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Aquifer used for drinking water supply*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Remediation*
STATUS DATE: *2004-07-09*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-11-29 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-05-02 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-12-14 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2001-06-20 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-02-23 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 196 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: HUNTINGTON BEACH ARCO
ADDRESS: 6002 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901827
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

DATE (blank if not reported): *2004-07-09 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-06-06 00:00:00*
ACTION (blank if not reported): *Notice of Violation*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-08-26 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-03-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-03-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-04-15 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-07-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-07-27 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Began*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Dual Phase Extraction*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 196 **DIST/DIR:** 0.75 NE **ELEVATION:** 18 **MAP ID:** 132

NAME: HUNTINGTON BEACH ARCO
ADDRESS: 6002 BOLSA
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901827
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 166 **DIST/DIR:** 0.75 SE **ELEVATION:** 13 **MAP ID:** 133

NAME: POLYMER DEVELOPMENT LABORATORY 2
ADDRESS: 15731 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 01/15/09
ID1: CAL30340281
ID2:
STATUS: REFER: EPA
PHONE:

GENERAL SITE INFORMATION

Site Type:	*Evaluation*
Status:	*Refer: EPA*
Status Date:	*2007-08-24*
NPL Site:	*NO*
Funding:	*EPA Grant*
Regulatory Agencies Involved:	*NONE SPECIFIED*
Lead Agency:	*NONE SPECIFIED*
Project Manager:	
Supervisor:	*Greg Holmes*
Branch:	*Cypress*
Acres:	*1*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*NONE SPECIFIED*
Potential Contaminants:	*HALOGENATED SOLVENTS, CONTAMINATED SOIL, Cyanide (free)*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*NONE SPECIFIED*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	*EPA - PASI*

OTHER SITE NAMES (blank below = not reported by agency)

30340281

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Site Screening***
Completion Date:	***2007-08-22***
Comments:	

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Site Screening***
Completion Date:	***1994-10-25***
Comments:	*Site screening/file review determines NFA for DTSC.*

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Assessment Report***
Completion Date:	***1989-07-07***
Comments:	*PRELIM ASSESS DONE FACILITY HAS A HISTORY OF SPILLS. SOIL CONTAMINATION HAS BEEN DOCUMENTED, THERE FORE, BASED ON AVAILABLE INFORMATION, A SI MEDIUM PRIORITY IS RECOMMENDED.*

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Site Screening***
Completion Date:	***1987-06-25***

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 166 **DIST/DIR:** 0.75 SE **ELEVATION:** 13 **MAP ID:** 133

NAME: POLYMER DEVELOPMENT LABORATORY 2
ADDRESS: 15731 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 01/15/09
ID1: CAL30340281
ID2:
STATUS: REFER: EPA
PHONE:

Comments: *DHS REGIONAL FILES SITE SCREENING DONE MORE INFO NEEDED*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Discovery***
Completion Date: ***1981-08-01***
Comments: *FACILITY IDENTIFIED PHONE BOOK SEARCH. PLATING FIRM ONSITE IN 1977.*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 46 **DIST/DIR:** 0.76 SE **ELEVATION:** 13 **MAP ID:** 134

NAME: HUNTINGTON BEACH CHEVRON
ADDRESS: 5002 EDINGER
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983589177
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ZAHED SHAWN
5002 EDINGER
HUNTINGTON BEACH CA 92649

PHONE: 7148469458

UNIVERSE INFORMATION:

NAIC INFORMATION

4471 - GASOLINE STATIONS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 113 **DIST/DIR:** 0.76 SE **ELEVATION:** 12 **MAP ID:** 135

NAME: SCREEN SCENE
ADDRESS: 5542 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD982443855
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: GREG CARLSKIN
207 CALLE DE LOS MOLINOS
SAN CLEMENTE CA 92672

PHONE: 9493619600

UNIVERSE INFORMATION:

NAIC INFORMATION

33636 - MOTOR VEHICLE SEATING AND INTERIOR TRIM MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SPILLS

SEARCH ID: 157 **DIST/DIR:** 0.76 SE **ELEVATION:** 14 **MAP ID:** 136

NAME: WEISER LOCK - VES
ADDRESS: 5555 MCFADDEN AVE
HUNTINGTON BEACH CA

CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: G_SL208053860
ID2:
STATUS: OPEN - REMEDIATION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *SL208053860*
LOCAL AGENCY:
LOCAL CASE NUMBER:
CASE TYPE: *Cleanup Program Site*
STATUS: *Open - Remediation*
STATUS DATE: *1992-06-01*
POTENTIAL CONTAMINANTS OF CONCERN:
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water), Soil*
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-07-10 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

CONTACT TYPE: *Regional Board Caseworker*
CONTACT NAME: *MANECK G. CHICHGAR*
ORGANIZATION NAME: *SANTA ANA RWQCB (REGION 8)*
CONTACT ADDRESS: *3737 MAIN STREET, Suite 500*
CONTACT CITY: *RIVERSIDE*
CONTACT EMAIL: *mchichgar waterboards.ca.gov*
CONTACT PHONE NUMBER:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 218 **DIST/DIR:** 0.76 SE **ELEVATION:** 10 **MAP ID:** 137

NAME: CIRCUIT AUTOMATION
ADDRESS: 5292 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000323575
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 235 **DIST/DIR:** 0.76 SE **ELEVATION:** 11 **MAP ID:** 138

NAME: FEDERAL EXPRESS CORPORATION
ADDRESS: 5321 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000005253
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/14/1989*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *3620 HACKS CROSS RD BLDG B 2ND FL, MEMPHIS, TN 38125-7113*
Owner Name: *FEDERAL EXPRESS CORPORATION*
Owner Address: *3620 HACKS CROSS RD BLDG B 2ND FL, MEMPHIS, TN 38125-7113*
Contact Name: *BARBARA HODICK-SR ENV SPECLST*
Contact Address: *3620 HACKS CROSS RD BLDG B 2ND FL, MEMPHIS, TN 38125-7113*
Contact Phone: *9014348460*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE*
2009 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2009 Total Tonnage: *0.065*
2008 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2008 Total Tonnage: *0.035*
2007 Waste Type: *Unspecified organic liquid mixture*
2007 Total Tonnage: *0.03336*
2006 Waste Type: *Off-specification, aged or surplus organics*
2006 Total Tonnage: *0.04*
2005 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
2005 Total Tonnage: *0.03*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
2004 Total Tonnage: *0.03*
2003 Waste Type: *Unspecified organic liquid mixture*
2003 Total Tonnage: *0.04*
2002 Waste Type: *Other organic solids*
2002 Total Tonnage: *0.01*
2001 Waste Type: *Waste oil and mixed oil*
2001 Total Tonnage: *0.56*
2000 Waste Type: *Other organic solids*
2000 Total Tonnage: *2.8*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
1999 Total Tonnage: *0.0834*
1998 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
1998 Total Tonnage: *0.1292*
1997 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
1997 Total Tonnage: *0.0583*
1996 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
1996 Total Tonnage: *0.1749*
1995 Waste Type: *Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)*
1995 Total Tonnage: *0.2*
1994 Waste Type: *Waste oil and mixed oil*
1994 Total Tonnage: *1.251*
1993 Waste Type: *Aqueous solution with total organic residues less than 10 percent*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 235 **DIST/DIR:** 0.76 SE **ELEVATION:** 11 **MAP ID:** 138

NAME: FEDERAL EXPRESS CORPORATION
ADDRESS: 5321 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000005253
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage: *0.1251*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 245 **DIST/DIR:** 0.76 SE **ELEVATION:** 14 **MAP ID:** 139

NAME: HI-TECH PRODUCTION SERVICES INC
ADDRESS: 15572 COMMERCE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000286265
ID2:
STATUS: INACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 282 **DIST/DIR:** 0.76 SE **ELEVATION:** 11 **MAP ID:** 140

NAME: SEAGATE VETERINARY HOSPITAL
ADDRESS: 16061 BOLSA CHICA ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000091329
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/2/1993*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *16061 BOLSA CHICA ST, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *SEA GATE VET HOSPITAL*
Owner Address: *16061 BOLSA CHICA RD, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *KECHEN CHANG DVM PHD*
Contact Address: *16061 BOLSA CHICA ST, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148464436*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 282 **DIST/DIR:** 0.76 SE **ELEVATION:** 11 **MAP ID:** 140

NAME: SEAGATE VETERINARY HOSPITAL
ADDRESS: 16061 BOLSA CHICA ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000091329
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 23 **DIST/DIR:** 0.77 SE **ELEVATION:** 14 **MAP ID:** 141

NAME: CARLSKIN MFG
ADDRESS: 15608 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983653692
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: KEITH CARLSON
15608 GRAHAM ST
HUNTINGTON BEACH CA 92649

PHONE: 7143730144

UNIVERSE INFORMATION:

NAIC INFORMATION

54143 - GRAPHIC DESIGN SERVICES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 102 **DIST/DIR:** 0.77 SE **ELEVATION:** 13 **MAP ID:** 142

NAME: WORKMAN AUTOMOTIVE
ADDRESS: 15631 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983584475
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: KIRIT SUDRA
15631 GRAHAM ST
HUNTINGTON BEACH CA 92649

PHONE: 7148988128

UNIVERSE INFORMATION:

NAIC INFORMATION

811111 - GENERAL AUTOMOTIVE REPAIR

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 70 **DIST/DIR:** 0.77 SE **ELEVATION:** 13 **MAP ID:** 142

NAME: PACIFIC PERFORMANCE
ADDRESS: 15631 GRAHAM UNIT C
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983593252
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: KOOP BILL
15631 GRAHAM UNIT C
HUNTINGTON BEACH CA 92649

PHONE: 7148951441

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 100 **DIST/DIR:** 0.77 SE **ELEVATION:** 14 **MAP ID:** 143

NAME: WEISER LOCK
ADDRESS: 5555 MCFADDEN AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD097578082
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5555 MCFADDEN AVENUE
HUNTINGTON BEACH CA 92549

PHONE: 2134356676

UNIVERSE INFORMATION:

NAIC INFORMATION

33251 - HARDWARE MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichlorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; all spent solvent mixtures/bl

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 225 **DIST/DIR:** 0.77 SE **ELEVATION:** 12 **MAP ID:** 144

NAME: CURLIN MEDICAL INC
ADDRESS: 15751 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000305741
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 40 **DIST/DIR:** 0.78 SE **ELEVATION:** 12 **MAP ID:** 145

NAME: FUSION INC
ADDRESS: 5402 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982343592
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5402 RESEARCH DR
HUNTINGTON BEACH CA 92649

PHONE: 7148925005

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 64 **DIST/DIR:** 0.78 SE **ELEVATION:** 14 **MAP ID:** 146

NAME: NDT INSTRUMENTS, INC
ADDRESS: 15622 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981458581
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15622 GRAHAM ST
HUNTINGTON BEACH CA 92649

PHONE: 7148922438

UNIVERSE INFORMATION:

NAIC INFORMATION

334519 - OTHER MEASURING AND CONTROLLING DEVICE MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 194 **DIST/DIR:** 0.78 SE **ELEVATION:** 14 **MAP ID:** 147

NAME: ENGARD COATINGS
ADDRESS: 15541 COMMERCE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901210
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083001591T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *90UT019*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Toluene*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1990-05-15*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 194 **DIST/DIR:** 0.78 SE **ELEVATION:** 14 **MAP ID:** 147

NAME: ENGARD COATINGS
ADDRESS: 15541 COMMERCE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901210
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

OTHER

SEARCH ID: 161 **DIST/DIR:** 0.78 SE **ELEVATION:** 14 **MAP ID:** 147

NAME: ENGARD COATINGS
ADDRESS: 15541 COMMERCE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_90UT19
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*8*
Fund:	*F*
Substance Code:	*108883*
Description:	*TOLUENE*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	*05-15-90*

HWMANIFEST

SEARCH ID: 252 **DIST/DIR:** 0.78 SE **ELEVATION:** 12 **MAP ID:** 148

NAME: KAESER COMPRESSORS INC
ADDRESS: 5542 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000284999
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 290 **DIST/DIR:** 0.78 SE **ELEVATION:** 10 **MAP ID:** 149

NAME: SUMIT STEEL
ADDRESS: 5332 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000310706
ID2:
STATUS: ACTIVE
PHONE:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 290 **DIST/DIR:** 0.78 SE **ELEVATION:** 10 **MAP ID:** 149

NAME: SUMIT STEEL
ADDRESS: 5332 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000310706
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

UST

SEARCH ID: 186 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABS
ADDRESS: 15571 COMMERCE
HUNTINGTON BEACH CA
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE33103
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 201 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABORATORIES
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901513
ID2:
STATUS: OPEN - VERIFICATION MONITORING
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *083002028T*
LOCAL AGENCY:
LOCAL CASE NUMBER: *93UT008*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: ** Chlorinated Hydrocarbons*
POTENTIAL MEDIA AFFECTED: *Aquifer used for drinking water supply*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Verification Monitoring*
STATUS DATE: *2006-05-03*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-10-30 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-30 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-08-06 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2002-08-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-04-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 201 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABORATORIES
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901513
ID2:
STATUS: OPEN - VERIFICATION MONITORING
PHONE:

DATE (blank if not reported): *2007-09-18 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-05-29 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-04-02 00:00:00*
ACTION (blank if not reported): ** No Action*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-11-09 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-05-17 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-01-07 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-06-09 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-04-21 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-02-05 00:00:00*
ACTION (blank if not reported): *13267 Monitoring Program*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-04-21 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-04-28 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-02-19 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-10-21 00:00:00*
ACTION (blank if not reported): *13267 Monitoring Program*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 201 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABORATORIES
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901513
ID2:
STATUS: OPEN - VERIFICATION MONITORING
PHONE:

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-11-09 00:00:00*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported):

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-04-04 00:00:00*
ACTION (blank if not reported): *First Quarter 2009 Groundwater Monitoring Report*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-07-30 00:00:00*
ACTION (blank if not reported): *Quarterly Groundwater Monitoring Report*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2006-09-30 00:00:00*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-04-30 00:00:00*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-06-04 00:00:00*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-07-30 00:00:00*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-04-30 00:00:00*
ACTION (blank if not reported): *Self Monitoring Report*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2003-05-08 00:00:00*
ACTION (blank if not reported):

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 201 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABORATORIES
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901513
ID2:
STATUS: OPEN - VERIFICATION MONITORING
PHONE:

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2002-11-13 00:00:00*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2003-02-08 00:00:00*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

NFRAP

SEARCH ID: 3 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: STANDARD CHEMICAL
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 8/31/10
ID1: CAD981622608
ID2: 0902484
STATUS: NFRAP-N
PHONE:

DESCRIPTION:
SEE COMMENT GROUP 001

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
ARCHIVE SITE	EPA In-House		1/23/1996
ADMIN/VOLUNTARY COST RECOVERY	Federal Enforcement Alternate		11/2/1984
REMOVAL CLEANED UP	EPA Fund-Financed Primary	19-83-6/9/	11/14/1983
SECTION 107 LITIGATION	Federal Enforcement Primary	/1-83-8/29	5/30/1984

UST

SEARCH ID: 187 **DIST/DIR:** 0.79 SE **ELEVATION:** 14 **MAP ID:** 150

NAME: VENUS LABS
ADDRESS: 15571 COMMERCE LN
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO395
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION
According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency):

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 54 **DIST/DIR:** 0.79 SE **ELEVATION:** 12 **MAP ID:** 151

NAME: L B L CO
ADDRESS: 5395 INDUSTRIAL DR UNIT A
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983654856
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: LEO BLANCO
5395 INDUSTRIAL DR UNIT A
HUNTINGTON BEACH CA 92649

PHONE: 7143792325

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 195 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901840
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083002653T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *95UT004*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water)*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Site Assessment*
STATUS DATE: *1996-02-07*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-07-27 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-07-03 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-05-21 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2004-06-24 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-07-20 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 195 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901840
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

DATE (blank if not reported): *2005-05-09 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-08 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2010-03-31 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2005-02-02 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-08-29 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-02-02 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2003-01-13 00:00:00*
ACTION (blank if not reported): *Staff Letter*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Stopped*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE
MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 195 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901840
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 176 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEM
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE32771
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

OTHER

SEARCH ID: 162 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_95UT4
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*3*
Fund:	*F*
Substance Code:	*12034 - 8006619*
Description:	*DIESEL - GASOLINE*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 124 **DIST/DIR:** 0.79 SE **ELEVATION:** 11 **MAP ID:** 152

NAME: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEMS DR
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 8/24/90 0:
ID1: 179315
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/24/1990 **TIME OF SPILL:** 1510

PRODUCT RELEASED (1): GASOLINE
QUANTITY (1): 100
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: FLOOD CONTROL CHANNEL

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN:
RELEASE DETECTION: SPILLED TO FLOOD CONTROL CHANNEL
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 179315 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: FEDERAL EXPRESS
ADDRESS: 5321 SYSTEMS DRIVE
HUNTINGTON BEACH CA 92649-

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

UST

SEARCH ID: 181 **DIST/DIR:** 0.79 SE **ELEVATION:** 10 **MAP ID:** 153

NAME: M L BASHAW INC
ADDRESS: 5292 SYSTEM
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE33381
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 199 **DIST/DIR:** 0.79 SE **ELEVATION:** 10 **MAP ID:** 153

NAME: SPEEDY CIRCUITS
ADDRESS: 5292 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605902026
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083002958T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *96UT051*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1997-05-19*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 199 **DIST/DIR:** 0.79 SE **ELEVATION:** 10 **MAP ID:** 153

NAME: SPEEDY CIRCUITS
ADDRESS: 5292 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605902026
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 168 **DIST/DIR:** 0.79 SE **ELEVATION:** 10 **MAP ID:** 153

NAME:	SPEEDY CIRCYITS	**REV:**	07/01/99
ADDRESS:	5292 SYSTEM DR	**ID1:**	ORCO_GW_96UT51
	HUNTINGTON BEACH CA 92649	**ID2:**	
	Orange	**STATUS:**	NOT REPORTED
CONTACT:		**PHONE:**	
SOURCE:	ORANGE CO EHD		

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*9*
Fund:	*F*
Substance Code:	*12034*
Description:	*DIESEL*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	*05-19-97*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 292 **DIST/DIR:** 0.79 SE **ELEVATION:** 12 **MAP ID:** 154

NAME: TERRY BROWNS MARINE SERVICE
ADDRESS: 15886 MANUFACTURE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000068172
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *3/24/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15886 MANUFACTURE LN, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *DBA TERRY BROWN S MARINE SVC*
Owner Address: *15886 MANUFACTURE LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *TERRY BROWN*
Contact Address: *15886 MANUFACTURE LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7143738095*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type: *Organic liquids with metals (see 121)*
1998 Total Tonnage: *0.0583*
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 292 **DIST/DIR:** 0.79 SE **ELEVATION:** 12 **MAP ID:** 154

NAME: TERRY BROWNS MARINE SERVICE
ADDRESS: 15886 MANUFACTURE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000068172
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 117 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 155

NAME: ALLY PRODUCTIONS
ADDRESS: 5405 PRODUCTION LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/11/91
ID1: 234530
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 9/11/1991 **TIME OF SPILL:** 0806

PRODUCT RELEASED (1): LIQUID DETERGENT and FABRIC SOFTE
QUANTITY (1): 400
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

SPILL INFORMATION
DATE OF SPILL: 9/11/1991 **TIME OF SPILL:** 0806

PRODUCT RELEASED (1): LIQUID DETERGENT and FABRIC SOFTE
QUANTITY (1): 400
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 117 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 155

NAME: ALLY PRODUCTIONS
ADDRESS: 5405 PRODUCTION LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/11/91
ID1: 234530
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: EMA ON SCENE FOR INVESTIGATION
RELEASE DETECTION: RP WASHING RESIDUE FROM DRUMS.THEY DO NOT BELIEVE IT WENT INTO STORM D RAINS.
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 234530
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: ALLY PRODUCTIONS
ADDRESS: 5405 PRODUCTION LANE
HUNTINGTON BEACH CA 92646-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: EMA ON SCENE FOR INVESTIGATION
RELEASE DETECTION: RP WASHING RESIDUE FROM DRUMS.THEY DO NOT BELIEVE IT WENT INTO STORM D RAINS.
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 234530
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: ALLY PRODUCTIONS
ADDRESS: 5405 PRODUCTION LANE
HUNTINGTON BEACH CA 92646-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 226 **DIST/DIR:** 0.80 SE **ELEVATION:** 14 **MAP ID:** 156

NAME: CURLIN MEDICAL INC
ADDRESS: 15662 COMMERCE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000311932
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 272 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 157

NAME: PRECISION FERRITES and CERAMICS
ADDRESS: 5432 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000138714
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *1/8/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5432 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *PRECISION FERRITES and CERAMICS*
Owner Address: *5432 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *JISOO LEE-VP, GEN MGR*
Contact Address: *5432 PRODUCTION DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7149017622*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Other organic solids*
2009 Total Tonnage: *0.4587*
2008 Waste Type: *Other organic solids*
2008 Total Tonnage: *0.68805*
2007 Waste Type: *Liquids with pH <= 2 with metals*
2007 Total Tonnage: *0.22935*
2006 Waste Type: *Liquids with pH <= 2 with metals*
2006 Total Tonnage: *0.25*
2005 Waste Type: *Other organic solids*
2005 Total Tonnage: *1.14*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *1.41*
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *0.8*
2002 Waste Type: *Organic liquids with metals (see 121)*
2002 Total Tonnage: *0.22*
2001 Waste Type: *Oil/water separation sludge*
2001 Total Tonnage: *6.45*
2000 Waste Type: *Oil/water separation sludge*
2000 Total Tonnage: *2.91*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
1998 Total Tonnage: *1.251*
1997 Waste Type: *Other organic solids*
1997 Total Tonnage: *0.9*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 272 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 157

NAME: PRECISION FERRITES and CERAMICS
ADDRESS: 5432 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000138714
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 294 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 158

NAME: TIERRA VERDE LANDSCAPE INC
ADDRESS: 5562 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000069632
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *10/16/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5562 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1614*
Owner Name: *ALLEN CHARITON*
Owner Address: *5562 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1614*
Contact Name: *ALLEN CHARITON/PRESIDENT*
Contact Address: *5562 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1614*
Contact Phone: *7143791140*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type: *Unspecified aqueous solution*
1998 Total Tonnage: *0.1876*
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type: *Unspecified aqueous solution*
1996 Total Tonnage: *0.2085*
1995 Waste Type: *Unspecified aqueous solution*
1995 Total Tonnage: *0.2085*
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 294 **DIST/DIR:** 0.80 SE **ELEVATION:** 12 **MAP ID:** 158

NAME: TIERRA VERDE LANDSCAPE INC
ADDRESS: 5562 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000069632
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

CERCLIS

SEARCH ID: 1 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 159

NAME: POLYMER DEVELOPMENT LABS 2
ADDRESS: 15731 GRAHAM AVE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT: DAWN RICHMOND
SOURCE: EPA

REV: 8/31/10
ID1: CAD982360653
ID2: 0900460
STATUS: NOT PROPOSED
PHONE: 4159723097

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
discovery	State, Fund Financed		12/1/1987
preliminary assessment Low priority for further assessment	State, Fund Financed		10/4/1989

DESCRIPTION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 29 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 160

NAME: CURTIS PLASTICS
ADDRESS: 5332 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982018194
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5332 PRODUCTION DR
HUNTINGTON BEACH CA 92649

PHONE: 7148954801

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 95 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 161

NAME: TURF VAC CORP
ADDRESS: 15701 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982041667
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 151 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 162

NAME: POLYMER DEVELOPMENT LABORATORY 2
ADDRESS: 15731 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 08/04/10
ID1: CAL30340281
ID2: EVALUATION
STATUS: ACTIVE
PHONE:

GENERAL SITE INFORMATION

Site Type:	*Evaluation*
Status:	*Active*
Status Date:	*2009-08-19*
NPL Site:	*NO*
Funding:	*EPA Grant*
Regulatory Agencies Involved:	*US EPA*
Lead Agency:	*US EPA*
Project Manager:	*GREG HOLMES*
Supervisor:	*Greg Holmes*
Branch:	*Cypress*
Acres:	*1*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*NONE SPECIFIED*
Potential Contaminants:	*HALOGENATED SOLVENTS, CONTAMINATED SOIL, Cyanide (free)*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*NONE SPECIFIED*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	*EPA - PASI*

OTHER SITE NAMES (blank below = not reported by agency)
30340281

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Discovery***
Completion Date:	***1981-08-01 00:00:00***
Comments:	*FACILITY IDENTIFIED PHONE BOOK SEARCH. PLATING FIRM ONSITE IN 1977.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Site Screening***
Completion Date:	***1994-10-25 00:00:00***
Comments:	*Site screening/file review determines NFA for DTSC.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Assessment Report***
Completion Date:	***1989-07-07 00:00:00***
Comments:	*PRELIM ASSESS DONE FACILITY HAS A HISTORY OF SPILLS. SOIL CONTAMINATION HAS BEEN DOCUMENTED, THERE FORE, BASED ON AVAILABLE INFORMATION, A SI MEDIUM PRIORITY IS RECOMMENDED.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Site Screening***
Completion Date:	***1987-06-25 00:00:00***

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 151 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 162

NAME:	POLYMER DEVELOPMENT LABORATORY 2	**REV:**	08/04/10
ADDRESS:	15731 GRAHAM ST	**ID1:**	CAL30340281
	HUNTINGTON BEACH CA 92649	**ID2:**	EVALUATION
	ORANGE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	
SOURCE:	CA DTSC		

Comments: *DHS REGIONAL FILES SITE SCREENING DONE MORE INFO NEEDED*

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 106 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 162

NAME: BRAUN CORPORATION THE
ADDRESS: 15731 GRAHAM ST
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD981403991
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15731 GRAHAM ST
HUNTINGTON BEACH CA 92649

PHONE: 7148914305

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 158 **DIST/DIR:** 0.81 SE **ELEVATION:** 10 **MAP ID:** 163

NAME: BEACH CITY LIFT
ADDRESS: 5372 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_91UT28
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*3*
Fund:	*F*
Substance Code:	*12035*
Description:	*WASTE OIL*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	*06-26-91*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 188 **DIST/DIR:** 0.81 SE **ELEVATION:** 10 **MAP ID:** 163

NAME: BEACH CITY LIFT
ADDRESS: 5372 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901345
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083001796T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *91UT028*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Waste Oil / Motor / Hydraulic / Lubricating*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1991-06-26*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 188 **DIST/DIR:** 0.81 SE **ELEVATION:** 10 **MAP ID:** 163

NAME: BEACH CITY LIFT
ADDRESS: 5372 SYSTEM
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901345
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

OTHER

SEARCH ID: 164 **DIST/DIR:** 0.81 SE **ELEVATION:** 14 **MAP ID:** 164

NAME:	KOPPY INTERNATIONAL	**REV:**	07/01/99
ADDRESS:	15602 COMMERCE LN	**ID1:**	ORCO_GW_88UT190
	HUNTINGTON BEACH CA 92649	**ID2:**	
	ORANGE	**STATUS:**	NOT REPORTED
CONTACT:		**PHONE:**	
SOURCE:	ORANGE CO EHD		

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:	*S*
Contract Status:	*8*
Fund:	*F*
Substance Code:	*12034*
Description:	*DIESEL*
Lead Refferal:	*N*
Enforcement:	
Date Closed:	*01-11-89*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 197 **DIST/DIR:** 0.81 SE **ELEVATION:** 14 **MAP ID:** 164

NAME: KOPPY INTERNATIONAL
ADDRESS: 15602 COMMERCE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605900660
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083000838T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *88UT190*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Soil*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1989-01-11*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 230 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 165

NAME: EINMALIG
ADDRESS: 5455 PRODUCTION LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000153680
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/16/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5455 PRODUCTION DRIVE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *BRIAN FARMER*
Owner Address: *5455 PRODUCTION DRIVE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *BRIAN FARMER/OWNER*
Contact Address: *, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148956567*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 230 **DIST/DIR:** 0.81 SE **ELEVATION:** 12 **MAP ID:** 165

NAME: EINMALIG
ADDRESS: 5455 PRODUCTION LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000153680
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 274 **DIST/DIR:** 0.81 SE **ELEVATION:** 11 **MAP ID:** 166

NAME: PRO FORK LIFT SERVICE INC
ADDRESS: 5412 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000317366
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 22 **DIST/DIR:** 0.82 NE **ELEVATION:** 18 **MAP ID:** 167

NAME: CAMBRO MFG CO
ADDRESS: 5801 SKYLAB RD
HUNGTINGTON BEACH CA 92647
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000190066
ID2:
STATUS: LGN
PHONE:

CONTACT INFORMATION:
KENT D ADAMS
714-230-4226
KADAMS CAMBRO.COM

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA CA BASELINE UNIVERSE:	*NO*
GPRA CA 2008:	*NO*

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	NO
SUBJCA TSD 3004:	NO
SUBJCA NON TSD:	NO
SUBJCA TSD DISCRETION:	NO

PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----

PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	NO
GENERATOR STATUS:	LQG
TRANSPORTER:	NO
UNIVERSAL WASTE:	NO
RECYCLER:	NO
USED OIL:	NO
IMPORTER:	NO
MIXED WASTE GENERATOR:	NO
ONSITE BURNER EXEMPT:	NO
FURNACE EXEMPTION:	NO
UNDERGROUND INJECTION:	NO

NAIC 1:	All Other Plastics Product Manufacturing
NAIC 2:	
NAIC 3:	
NAIC 4:	

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 65 **DIST/DIR:** 0.82 SE **ELEVATION:** 10 **MAP ID:** 168

NAME: NU-GRAPHICS MFG, INC
ADDRESS: 5312 SYSTEMS DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981391493
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 84 **DIST/DIR:** 0.82 SE **ELEVATION:** 10 **MAP ID:** 169

NAME: SPEEDY CIRCUITS - FACILITY 2
ADDRESS: 5292 SYSTEM DR UNIT B
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD076085125
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: BUDD WARSHAUER
5292 SYSTEM DR UNIT B
HUNTINGTON BEACH CA 92648

PHONE: 7148486555

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5292 SYSTEM DR
HUNTINGTON BEACH CA 92648

PHONE:

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Corrosive waste
Lead

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 239 **DIST/DIR:** 0.82 SE **ELEVATION:** 14 **MAP ID:** 170

NAME: GandM MACHINE SHOP
ADDRESS: 15531 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000000906
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *11/14/1989*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15531 COMPUTER LN, HUNTINGTON BEACH, CA 92649-1605*
Owner Name: *G and M MACHINE SHOP*
Owner Address: *15531 COMPUTER LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *MICHAEL KULL/CO OWNER*
Contact Address: *15531 COMPUTER LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148942311*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 239 **DIST/DIR:** 0.82 SE **ELEVATION:** 14 **MAP ID:** 170

NAME: GandM MACHINE SHOP
ADDRESS: 15531 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000000906
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 25 **DIST/DIR:** 0.83 SE **ELEVATION:** 12 **MAP ID:** 171

NAME: CLASSIC CLEANERS
ADDRESS: 16071 BOLSA CHICA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981573843
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JAGDISH PATEL
16071 BOLSA CHICA
HUNTINGTON BEACH CA 92649

PHONE: 7148460888

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 27 **DIST/DIR:** 0.83 SE **ELEVATION:** 14 **MAP ID:** 172

NAME: COATINGS RESOURCE CORPORATION
ADDRESS: 15541 COMMERCE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD009556192
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15541 COMMERCE LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148945252

UNIVERSE INFORMATION:

NAIC INFORMATION

32551 - PAINT AND COATING MANUFACTURING
32551 - PAINT AND COATING MANUFACTURING
325998 - ALL OTHER MISCELLANEOUS CHEMICAL PRODUCT AND PREPARATION MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 3/17/2005
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 3/17/2005
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** B - STATE CONTRACTOR
DETERMINED: 3/17/2005 **DETERMINED BY:** B - STATE CONTRACTOR
CITATION:
RESOLVED: 4/19/2005
TYPE: GENERATOR-GENERAL REQUIREMENTS

HAZARDOUS WASTE INFORMATION:

The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
Ignitable waste
Methyl ethyl ketone

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 149 **DIST/DIR:** 0.83 SW **ELEVATION:** 7 **MAP ID:** 173

NAME:
ADDRESS: 16072 BALLAD LANE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 9/26/98
ID1: 595660
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 9/26/1998 **TIME OF SPILL:** 1715

PRODUCT RELEASED (1): OIL BASE PAINTS
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2): PAINT THINNER
QUANTITY (2): 0
UNITS (2): UNK

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: CONCRETE / ASPHALT

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: PERSON TRIED TO CLEAN UP / SHEEN ON WATER /
RELEASE DETECTION: PAINTING PRODUCTS / PERSON DUMPING PAINT AND THINNER ON SIDEWALK
MISC. NOTES: PERSON REPORTED DUMPING OF PAINT PRODUCTS

DISCHARGER INFORMATION

DISCHARGER ID: 595660 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER:
ADDRESS:
CA

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 253 **DIST/DIR:** 0.83 SE **ELEVATION:** 14 **MAP ID:** 174

NAME: KAWASAKI BOEKI INC
ADDRESS: 15561 COMPUTER UNIT LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000252558
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/23/2002 8:42:32 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15561 Computer Ln Unit E, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *Kawasaki Boeki Inc*
Owner Address: *15561 Computer Ln Unit E, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *ICHIRD FUJITA*
Contact Address: *15561 Computer Ln Unit E, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7149017902*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 253 **DIST/DIR:** 0.83 SE **ELEVATION:** 14 **MAP ID:** 174

NAME: KAWASAKI BOEKI INC
ADDRESS: 15561 COMPUTER UNIT LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000252558
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 219 **DIST/DIR:** 0.83 SE **ELEVATION:** 14 **MAP ID:** 174

NAME: CLARK S MARINE SERVICE
ADDRESS: 15561 COMPUTER STE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000294151
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 242 **DIST/DIR:** 0.83 NE **ELEVATION:** 18 **MAP ID:** 175

NAME: HARDY FRAMES INC
ADDRESS: 5511 SKYLAB ROAD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000324416
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 299 **DIST/DIR:** 0.83 SE **ELEVATION:** 12 **MAP ID:** 176

NAME: UNITED FLIGHT ACCESSORIES OF CALIF
ADDRESS: 5602 RESEARCH UNIT DR
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000190838
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *1/3/2000*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5602 RESEARCH DR UNIT B, HUNTINGTON BEACH, CA 92647-0000*
Owner Name: *A CALIFORNIA CORPORATION*
Owner Address: *CALIF/5602 RESEARCH DR UNIT B, HUNTINGTON BEACH, CA 92647-0000*
Contact Name: *JOHN TURPIN*
Contact Address: *5602 RESEARCH DR UNIT B, HUNTINGTON BEACH, CA 92647-0000*
Contact Phone: *7148941172*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2001 Total Tonnage: *0.63*
2000 Waste Type: *Liquids with halogenated organic compounds >= 1,000 Mg./L*
2000 Total Tonnage: *0.14*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 299 **DIST/DIR:** 0.83 SE **ELEVATION:** 12 **MAP ID:** 176

NAME: UNITED FLIGHT ACCESSORIES OF CALIF
ADDRESS: 5602 RESEARCH UNIT DR
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000190838
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 21 **DIST/DIR:** 0.84 SE **ELEVATION:** 10 **MAP ID:** 177

NAME: CALIFORNIA SHIRT PRINTER INC
ADDRESS: 5392 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981617780
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5392 SYSTEM DRIVE
HUNTINGTON BEACH CA 92649

PHONE: 7149899946

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 18 **DIST/DIR:** 0.84 SE **ELEVATION:** 10 **MAP ID:** 177

NAME: CALIF SHIRT PRINTER
ADDRESS: 5392 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981966963
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5392 SYSTEM DR
HUNTINGTON BEACH CA 92649

PHONE: 7148989946

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 66 **DIST/DIR:** 0.84 SE **ELEVATION:** 14 **MAP ID:** 178

NAME: OCEANAIRE SPORTSWEAR INC
ADDRESS: 15562 COMMERCE LA
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983583055
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: BEU KEN
15562 COMMERCE LA
HUNTINGTON BEACH CA 92649

PHONE: 7148919230

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 71 **DIST/DIR:** 0.84 SE **ELEVATION:** 10 **MAP ID:** 179

NAME: PAUL PFAFF ENTERPRISES
ADDRESS: 5362 SYSTEM DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0000341313
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: PAUL PFAFF
5362 SYSTEM DR
HUNTINGTON BEACH CA 92649

PHONE: 7148947573

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 210 **DIST/DIR:** 0.84 SE **ELEVATION:** 14 **MAP ID:** 180

NAME: AMERICAN SUSPENSION LLC
ADDRESS: 15572 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000304078
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 265 **DIST/DIR:** 0.85 SE **ELEVATION:** 14 **MAP ID:** 181

NAME: OLIN ENGINEERING INC
ADDRESS: 15592 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000147121
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *4/21/1998*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15592 COMPUTER LANE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *OLIN ENGINEERING INC*
Owner Address: *15592 COMPUTER LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *IAN TOBER EXT 101*
Contact Address: *15592 COMPUTER LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148971230*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type: *Other organic solids*
2006 Total Tonnage: *0.15*
2005 Waste Type: *Other organic solids*
2005 Total Tonnage: *0.1*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Unspecified sludge waste*
2004 Total Tonnage: *0.45*
2003 Waste Type: *Unspecified organic liquid mixture*
2003 Total Tonnage: *0.83*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2001 Total Tonnage: *0.4*
2000 Waste Type: *Aqueous solution with total organic residues less than 10 percent*
2000 Total Tonnage: *0.16*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 265 **DIST/DIR:** 0.85 SE **ELEVATION:** 14 **MAP ID:** 181

NAME: OLIN ENGINEERING INC
ADDRESS: 15592 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000147121
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 97 **DIST/DIR:** 0.86 SE **ELEVATION:** 12 **MAP ID:** 182

NAME: UNITED FLIGHT ACCESSORIES OF CALIFORNIA
ADDRESS: 5602 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000196360
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JOHN S TURPIN
5602 RESEARCH DR
HUNTINGTON BEACH CA 92649

PHONE: 714-894-1172

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	N - NO
SUBJCA TSD 3004:	N - NO
SUBJCA NON TSD:	N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):	N - NO
BEGINNING OF THE YEAR SNC:	
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	N - NO
GENERATOR STATUS:	SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE
INSTITUTIONAL CONTROL:	N
HUMAN EXPOSURE:	
GW CONTROLS:	
LAND TYPE:	P

NAIC INFORMATION

48819 - OTHER SUPPORT ACTIVITIES FOR AIR TRANSPORTATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

D001 - IGNITABLE WASTE
D018 - BENZENE
D039 - TETRACHLOROETHYLENE
D040 - TRICHLOROETHYLENE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 98 **DIST/DIR:** 0.86 SE **ELEVATION:** 12 **MAP ID:** 183

NAME: US WHEEL CORP
ADDRESS: 5432 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0001003359
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: FLOYD PLANT
5432 PRODUCTION DR
HUNTINGTON BEACH CA 92649

PHONE: 7148920021

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 284 **DIST/DIR:** 0.86 NE **ELEVATION:** 16 **MAP ID:** 184

NAME: SIGNAL ENTERPRISE
ADDRESS: 15319 PIPELINE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000314728
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 302 **DIST/DIR:** 0.86 SE **ELEVATION:** 10 **MAP ID:** 185

NAME: VINCENT THOMAS DDS
ADDRESS: 16141 BOLSA CHICA ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000105846
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/21/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *16141 BOLSA CHICA ST, HUNTINGTON BEACH, CA 92649-2454*
Owner Name: *VINCENT R THOMAS DDS*
Owner Address: *17012 LOWELL CIRCLE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *JANICE LIBERTI*
Contact Address: *16141 BOLSA CHICA RD, HUNTINGTON BEACH,*
Contact Phone: *7148461386*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 302 **DIST/DIR:** 0.86 SE **ELEVATION:** 10 **MAP ID:** 185

NAME: VINCENT THOMAS DDS
ADDRESS: 16141 BOLSA CHICA ROAD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000105846
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 51 **DIST/DIR:** 0.87 SE **ELEVATION:** 12 **MAP ID:** 186

NAME: IVERPAC CORPORATION
ADDRESS: 5455 PRODUCTION DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982030256
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5455 PRODUCTION DR
HUNTINGTON BEACH CA 92649

PHONE: 7148954460

UNIVERSE INFORMATION:

NAIC INFORMATION

331 - PRIMARY METAL MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 80 **DIST/DIR:** 0.87 SE **ELEVATION:** 12 **MAP ID:** 187

NAME: SEA GATE BAKERY
ADDRESS: 16107 BOLSA CHICA DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981997364
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HWMANIFEST

SEARCH ID: 236 **DIST/DIR:** 0.87 NE **ELEVATION:** 16 **MAP ID:** 188

NAME: FIBER SEAL OF LOS ANGELES INC
ADDRESS: 15201 PIPELINE STE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000307675
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 83 **DIST/DIR:** 0.88 SE **ELEVATION:** 14 **MAP ID:** 189

NAME: SONIC JET PERFORMANCE INC
ADDRESS: 15662 COMMERCE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000052571
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: VATCHE KHEDESIAN
15662 COMMERCE LN
HUNTINGTON BEACH CA 92649

PHONE: 7148950944

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 277 **DIST/DIR:** 0.88 SE **ELEVATION:** 13 **MAP ID:** 190

NAME: RACE TRACK PISTONS INC
ADDRESS: 15681 COMPUTER LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000312982
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 126 **DIST/DIR:** 0.89 SE **ELEVATION:** 14 **MAP ID:** 191

NAME: MARSECO
ADDRESS: 5742 MCFADDEN
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 5/19/92
ID1: 268635
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/19/1992 **TIME OF SPILL:** 0800

PRODUCT RELEASED (1): COPPER SULFATE (WASH)
QUANTITY (1): 200
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

SPILL INFORMATION
DATE OF SPILL: 5/19/1992 **TIME OF SPILL:** 0800

PRODUCT RELEASED (1): COPPER SULFATE (WASH)
QUANTITY (1): 200
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 126 **DIST/DIR:** 0.89 SE **ELEVATION:** 14 **MAP ID:** 191

NAME: MARSECO
ADDRESS: 5742 MCFADDEN
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 5/19/92
ID1: 268635
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: UNITED PUMPING TO CLEAN
RELEASE DETECTION: ACCIDENTALLY SPILLED 5 GALS OF WASTE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 268635
TYPE OF DISCHARGER:
NAME OF DISCHARGER: MARSECO
ADDRESS: 5742 MCFADDEN
HUNTINGTON BEACH CA 92649-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: UNITED PUMPING TO CLEAN
RELEASE DETECTION: ACCIDENTALLY SPILLED 5 GALS OF WASTE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 268635
TYPE OF DISCHARGER:
NAME OF DISCHARGER: MARSECO
ADDRESS: 5742 MCFADDEN
HUNTINGTON BEACH CA 92649-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 260 **DIST/DIR:** 0.89 SE **ELEVATION:** 13 **MAP ID:** 192

NAME: MIL SPEC HEAT TREATING INC.
ADDRESS: 5662 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000288334
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 288 **DIST/DIR:** 0.89 SE **ELEVATION:** 16 **MAP ID:** 193

NAME: STD WIRE PRODUCTS INC.
ADDRESS: 5791 MACHINE DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000252065
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/15/2002 2:36:45 PM*
Inactivity Date:
Facility Mail Name: *STD WIRE PRODUCTS INC.*
Facility Mailing Address: *5791 MACHINE DR, HUNTINGTON BEACH, CA 92649*
Owner Name: *LARRY NGUYEN*
Owner Address: *5791 MACHINE DR, HUNTINGTON BEACH, CA 92649*
Contact Name: *LARRY NGUYEN*
Contact Address: *5791 MACHINE DR, HUNTINGTON BEACH, CA 92649*
Contact Phone: *7143793200*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type: *Oil/water separation sludge*
2003 Total Tonnage: *0.22*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 288 **DIST/DIR:** 0.89 SE **ELEVATION:** 16 **MAP ID:** 193

NAME: STD WIRE PRODUCTS INC.
ADDRESS: 5791 MACHINE DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000252065
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 10 **DIST/DIR:** 0.90 NE **ELEVATION:** 18 **MAP ID:** 194

NAME: BALL AEROSPACE SYS DIV MP
ADDRESS: 5252 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD981457161
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRANLR

SEARCH ID: 110 **DIST/DIR:** 0.90 SE **ELEVATION:** 14 **MAP ID:** 195

NAME: MICA INDUSTRIES
ADDRESS: 15641 COMPUTER LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000204867
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: EARL NIELSEN
15641 COMPUTER LN
HUNTINGTON BEACH CA 92649

PHONE: 7148925586

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	N - NO
SUBJCA TSD 3004:	N - NO
SUBJCA NON TSD:	N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):	N - NO
BEGINNING OF THE YEAR SNC:	
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	N - NO
GENERATOR STATUS:	N
INSTITUTIONAL CONTROL:	N
HUMAN EXPOSURE:	
GW CONTROLS:	
LAND TYPE:	P

NAIC INFORMATION

23831 - DRYWALL AND INSULATION CONTRACTORS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

D001 - IGNITABLE WASTE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 228 **DIST/DIR:** 0.90 SE **ELEVATION:** 16 **MAP ID:** 196

NAME: DEAD SLEDS CORPORATION
ADDRESS: 15392 ASSEMBLY LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000319320
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 214 **DIST/DIR:** 0.91 NE **ELEVATION:** 18 **MAP ID:** 197

NAME: C and D ZODIAC INC
ADDRESS: 5701 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000300057
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 16 **DIST/DIR:** 0.91 NE **ELEVATION:** 18 **MAP ID:** 197

NAME: CandD ZODIAC - BOLSA
ADDRESS: 5701 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAL000300057
ID2:
STATUS: LGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JAKE D NEWKIRK
BOLSA AVENUE
HUNTINGTON BEACH CA 92647

PHONE: 7144650497

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA: N - NO
SUBJCA TSD 3004: N - NO
SUBJCA NON TSD: N - NO
SIGNIFICANT NON-COMPLIANCE(SNC): N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD: -----
CLOSURE WORKLOAD: -----
POST CLOSURE WORKLOAD: -----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS: -----
CORRECTIVE ACTION WORKLOAD: N - NO
GENERATOR STATUS: LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL: N
HUMAN EXPOSURE:
GW CONTROLS:
LAND TYPE: P

NAIC INFORMATION

336413 - OTHER AIRCRAFT PARTS AND AUXILIARY EQUIPMENT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

141
331
352
551
D001 - IGNITABLE WASTE

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 16 **DIST/DIR:** 0.91 NE **ELEVATION:** 18 **MAP ID:** 197

NAME: CandD ZODIAC - BOLSA
ADDRESS: 5701 BOLSA AVE
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAL000300057
ID2:
STATUS: LGN
PHONE:

F003 - THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/ BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON- HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 8 **DIST/DIR:** 0.92 SE **ELEVATION:** 14 **MAP ID:** 198

NAME: B Z PRINTING
ADDRESS: 15532 COMPUTER LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982508509
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15532 COMPUTER LN
HUNTINGTON BEACH CA 92649

PHONE: 7148922000

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 78 **DIST/DIR:** 0.92 NE **ELEVATION:** 18 **MAP ID:** 199

NAME: SAFE T JACK INC
ADDRESS: 5641 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983653148
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: DAVID KOEBLITZ
5641 ENGINEER DRIVE
HUNTINGTON BEACH CA 92649

PHONE: 7148952324

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 273 **DIST/DIR:** 0.92 NE **ELEVATION:** 18 **MAP ID:** 200

NAME: PRECISION RESOURCE CAL DIVISION
ADDRESS: 5803 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000204971
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *7/25/2000*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5803 ENGINEER DR, HUNTINGTON BEACH, CA 92649-1127*
Owner Name: *PRECISION RESOURCE INC*
Owner Address: *25 FORREST PARKWAY, SHELTON, CT 06484-0000*
Contact Name: *ERIC LIESEMER*
Contact Address: *5803 ENGINEER DR, HUNTINGTON BEACH, CA 92649-1127*
Contact Phone: *7148914439*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Waste oil and mixed oil*
2009 Total Tonnage: *10.564*
2008 Waste Type: *Waste oil and mixed oil*
2008 Total Tonnage: *15.39*
2007 Waste Type: *Other organic solids*
2007 Total Tonnage: *2.03185*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *4.79*
2005 Waste Type: *Other organic solids*
2005 Total Tonnage: *0.02*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Waste oil and mixed oil*
2004 Total Tonnage: *19.99*
2003 Waste Type: *Waste oil and mixed oil*
2003 Total Tonnage: *25.02*
2002 Waste Type: *Other organic solids*
2002 Total Tonnage: *0.3*
2001 Waste Type: *Other organic solids*
2001 Total Tonnage: *1.15*
2000 Waste Type: *Other organic solids*
2000 Total Tonnage: *3.1*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 273 **DIST/DIR:** 0.92 NE **ELEVATION:** 18 **MAP ID:** 200

NAME: PRECISION RESOURCE CAL DIVISION
ADDRESS: 5803 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000204971
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 298 **DIST/DIR:** 0.92 NE **ELEVATION:** 18 **MAP ID:** 201

NAME: UNITED CALIBRATION CORPORATION
ADDRESS: 5802 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000161867
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *8/25/1997*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5802 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *UNITED CALIBRATION CORP*
Owner Address: *5802 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *T D. SETTIMI, DIR OF OPTNS*
Contact Address: *5802 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7146382322*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type: *Unspecified aqueous solution*
2008 Total Tonnage: *0.126*
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *0.22*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type: *Waste oil and mixed oil*
2000 Total Tonnage: *0.45*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Waste oil and mixed oil*
1999 Total Tonnage: *0.2293*
1998 Waste Type: *Waste oil and mixed oil*
1998 Total Tonnage: *0.542*
1997 Waste Type: *Waste oil and mixed oil*
1997 Total Tonnage: *0.4586*
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 298 **DIST/DIR:** 0.92 NE **ELEVATION:** 18 **MAP ID:** 201

NAME: UNITED CALIBRATION CORPORATION
ADDRESS: 5802 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000161867
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 36 **DIST/DIR:** 0.93 SE **ELEVATION:** 14 **MAP ID:** 202

NAME: ERVINS AUTO
ADDRESS: 15542 COMPUTER LN STE C
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983592510
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ZARRABI NADER
15542 COMPUTER LN STE C
HUNTINGTON BEACH CA 92649

PHONE: 7148978959

UNIVERSE INFORMATION:

NAIC INFORMATION

811118 - OTHER AUTOMOTIVE MECHANICAL AND ELECTRICAL REPAIR AND MAINTENANCE

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 55 **DIST/DIR:** 0.93 SE **ELEVATION:** 14 **MAP ID:** 203

NAME: LASER JET PERFORMANCE
ADDRESS: 15591 COMPUTER LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983666470
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: HRATCH KHEDESIAN
15591 COMPUTER LN
HUNTINGTON BEACH CA 92649

PHONE: 7148953329

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 56 **DIST/DIR:** 0.94 SE **ELEVATION:** 14 **MAP ID:** 204

NAME: M F G CONCEPTS INC
ADDRESS: 15592 COMPUTER LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983672767
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: GEORGE P JOHNSON
15592 COMPUTER LN
HUNTINGTON BEACH CA 92649

PHONE: 7145576696

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 108 **DIST/DIR:** 0.94 SE **ELEVATION:** 16 **MAP ID:** 205

NAME: HYPER CORP THE
ADDRESS: 15431 ELECTRONIC LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD983672643
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ERIC JOHNSON
15241 TRANSISTOR LN
HUNTINGTON BEACH CA 92649

PHONE: 7143733300

UNIVERSE INFORMATION:

NAIC INFORMATION

326199 - ALL OTHER PLASTICS PRODUCT MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 261 **DIST/DIR:** 0.94 NE **ELEVATION:** 17 **MAP ID:** 206

NAME: MILCO-WIRE EDM
ADDRESS: 15221 CONNECTOR LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000205107
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *9/7/2000*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15221 CONNECTOR LN, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *MILCO WIRE EDM*
Owner Address: *15221 CONNECTOR LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *STEVE MILLER*
Contact Address: *15221 CONNECTOR LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7143730098*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)*
2009 Waste Type: *Waste oil and mixed oil*
2009 Total Tonnage: *0.608*
2008 Waste Type: *Waste oil and mixed oil*
2008 Total Tonnage: *0.627*
2007 Waste Type: *Waste oil and mixed oil*
2007 Total Tonnage: *0.4587*
2006 Waste Type: *Waste oil and mixed oil*
2006 Total Tonnage: *0.22*
2005 Waste Type: *Waste oil and mixed oil*
2005 Total Tonnage: *1.12*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Waste oil and mixed oil*
2004 Total Tonnage: *0.22*
2003 Waste Type: *Other inorganic solid waste*
2003 Total Tonnage: *0.84*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Other inorganic solid waste*
2001 Total Tonnage: *1.68*
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 261 **DIST/DIR:** 0.94 NE **ELEVATION:** 17 **MAP ID:** 206

NAME: MILCO-WIRE EDM
ADDRESS: 15221 CONNECTOR LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000205107
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 291 **DIST/DIR:** 0.94 SE **ELEVATION:** 14 **MAP ID:** 207

NAME: TENSION MEMBER TECHNOLOGY
ADDRESS: 5721 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000282095
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/12/2004 1:14:28 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5721 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1616*
Owner Name: *TENSION MEMBER TECHNOLOGY*
Owner Address: *5721 RESEARCH DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *KRISTIN BURGETT/EX: 102*
Contact Address: *5721 RESEARCH DR, HUNTINGTON BEACH, CA 92649-1616*
Contact Phone: *7148985641*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 291 **DIST/DIR:** 0.94 SE **ELEVATION:** 14 **MAP ID:** 207

NAME: TENSION MEMBER TECHNOLOGY
ADDRESS: 5721 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000282095
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 293 **DIST/DIR:** 0.94 NE **ELEVATION:** 16 **MAP ID:** 208

NAME:	THE DING KING TRAINING INSTITUTE INC	**REV:**	02/19/10
ADDRESS:	15301 CONNECTOR LANE	**ID1:**	CAL000330057
	HUNTINGTON BEACH CA 92649	**ID2:**	
	ORANGE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	
SOURCE:	CA DTSC		

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 26 **DIST/DIR:** 0.95 NE **ELEVATION:** 20 **MAP ID:** 209

NAME: CLEVELAND GOLF CORP OFFICE
ADDRESS: 5601 SKYLAB RD
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000157172
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: CARL CROTTEAU
5601 SKYLAB RD
HUNTINGTON BEACH CA 92649

PHONE: 714-821-4200

UNIVERSE INFORMATION:

NAIC INFORMATION

33992 - SPORTING AND ATHLETIC GOODS MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste
Chromium
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 42 **DIST/DIR:** 0.95 SE **ELEVATION:** 14 **MAP ID:** 210

NAME: GOLDENWEST CIRCUITS INC
ADDRESS: 15622 COMPUTER LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CA0001012384
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: MIKE MALAVIA
15622 COMPUTER LN
HUNTINGTON BEACH CA 92649

PHONE: 7143796700

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 250 **DIST/DIR:** 0.95 NE **ELEVATION:** 16 **MAP ID:** 211

NAME: JE PISTONS INC
ADDRESS: 15312 CONNECTOR LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000196984
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *3/15/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15312 CONNECTOR LANE, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *JE PISTONS INC*
Owner Address: *15312 CONNECTOR LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *JIM IRWIN*
Contact Address: *15312 CONNECTOR LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148989763*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Unspecified organic liquid mixture*
2009 Total Tonnage: *0.0068*
2008 Waste Type: *Unspecified aqueous solution*
2008 Total Tonnage: *52.5*
2007 Waste Type: *Liquids with pH <= 2*
2007 Total Tonnage: *0.0834*
2006 Waste Type: *Other organic solids*
2006 Total Tonnage: *0.27*
2005 Waste Type: *Other organic solids*
2005 Total Tonnage: *1.29*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other organic solids*
2004 Total Tonnage: *1.35*
2003 Waste Type: *Other organic solids*
2003 Total Tonnage: *2.2*
2002 Waste Type: *Other organic solids*
2002 Total Tonnage: *3.62*
2001 Waste Type: *Other organic solids*
2001 Total Tonnage: *1*
2000 Waste Type: *Unspecified oil-containing waste*
2000 Total Tonnage: *1.27*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Oil/water separation sludge*
1999 Total Tonnage: *22.8933*
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 250 **DIST/DIR:** 0.95 NE **ELEVATION:** 16 **MAP ID:** 211

NAME: JE PISTONS INC
ADDRESS: 15312 CONNECTOR LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000196984
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 217 **DIST/DIR:** 0.96 SE **ELEVATION:** 16 **MAP ID:** 212

NAME: CIBA CORP DBA PIRA INTERNATIONAL
ADDRESS: 15361 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000327657
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 255 **DIST/DIR:** 0.96 SE **ELEVATION:** 16 **MAP ID:** 212

NAME: LANSMONT WESTERN TECHNICAL SERVICE
ADDRESS: 15361 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000318801
ID2:
STATUS: INACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 280 **DIST/DIR:** 0.96 NE **ELEVATION:** 18 **MAP ID:** 213

NAME: SANCON ENGINEERING INC
ADDRESS: 5841 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000156729
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *4/17/1995*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5841 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *NICK DIBENEDETTO*
Owner Address: *5841 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *DALE FIKE*
Contact Address: *5841 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148912323*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type:
2009 Total Tonnage:
2008 Waste Type: *Unspecified organic liquid mixture*
2008 Total Tonnage: *0.459*
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type:
2006 Total Tonnage:
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 280 **DIST/DIR:** 0.96 NE **ELEVATION:** 18 **MAP ID:** 213

NAME: SANCON ENGINEERING INC
ADDRESS: 5841 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000156729
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 9 **DIST/DIR:** 0.97 SE **ELEVATION:** 16 **MAP ID:** 214

NAME: BAKER OIL TOOLS
ADDRESS: 15421 ASSEMBLY LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000035816
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JIM MICK
15421 ASSEMBLY LN
HUNTINGTON BEACH CA 92649

PHONE: 7148918544

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

1,4-Dichlorobenzene
Tetrachloroethylene
Lead
Benzene
Cadmium
Ignitable waste
Trichloroethylene

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRANLR

SEARCH ID: 107 **DIST/DIR:** 0.97 SE **ELEVATION:** 14 **MAP ID:** 215

NAME: HALO INDUSTRIES
ADDRESS: 15541 PRODUCT LN UNIT B
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD983663097
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ZACH HALOPOFF
15422 ASSEMBLY LN
HUNTINGTON BEACH CA 92649

PHONE: 714-373-3333

UNIVERSE INFORMATION:

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	N - NO
SUBJCA TSD 3004:	N - NO
SUBJCA NON TSD:	N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):	N - NO
BEGINNING OF THE YEAR SNC:	
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	N - NO
GENERATOR STATUS:	N
INSTITUTIONAL CONTROL:	N
HUMAN EXPOSURE:	
GW CONTROLS:	
LAND TYPE:	P

NAIC INFORMATION

332313 - PLATE WORK MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 143 **DIST/DIR:** 0.97 SE **ELEVATION:** 15 **MAP ID:** 216

NAME: SEIKO
ADDRESS: 15541 PRODUCT LANE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 5/19/92
ID1: 268628
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/19/1992 **TIME OF SPILL:** 0905

PRODUCT RELEASED (1): HIGH PH WATER
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: STORM DRAIN

SPILL INFORMATION
DATE OF SPILL: 5/19/1992 **TIME OF SPILL:** 0905

PRODUCT RELEASED (1): HIGH PH WATER
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: STORM DRAIN

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 143 **DIST/DIR:** 0.97 SE **ELEVATION:** 15 **MAP ID:** 216

NAME: SEIKO
ADDRESS: 15541 PRODUCT LANE
HUNTINGTON BEACH CA 92649
Orange
CONTACT:
SOURCE: EPA

REV: 5/19/92
ID1: 268628
ID2:
STATUS: FIXED FACILITY
PHONE:

ACTIONS TAKEN: CO HEALTH ON SCENE
RELEASE DETECTION: WORKERS WASHED OUT NEW EQUIPMENT WIHT COPPER UNIT INTO STORM DRAIN. ONGOING FOR 2 DAYS
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 268628
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: SEIKO
ADDRESS: 15541 PRODUCT LANE
HUNTINGTON BEACH CA 92649-

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CO HEALTH ON SCENE
RELEASE DETECTION: WORKERS WASHED OUT NEW EQUIPMENT WIHT COPPER UNIT INTO STORM DRAIN. ONGOING FOR 2 DAYS
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 268628
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: SEIKO
ADDRESS: 15541 PRODUCT LANE
HUNTINGTON BEACH CA 92649-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 227 **DIST/DIR:** 0.97 SE **ELEVATION:** 16 **MAP ID:** 217

NAME: DAVID PRUKOP S AUTO BODY and PAINT
ADDRESS: 15362 ELETRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000173143
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *2/24/2000*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15362 ELETRONIC LN, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *DAVID PRUKOP S AUTO BODY and PAINT*
Owner Address: *15362 ELETRONIC LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *DAVID PRUKOP/PRES*
Contact Address: *15362 ELETRONIC LN, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148911321*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE*
2009 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2009 Total Tonnage: *0.1815*
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type: *Waste oil and mixed oil*
2007 Total Tonnage: *0.22935*
2006 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2006 Total Tonnage:
2005 Waste Type: *Unspecified solvent mixture*
2005 Total Tonnage: *0.45*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Unspecified solvent mixture*
2004 Total Tonnage: *0.62*
2003 Waste Type: *Unspecified solvent mixture*
2003 Total Tonnage: *0.45*
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type: *Unspecified solvent mixture*
2001 Total Tonnage: *0.68*
2000 Waste Type: *Paint sludge*
2000 Total Tonnage: *0.66*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 227 **DIST/DIR:** 0.97 SE **ELEVATION:** 16 **MAP ID:** 217

NAME: DAVID PRUKOP S AUTO BODY and PAINT
ADDRESS: 15362 ELETRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000173143
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 295 **DIST/DIR:** 0.97 NE **ELEVATION:** 18 **MAP ID:** 218

NAME: TIODIZE CO INC
ADDRESS: 5858 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000225226
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *10/22/2001*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5858 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *TIODIZE CO INC*
Owner Address: *5858 ENGINEER DR, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *GARY WHITTMAN*
Contact Address: *, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148984377*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT*
2009 Waste Type: *Unspecified aqueous solution*
2009 Total Tonnage: *0.231*
2008 Waste Type: *Unspecified aqueous solution*
2008 Total Tonnage: *0.462*
2007 Waste Type: *Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)*
2007 Total Tonnage: *0.22935*
2006 Waste Type: *Unspecified aqueous solution*
2006 Total Tonnage: *0.22*
2005 Waste Type:
2005 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type:
2004 Total Tonnage:
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type:
2002 Total Tonnage:
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 295 **DIST/DIR:** 0.97 NE **ELEVATION:** 18 **MAP ID:** 218

NAME: TIODIZE CO INC
ADDRESS: 5858 ENGINEER DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000225226
ID2:
STATUS: ACTIVE
PHONE:

1993 Waste Type:
1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 43 **DIST/DIR:** 0.98 SE **ELEVATION:** 16 **MAP ID:** 219

NAME: HALO IND INC
ADDRESS: 15422 ASSEMBLY LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD982443848
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ZACH HALOPOFF
15422 ASSEMBLY LN
HUNTINGTON BEACH CA 92649

PHONE: 7148918716

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15422 ASSEMBLY LN
HUNTINGTON BEACH CA 92649

PHONE: 7148918716

UNIVERSE INFORMATION:

NAIC INFORMATION

33271 - MACHINE SHOPS
315299 - ALL OTHER CUT AND SEW APPAREL MANUFACTURING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 206 **DIST/DIR:** 0.98 NE **ELEVATION:** 20 **MAP ID:** 220

NAME: AIRTECH INTERNATIONAL INC
ADDRESS: 5700 SKYLAB ROAD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000170742
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *1/8/1999*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *5700 SKYLAB RD, HUNTINGTON BEACH, CA 92647-0000*
Owner Name: *AIRTECH INTERNATIONAL INC*
Owner Address: *5700 SKYLAB ROAD, HUNTINGTON BEACH, CA 92647-0000*
Contact Name: *JOHN MALIGIE-VICE PRESIDENT*
Contact Address: *5700 SKYLAB RD, HUNTINGTON BEACH, CA 92647-0000*
Contact Phone: *7148998100*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type: *FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE*
2009 Waste Type: *Off-specification, aged or surplus organics*
2009 Total Tonnage: *0.1665*
2008 Waste Type: *Off-specification, aged or surplus organics*
2008 Total Tonnage: *0.2725*
2007 Waste Type: *Other organic solids*
2007 Total Tonnage: *8.0105*
2006 Waste Type: *Off-specification, aged or surplus organics*
2006 Total Tonnage: *0.21*
2005 Waste Type: *Off-specification, aged or surplus organics*
2005 Total Tonnage: *0.35*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Off-specification, aged or surplus organics*
2004 Total Tonnage: *0.69*
2003 Waste Type: *Unspecified aqueous solution*
2003 Total Tonnage: *0.58*
2002 Waste Type: *Waste oil and mixed oil*
2002 Total Tonnage: *0.31*
2001 Waste Type: *Waste oil and mixed oil*
2001 Total Tonnage: *0*
2000 Waste Type: *Other organic solids*
2000 Total Tonnage: *2.3*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type: *Other organic solids*
1999 Total Tonnage: *50.568*
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 206 **DIST/DIR:** 0.98 NE **ELEVATION:** 20 **MAP ID:** 220

NAME: AIRTECH INTERNATIONAL INC
ADDRESS: 5700 SKYLAB ROAD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000170742
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 211 **DIST/DIR:** 0.98 SE **ELEVATION:** 14 **MAP ID:** 221

NAME: BARICO LIGHTING INC
ADDRESS: 5761 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000306218
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 278 **DIST/DIR:** 0.98 SE **ELEVATION:** 15 **MAP ID:** 222

NAME: RODON PRODUCTS INC
ADDRESS: 15481 ELECTRONIC STE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000307654
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 224 **DIST/DIR:** 0.98 SE **ELEVATION:** 15 **MAP ID:** 222

NAME: CONVERSION DEVICES INC
ADDRESS: 15481 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000068301
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *10/21/1992*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *15481 ELECTRONIC LN STE D, HUNTINGTON BEACH, CA 92649-0000*
Owner Name: *ROLAND ROTH*
Owner Address: *15481 ELECTRONIC LN STE D, HUNTINGTON BEACH, CA 92649-0000*
Contact Name: *TERRY MORTIMER / OFF MGR*
Contact Address: *15481 ELECTRONIC LANE, HUNTINGTON BEACH, CA 92649-0000*
Contact Phone: *7148986551*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2005-2009:

2009 Method Type:
2009 Waste Type: *Other inorganic solid waste*
2009 Total Tonnage: *0.175*
2008 Waste Type:
2008 Total Tonnage:
2007 Waste Type:
2007 Total Tonnage:
2006 Waste Type: *Other inorganic solid waste*
2006 Total Tonnage: *0.06*
2005 Waste Type: *Other inorganic solid waste*
2005 Total Tonnage: *0.06*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2004:

2004 Waste Type: *Other inorganic solid waste*
2004 Total Tonnage: *0.45*
2003 Waste Type:
2003 Total Tonnage:
2002 Waste Type: *Other inorganic solid waste*
2002 Total Tonnage: *0.99*
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type: *Other inorganic solid waste*
1998 Total Tonnage: *0.2955*
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type: *Other inorganic solid waste*
1995 Total Tonnage: *0.25*
1994 Waste Type: *Other inorganic solid waste*
1994 Total Tonnage: *0.6*
1993 Waste Type: *Other inorganic solid waste*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 224 **DIST/DIR:** 0.98 SE **ELEVATION:** 15 **MAP ID:** 222

NAME: CONVERSION DEVICES INC
ADDRESS: 15481 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000068301
ID2:
STATUS: ACTIVE
PHONE:

1993 Total Tonnage: *0.2*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 246 **DIST/DIR:** 0.98 SE **ELEVATION:** 15 **MAP ID:** 223

NAME: HQ MACHINE TECH INC
ADDRESS: 15432 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000290598
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

HWMANIFEST

SEARCH ID: 283 **DIST/DIR:** 0.98 SE **ELEVATION:** 16 **MAP ID:** 224

NAME: SENSONETICS INC
ADDRESS: 15402 ELECTRONIC LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000289886
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 58 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 225

NAME: MC DONNELL DOUGLAS
ADDRESS: 5212 RANCHO RD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 12/9/02
ID1: CAP000065474
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE TYPE:

SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

SIC INFORMATION:

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 33 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 225

NAME: DUKE SOLUTIONS HUNTINGTON BEACH
ADDRESS: 5212 RANCHO RD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAT000623975
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: BALTAZAR OSORIO
5212 RANCHO RD
HUNTINGTON BEACH CA 92647

PHONE: 7148962282

UNIVERSE INFORMATION:

NAIC INFORMATION

2212 - NATURAL GAS DISTRIBUTION
22133 - STEAM AND AIR-CONDITIONING SUPPLY
22133 - STEAM AND AIR-CONDITIONING SUPPLY
2211 - ELECTRIC POWER GENERATION, TRANSMISSION AND DISTRIBUTION
22133 - STEAM AND AIR-CONDITIONING SUPPLY

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Mercury
The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichlorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; all spent solvent mixtures/bl
Ignitable waste
D000
Lead

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 122 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 225

NAME: CENTRAL PLANTS
ADDRESS: 5212 RANCHO RD
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE: EPA

REV: 10/25/99
ID1: 646741
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 10/25/1999 **TIME OF SPILL:** 0715

PRODUCT RELEASED (1): OIL, MISC: MOTOR
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: SOIL

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: 90 PERCENT WAS FRESH MOTOR OIL / CLEAN UP IS UNDERWAY / THE MATERIAL SPILLED INTO A PIT
RELEASE DETECTION: THE MATERIAL SPILLED DUE TO A BREAK IN A PIPE THAT FEEDS OIL TO AN ENGINE / THE OIL SPILLED INTO A SUMP WHICH THEN OVERFLOWED
MISC. NOTES: WILL NOITFY: REGIONAL WATER QUALITY BOARD

DISCHARGER INFORMATION

DISCHARGER ID: 646741
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: CENTRAL PLANTS
ADDRESS: 5212 RANCHO ROAD
HUNTINGTON BEACH CA 92647

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

HWMANIFEST

SEARCH ID: 209 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 225

NAME: AMERESCO HUNTINGTON BEACH LLC
ADDRESS: 5212 RANCHO ROAD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000289261
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

RCRAGN

SEARCH ID: 59 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 225

NAME: MC DONNELL DOUGLAS
ADDRESS: 5212 RANCHO RD
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAR000083113
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ROBERT COPELAND
5301 BOLSA AVE H028 6111
HUNTINGTON BEACH CA 926472099

PHONE: 7148962416

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 174 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL PLANTS INC
ADDRESS: 5223 RANCHO
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE:

REV: 01/01/94
ID1: TISID-STATE32778
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.
The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.
Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.
Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by us. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

ERNS

SEARCH ID: 123 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL PLANTS INC.
ADDRESS: 5223 RANCHO RD
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: EPA

REV: 11/28/1994
ID1: 415925
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/28/1994 **TIME OF SPILL:** 0000

PRODUCT RELEASED (1): SULFURIC ACID
QUANTITY (1): 400
UNITS (
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANS**

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 192 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL PLANTS
ADDRESS: 5223 RANCHO
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901042
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *ORANGE COUNTY LOP*
REGIONAL BOARD CASE NUMBER: *083001380T*
LOCAL AGENCY: *ORANGE COUNTY LOP*
LOCAL CASE NUMBER: *89UT223*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Diesel*
POTENTIAL MEDIA AFFECTED: *Other Groundwater (uses other than drinking water)*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Completed - Case Closed*
STATUS DATE: *1991-04-26*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01 00:00:00*
ACTION (blank if not reported): *Excavate and Dispose*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS:
MTBE FUEL:
MTBE TESTED:
MTBE CLASS:

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 192 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL PLANTS
ADDRESS: 5223 RANCHO
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 10/13/10
ID1: T0605901042
ID2:
STATUS: COMPLETED - CASE CLOSED
PHONE:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 121 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL ,PLANTS INC
ADDRESS: 5223 RANCHO RD
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: EPA

REV: 11/28/1994
ID1: 415058
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/28/1994 **TIME OF SPILL:** 0000

PRODUCT RELEASED (1): SULFURIC ACID
QUANTITY (1): 400
UNITS (
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP**

OTHER

SEARCH ID: 159 **DIST/DIR:** 0.99 NE **ELEVATION:** 19 **MAP ID:** 226

NAME: CENTRAL PLANTS
ADDRESS: 5223 RANCHO RD
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_89UT223
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION
Case Type: *G*
Contract Status: *4*
Fund: *F*
Substance Code: *12034*
Description: *DIESEL*
Lead Refferal: *N*
Enforcement:
Date Closed: *04-26-91*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 145 **DIST/DIR:** 0.99 SE **ELEVATION:** 16 **MAP ID:** 227

NAME:
ADDRESS: 15431 ELECTRIC LANE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: EPA

REV: 5/5/1995
ID1: 434661
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/5/1995 **TIME OF SPILL:** 2030

PRODUCT RELEASED (1): UNKNOWN MATERIAL
QUANTITY (1): 0
UNITS (1
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP**

HWMANIFEST

SEARCH ID: 300 **DIST/DIR:** 0.99 SE **ELEVATION:** 13 **MAP ID:** 228

NAME: VandS ENGINEERING
ADDRESS: 5766 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000290320
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 11 **DIST/DIR:** 1.00 SE **ELEVATION:** 13 **MAP ID:** 229

NAME: BINGHAM DIV OF BFI
ADDRESS: 5722 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD073575094
ID2:
STATUS: VGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5722 RESEARCH DR
HUNTINGTON BEACH CA 92649

PHONE: 7148943355

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	B - STATE CONTRACTOR
DETERMINED:	2/12/1986	**DETERMINED BY:**	B - STATE CONTRACTOR
CITATION:	262.10-12.A		
RESOLVED:	6/12/1986		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		

VIOLATION NUMBER:	0002	**RESPONSIBLE:**	B - STATE CONTRACTOR
DETERMINED:	6/12/1986	**DETERMINED BY:**	B - STATE CONTRACTOR
CITATION:	262.10-12.A		
RESOLVED:	6/12/1991		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 14 **DIST/DIR:** 1.00 NE **ELEVATION:** 17 **MAP ID:** 230

NAME: C and C BOATS INC
ADDRESS: 15201 PIPELINE LANE
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAD028406072
ID2:
STATUS: TRANSPORTER
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
15201 PIPELINE LANE
HUNTINGTON BEACH CA 92649

PHONE: 7148985885

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 1/3/2002
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 1/3/2002
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0200 **RESPONSIBLE:** S - STATE
DETERMINED: 12/24/2001 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 2/18/2002
TYPE: TRANSPORTER-GENERAL REQUIREMENTS

VIOLATION NUMBER: 0205 **RESPONSIBLE:** S - STATE
DETERMINED: 12/24/2001 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 2/18/2002
TYPE: TRANSPORTER-MANIFEST/RECORD KEEPING REQUIREMENTS

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 35 **DIST/DIR:** 1.00 NE **ELEVATION:** 16 **MAP ID:** 231

NAME: EINMALIG L T D
ADDRESS: 15335 PIPELINE LN
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD983599473
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: JACK CHOTT
15335 PIPELINE LN
HUNTINGTON BEACH CA 92649

PHONE: 7148956567

UNIVERSE INFORMATION:

NAIC INFORMATION

44131 - AUTOMOTIVE PARTS AND ACCESSORIES STORES

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 68 **DIST/DIR:** 1.00 NE **ELEVATION:** 17 **MAP ID:** 232

NAME: P W STEPHENS ENVIRONMENTAL INC
ADDRESS: 15201 PIPELINE LN STE B
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 9/14/10
ID1: CAR000050815
ID2:
STATUS: TRANSPORTER
PHONE:

SITE INFORMATION

CONTACT INFORMATION: SCOTT JOHNSON
15201 PIPELINE LN STE B
HUNTINGTON BEACH CA 92649

PHONE: 7148922028

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 8/15/2005
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 3/10/2005
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 8/15/2005
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 8/15/2005
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 8/15/2005
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 3/10/2005
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0200 **RESPONSIBLE:** S - STATE
DETERMINED: 3/10/2005 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 3/22/2005
TYPE: TRANSPORTER-GENERAL REQUIREMENTS

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

RCRAGN

SEARCH ID: 72 **DIST/DIR:** 1.00 SE **ELEVATION:** 13 **MAP ID:** 233

NAME: PHOTO TEMPLATE CORP
ADDRESS: 5721 RESEARCH DR
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 7/14/10
ID1: CAD059784645
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5721 RESEARCH DR
HUNTINGTON BEACH CA 92649

PHONE: 2135989547

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 334 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-2
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-2
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100353900
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 13*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 335 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-3
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-3
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100354000
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 12*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: ***

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 336 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-3
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-3
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100354100
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 11*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 337 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-9
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-4 - IRP-9
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100350800
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 18*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE: *SOIL ONLY*
SUBSTANCE LEAKED: *7440473, 744*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED: *NO DESCRIPTION*
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1965-01-02 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 338 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-1
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-1
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100352400
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 15*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

TRIBALLAND

SEARCH ID: 348 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92649
ORANGE
CONTACT:
SOURCE: BIA

REV: 01/15/08
ID1: BIA-92649
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

The Native American Consultation Database (NACD) is a tool for identifying consultation contacts for Indian tribes, Alaska Native villages and corporations, and Native Hawaiian organizations. The database is not a comprehensive source of information, but it does provide a starting point for the consultation process by identifying tribal leaders and NAGPRA contacts. This database can be accessed online at the following web address http://home.nps.gov/nacd/

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 312 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVY
ADDRESS: UNKNOWN
SEAL BEACH CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 6/2/97
ID1: 547992
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 6/2/1997 **TIME OF SPILL:** 1050

PRODUCT RELEASED (1): NAPALM
QUANTITY (1): 20
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: C/U BY RP
RELEASE DETECTION: METAL FATIGUE OF A CARNISTER CAUSED LEAKAGE
MISC. NOTES: NRC 389862 Previous Case : 97-0310

DISCHARGER INFORMATION

DISCHARGER ID: 547992
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: US NAVY
ADDRESS: WEAPONS
SELL BEACH CA 90740-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 342 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-7 - SWMU-
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-7 - SWMU-
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 01/08/07
ID1: DOD100355800
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 7*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *2003-07-31 00:00:00*
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

TRIBALLAND

SEARCH ID: 349 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92683
ORANGE
CONTACT:
SOURCE: BIA

REV: 01/15/08
ID1: BIA-92683
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

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Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 339 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-1
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-1
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100352200
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 17*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: ***

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

TRIBALLAND

SEARCH ID: 347 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92647
ORANGE
CONTACT:
SOURCE: BIA

REV: 01/15/08
ID1: BIA-92647
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

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TRIBALLAND

SEARCH ID: 346 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 90740
ORANGE
CONTACT:
SOURCE: BIA

REV: 01/15/08
ID1: BIA-90740
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

The Native American Consultation Database (NACD) is a tool for identifying consultation contacts for Indian tribes, Alaska Native villages and corporations, and Native Hawaiian organizations. The database is not a comprehensive source of information, but it does provide a starting point for the consultation process by identifying tribal leaders and NAGPRA contacts. This database can be accessed online at the following web address http://home.nps.gov/nacd/

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 340 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-8
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-5 - IRP-8
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 01/08/07
ID1: DOD100350700
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 19*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1999-10-25 00:00:00*
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

LUST

SEARCH ID: 345 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH, IR-6 EXPLOSIV
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH, IR-6 EXPLOSIV
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 01/08/07
ID1: DOD100350500
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 21*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *2005-11-17 00:00:00*
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion): *EQUAL TO*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 344 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH, IR-5 LANDFILL
ADDRESS: KITTS HIGHWAY
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 01/08/07
ID1: DOD100379100
ID2:
STATUS: POST REMEDIAL ACTION MONITORIN
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 1*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE: *OTHER, SOIL*
SUBSTANCE LEAKED: *7440473, MTB*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *POST REMEDIAL ACTION MONITORING*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *TC*
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *2001-09-01 00:00:00*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *2003-11-14 00:00:00*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1965-01-02 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *2004-09-27 00:00:00*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *EQUAL TO 870*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *7*
MTBE FUEL: *0*
MTBE TESTED: *YES*
MTBE CLASS: ***

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 341 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH - OU-7 - SWMU-
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH - OU-7 - SWMU-
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100355900
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 6*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *800 SEAL BEACH BLVD.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 343 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVAL WEAPONS STATION SEAL BEACH, IR-2 EVAPORAT
ADDRESS: US NAVAL WEAPONS STATION SEAL BEACH, IR-2 EVAPORAT
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE:

REV: 01/08/07
ID1: DOD100378900
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136 -- 3*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *1455 FRAZEE ROAD*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 350 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SMITH FAB
ADDRESS: 14422 ASTRONAUTICS LN
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000317971
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 321 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: UNOCAL
ADDRESS: SERVICE ATION 6502 EDINGER ST
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE: EPA

REV: 2/20/90 0:
ID1: 160904
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 2/20/1990 **TIME OF SPILL:** 1130

PRODUCT RELEASED (1): GASOLINE: AUTOMOTIVE (4.23G PB/G
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	YES
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: SUBSOIL

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: EXCAVATING CONTAMINATED SOIL
RELEASE DETECTION: CORROSION HOLES IN STORAGE TANKS. THERE ARE TWO UNDERGROUND TANKS AT THE SITE THAT ARE LEAKING.
MISC. NOTES: WILL CALL OES

DISCHARGER INFORMATION

DISCHARGER ID: 160904
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: UNOCAL
ADDRESS: 17700 CASTLETON ST. SUITE 500
CITY OF INDUSTRY CA 91748

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

HWMANIFEST

SEARCH ID: 351 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: TSW ALLOY WHEELS
ADDRESS: 14462 ASTRONAUTICS LN
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/19/10
ID1: CAL000304088
ID2:
STATUS: ACTIVE
PHONE:

DETAILS NOT AVAILABLE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

RCRAGN

SEARCH ID: 307 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: NAVAL WEAPONS STATION SEAL BEACH
ADDRESS: SEAL BEACH BLVD
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: EPA

REV: 12/11/09
ID1: CA0170024491
ID2:
STATUS: LGN
PHONE:

CT MANIFEST INFORMATION

MANIFEST ID	SHIPPED	TSD ID	TRANS ID	QTY	MATERIAL
CTF0842726	10/06/1999	CTD981205271	39515 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CTF0842725	10/25/1999	CTD981205271	39600 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CTF0842727	10/26/1999	CTD981205271	36090 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CTF0547154	10/26/1999	CTD981205271	36890 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CTF0547155	10/29/1999	CTD981205271	41540 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CTF0547156	10/29/1999	CTD981205271	38330 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CA98057543	12/01/1999	CAD028409019	CAR000008367	0090 P	ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CA99101002	12/14/1999	CAD088504881	CAD931024038	0700 P	ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID
CA98822338	12/16/1999	CAD050806850	SCD987574647	1150 P	ENV. HAZARDOUS SUBSTANCE LIQUID NOS
CTF0842748	01/10/2000	CTD981205271	4870 P		ENVIRONMENTALLY HAZ. SUBSTANCES,SOLID

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 308 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: NAVAL WEAPONS STATION / ON HE RD. NEAR 11TH STREET
ADDRESS: UNKNOWN
SEAL BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/06
ID1: NRC-810310
ID2:
STATUS: MOBILE
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 9/5/2006 9:56:58 AM **DATE COMPLETE:** 9/5/2006 10:17:14 AM
CALL TAKER: **CALL TYPE:** INC

RESPONSIBLE PARTY:
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: GENERAL PETROLEUM
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS:
CA

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: CALLER STATES THAT 20 GALLONS OF DIESEL DISCHARGED FROM A TANKER TRUCK ONTO ROADWAY, DUE TO A TRANSPORT ACCIDENT AS THE TRUCK MAY HAVE HIT THE AREA NEAR A RAILROAD CROSSING.

INCIDENT TYPE: MOBILE **INCIDENT CAUSE:** TRANSPORT ACCIDENT
INCIDENT DATE: 9/5/2006 6:00:00 AM **INCIDENT DATE DESC:** OCCURRED
DISTANCE FROM CITY: **DISTANCE UNITS:**
DIRECTION FROM CITY: **LOCATION SECTION:**
LOCATION TOWNSHIP: **LOCATION RANGE:**

AIRCRAFT TYPE: **AIRCRAFT MODEL:**
AIRCRAFT ID: **AIRCRAFT FUEL CAPACITY:**
AIRCRAFT FUEL CAPACITY UNITS: **AIRCRAFT FUEL ON BOARD:**
AIRCRAFT FUEL ON BOARD UNITS: **AIRCRAFT SPOT NUMBER:**
AIRCRAFT HANGER: **AIRCRAFT RUNWAY NUM:**
ROAD MILE MARKER: **BUILDING ID:**
TYPE OF FIXED OBJECT: **POWER GEN FACILITY:** UNKNOWN
GENERATING CAPACITY: **TYPE OF FUEL:**
NPDES: **NPDES COMPLIANCE:** UNKNOWN
PIPELINE TYPE: **DOT REGULATED:** UNKNOWN
PIPELINE ABOVE GROUND: ABOVE **EXPOSED UNDERWATER:** NO
PIPELINE COVERED: UNKNOWN **GRADE CROSSING:** NO
LOCATION SUBDIVISION: **RAILROAD MILEPOST:**
TYPE VEHICLE INVOLVED: **CROSSING DEVICE TYPE:**
DEVICE OPERATIONAL: YES

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 308 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME:	NAVAL WEAPONS STATION / ON HE RD. NEAR 11TH STREET	**REV:**	12/31/06
ADDRESS:	UNKNOWN	**ID1:**	NRC-810310
	SEAL BEACH CA	**ID2:**	
	ORANGE	**STATUS:**	MOBILE
CONTACT:		**PHONE:**	
SOURCE:	NRC		

DOT CROSSING NUMBER:		**BRAKE FAILURE:**	NO
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	UNKNOWN
TANK REGULATED:	UNKNOWN	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	NO	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	UNKNOWN
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	

FIRE INVOLVED:	NO	**FIRE EXTINGUISHED:**	UNKNOWN
ANY EVACUATIONS:	NO	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	YES	**NUMBER INJURED:**	1
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	NO
NUMBER FATALITIES:		**ANY DAMAGES:**	NO
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	NO
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	NO	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	NO
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	NO

TRACK CLOSED:	NO	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	PAVEMENT
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	UNKNOWN
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	OC EMERGENCY DISPATCH, OC FD
ST AGENCY RPT NUM:	06-5284	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	CLEAR	**AIR TEMPERATURE:**	70
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	UNKNOWN	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

- Continued on next page -

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 308 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: NAVAL WEAPONS STATION / ON HE RD. NEAR 11TH STREET
ADDRESS: UNKNOWN
SEAL BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 12/31/06
ID1: NRC-810310
ID2:
STATUS: MOBILE
PHONE:

DESC OF REMEDIAL ACTION: HALTED ALL ACTIVITIES WITH MUNITIONS. WAITING FOR AN EMPTY TANKER TRUCK TO COME AND PUMP OVERTURNED TRUCK DRY. TOWING COMPANY WILL FLIP TRUCK UPRIGHT.

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	NO	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	CA-OES
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: CALLER WILL NOTIFY THE NAVAL ON-SCENE COORDINATOR.

MATERIAL INFORMATION

CHRIS CODE:	ODS	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: OIL: DIESEL
AMOUNT OF MATERIAL: 20 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

VEHICLE NUMBER:	UNKNOWN	**TRAILER NUMBER:**	UNKNOWN
VEHICLE FUEL CAPACITY:	UNKNOWN	**CARGO CAPACITY:**	0 UNKNOWN AMOUNT
AMOUNT OF CARGO ON BOARD:		**HAZMAT CARRIER:**	U
CARRIER LICENSED:	U	**NONCOMPLIANCE WITH HAZMAT:**	U
MOBILE TYPE:	TANKER TRUCK	**VEHICLE YEAR:**	
VEHICLE MAKE:		**VEHICLE MODEL:**	

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 309 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVY
ADDRESS: UNKNOWN
SEAL BEACH CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 3/8/94
ID1: 365483
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 3/8/1994 **TIME OF SPILL:** 0700

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 50
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEANUP BY US NAVY
RELEASE DETECTION: MILITARY FACILITY DISCOVERED DURING TANK EXVACATION
MISC. NOTES: CALLER HAD NO OTHER INFORMATION/ADVISED CALLER TO NOTIFY THE NV DEQ

DISCHARGER INFORMATION

DISCHARGER ID: 365483
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: US NAVY
ADDRESS: NAVAL WEAPON STATION
SEAL BEACH CA 90740-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 310 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVY
ADDRESS: SEAL BEACH NAVAL WEAPONS STATION
LONG BEACH CA 90740
LOS ANGELES
CONTACT:
SOURCE: EPA

REV: 8/18/94
ID1: 400839
ID2:
STATUS: MARINE VESSEL (EPA REGIONS)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 8/18/1994 **TIME OF SPILL:** 0800

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: ANAHEIM BAY

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: C/U US NAVY
RELEASE DETECTION: USS ORVIL RAY DURING REFUELING
MISC. NOTES: TOXICS

DISCHARGER INFORMATION

DISCHARGER ID: 400839
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: US NAVY
ADDRESS: SEAL BEACH NAVAL WEAPONS STAT.
SEAL BEACH CA 90740-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 311 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVY
ADDRESS: UNKNOWN
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: EPA

REV: 4/22/1994
ID1: 371699
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 4/22/1994 **TIME OF SPILL:** 0945

PRODUCT RELEASED (1): FUEL and AFFF
QUANTITY (1): 2
UNITS (1):

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP**

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 313 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: US NAVY (U.S.S. LEWIS PULLER)
ADDRESS: UNKNOWN
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: EPA

REV: 3/4/93
ID1: 309445
ID2:
STATUS: MARINE VESSEL (EPA REGIONS)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 3/4/1993 **TIME OF SPILL:** 1000

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: BAY AT SEAL BEACH

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CLEANUP BY NAVY
RELEASE DETECTION: VESSEL= U.S.S. LEWIS PULLER FUEL VENT OVERFLOW
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 309445
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: US NAVY (U.S.S. LEWIS PULLER)
ADDRESS: NWS-SEAL BEACH NAVAL STATION
SEAL BEACH CA 90740-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 315 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: USN - NAVORD CENTER
ADDRESS: NAVAL ORDINANCE CENTER FALLBROOK DETACHMENT
FALLBROOK CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 7/15/96
ID1: 500166
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 7/15/1996 **TIME OF SPILL:** 0650

PRODUCT RELEASED (1): NAPALM
QUANTITY (1): 35
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: SOIL

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: THE MATERIAL HAS BEEN CLEANED UP AND CONTAINERIZED
RELEASE DETECTION: 80 GALLON NAPALM CANISTER / THE CANISTER LEAKED DUE TO METAL FATIGUE
MISC. NOTES: CALLER HAD NO OTHER INFORMATION

DISCHARGER INFORMATION

DISCHARGER ID: 500166 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: USN - NAVORD CENTER
ADDRESS: 800 SEAL BEACH BLVD FALLBROOK DETACHMENT
SEAL BEACH CA 90740-5000

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 316 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: USN - US NAVY
ADDRESS: NAVAL WEAPONS STATION FALLBROOK DETATCHMENT 700 AM
FALLBROOK CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 07-07-98
ID1: 560649
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: NAPALM **QUANT:** 10 GALLONS

LOCATION: NAVAL WEAPONS STATION FALLBROOK DETATCHMENT 700 AMMUNITION RD
CITY: SEAL BEACH CA 90740 **REPORTED:** 12/01/97

SOURCE: UNKNOWN **MEDIUM:** LAND
NAPALM CANISTER / CANISTER FATIGUE CAUSED RELEASE
CAUSE: UNKNOWN

ACT: REMOVED CONTAMINATED SOIL
BY:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 317 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: USN-NAVAL WEAPONS STA
ADDRESS: UNKNOWN
SEAL BEACH CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 4/25/94
ID1: 376180
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 4/25/1994 **TIME OF SPILL:** 0000

PRODUCT RELEASED (1): FLAMMABLE LIQUID
QUANTITY (1): 200
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: YES

ACTIONS TAKEN: SOIL IS BEING EXCAVATED AND WILL BE DISPOSED OF
RELEASE DETECTION: UNKNOWN/WHILE CONTRACTORS WERE EXCAVATING SOIL THEY DISCOVERED THAT SOME AREAS CONTAINED LEAD LEVELS OF 1509 MG PER KG.
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 376180
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: USN-NAVAL WEAPONS STA
ADDRESS: CODE 099
SEAL BEACH CA 90740-5000

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 318 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME:
ADDRESS: NAVAL WEAPONS STATION WHARF SEAL BEACH BLVD
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 130140
ID2:
STATUS: UNKNOWN
PHONE:

DETAILS NOT AVAILABLE

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 314 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: USN - NAVORD CENTER
ADDRESS: FALLBROOK DETACHMENT STORAGE SITE 1 USN NAVORDCEN
FALLBROOK CA 90740
Orange
CONTACT:
SOURCE: EPA

REV: 2/14/96
ID1: 479598
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 2/14/1996 **TIME OF SPILL:** 1130

PRODUCT RELEASED (1): NAPALM (GASOLINE, BENZENE AND PO
QUANTITY (1): 15
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: SOIL

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CURRENTLY CONTAINERIZING IT - SCOOPED UP HARDENED MATERIAL AND PLACED IN DRUMS
RELEASE DETECTION: NAPALM CANNISTER - METAL FATIGUE - LEAKED THRU SEAMS OF CANNISTER
MISC. NOTES: SOIL REMDIATED ALSO WILL NOTIFY: CA OES

DISCHARGER INFORMATION

DISCHARGER ID: 479598 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: FEDERAL GOVERNMENT
NAME OF DISCHARGER: USN - NAVORD CENTER
ADDRESS: 800 SEAL BEACH BLVD FALLBROOK DETACHMENT
SEAL BEACH CA 90740-5000

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 320 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SHELL CALIF PRODUCTION
ADDRESS: SOUTH BOLSA LEASE
HUNTINGTON BEACH CA 92647
Orange
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 131879
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

LUST

SEARCH ID: 333 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SEAL BEACH NAVAL WEAPONS STATION
ADDRESS: SEAL BEACH NAVAL WEAPONS STATION
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA SWRCB

REV: 01/12/06
ID1: T0605966796
ID2:
STATUS: NOT REPORTED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *400136*
RESPONSIBLE PARTY: *SI LE*
ADDRESS OF RESPONSIBLE PARTY: *1220 PACIFIC HIGHWAY*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER:
CASE TYPE:
SUBSTANCE LEAKED:
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS:
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *NONE TAKEN*
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported):

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 322 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: UNOCAL
ADDRESS: SERVICE ATION 6502 EDINGER ST
HUNTINGTON BEACH CA 92647
ORANGE
CONTACT:
SOURCE: EPA

REV: 2/20/90
ID1: 465290
ID2:
STATUS: UNDERGROUND STORAGE TANK
PHONE:

SPILL INFORMATION

DATE OF SPILL: 2/20/1990 **TIME OF SPILL:** 1130

PRODUCT RELEASED (1): GASOLINE: AUTOMOTIVE (4.23G PB/G
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	YES
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: SUBSOIL

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: EXCAVATING CONTAMINATED SOIL
RELEASE DETECTION: 2 UNDERGROUND TANKS AT SERVICE STATION CORROSION HOLES IN STORAGE TANKS.
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 465290
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: UNOCAL
ADDRESS: 17700 CASTLETON ST. SUITE 500
CITY OF INDUSTRY CA 91748-

DUN and BRADSTREET :

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 323 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SHELL (W. WILDER)
ADDRESS: S. BOLSA LEASE/PACIFIC COAST. HWY X 23RD
HUNTINGTON BEACH CA 92648
ORANGE
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 22628
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

ERNS

SEARCH ID: 324 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SIGNAL LANDMARK PROPERTIES
ADDRESS: WARNER + BOLSA CHICA BLVDS
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 01-04-01
ID1: 12554
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

ERNS

SEARCH ID: 325 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: UNKNOWN
ADDRESS: CORNER OF BOLSA CHICA AND HEIL
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: EPA

REV: 11/27/90 0
ID1: 188342
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION

DATE OF SPILL: 11/27/1990 **TIME OF SPILL:** 1200

PRODUCT RELEASED (1): GASOLINE AND OIL
QUANTITY (1): 10
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: FD USED ABSORBANTS and BAGGED MATERIAL. TAT ISSUED CAP
RELEASE DETECTION: MATERIAL POURED INTO DUMPSTER BY A PERSON, WHO WAS ARRESTING.
MISC. NOTES: * REFERRED: CROSBY and OVERTON (CandO)

DISCHARGER INFORMATION

DISCHARGER ID: 188342 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 326 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: NAVAL WEAPONS STATION SEAL BEACH
ADDRESS: 800 SEAL BEACH BLVD. CODE 045
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/08/10
ID1: CAL80001234
ID2: CORRECTIVE ACTION
STATUS: ACTIVE
PHONE:

GENERAL SITE INFORMATION

Site Type:	*Corrective Action*
Status:	*Active*
Status Date:	*2008-01-01 00:00:00*
NPL Site:	*NO*
Funding:	
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*MBR*
Project Manager:	
Supervisor:	** Unknown*
Branch:	*Cypress*
Acres:	*0*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*NONE SPECIFIED*
Potential Contaminants:	*NONE SPECIFIED*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*NONE SPECIFIED*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

80001234

CA0170024491

400136

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***Sites With No Operable Unit***
Sub- Area Name:	***ENTIRE FACILITY***
Document Type:	***Consent Agreement***
Completion Date:	***1991-09-24 00:00:00***
Comments:	

Area Name:	***Sites With No Operable Unit***
Sub- Area Name:	***ENTIRE FACILITY***
Document Type:	***Interim Measures Questionnaire***
Completion Date:	***1993-04-08 00:00:00***
Comments:	

Area Name:	***Sites With No Operable Unit***
Sub- Area Name:	***OPERABLE UNIT 5***
Document Type:	***Interim Measures Workplan***
Completion Date:	***1991-09-24 00:00:00***
Comments:	

Area Name: ***Sites With No Operable Unit***

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

STATE

SEARCH ID: 326 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: NAVAL WEAPONS STATION SEAL BEACH
ADDRESS: 800 SEAL BEACH BLVD. CODE 045
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA DTSC

REV: 02/08/10
ID1: CAL80001234
ID2: CORRECTIVE ACTION
STATUS: ACTIVE
PHONE:

Sub- Area Name: ***ENTIRE FACILITY***
Document Type: ***RCRA Facility Assessment Report***
Completion Date: ***1989-03-30 00:00:00***
Comments:

Area Name: ***Sites With No Operable Unit***
Sub- Area Name: ***ENTIRE FACILITY***
Document Type: ***Preliminary Assessment Report***
Completion Date: ***1990-06-14 00:00:00***
Comments:

Area Name: ***Sites With No Operable Unit***
Sub- Area Name: ***ENTIRE FACILITY***
Document Type: ***Preliminary Assessment Report***
Completion Date: ***1987-06-01 00:00:00***
Comments:

Area Name: ***Sites With No Operable Unit***
Sub- Area Name: ***OPERABLE UNIT 1***
Document Type: ***RFI Workplan***
Completion Date: ***1993-08-03 00:00:00***
Comments:

Area Name: ***Sites With No Operable Unit***
Sub- Area Name: ***OPERABLE UNIT 1***
Document Type: ***Corrective Measures Study Workplan***
Completion Date: ***1993-08-03 00:00:00***
Comments:

Area Name: ***Sites With No Operable Unit***
Sub- Area Name: ***OPERABLE UNIT 5***
Document Type: ***Interim Measures Implementation Report***
Completion Date: ***1998-05-01 00:00:00***
Comments:

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

SWL

SEARCH ID: 327 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: SEAL BEACH NAVAL WEAPONS STATION SITE 7
ADDRESS: PERIMETER ROAD AND A RAIL SPUR 827/A/B5
SEAL BEACH CA 90740
ORANGE
CONTACT:
SOURCE: CA IWMB

REV: 09/29/10
ID1: SWIS30-CR-0162
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

Operator: *U S Dept. of the Navy*
Operator Address: *800 Seal beach Blvd. Seal Beach CA 90740-5000*
Permit Date:
Permit Status:
Land Use Name: *Wetlands,Open Space - Nonirrigated,Military*
GIS Source for LAT and LONG: *External*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Pre-regulations*
Program Type
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *None*

SITE OWNER INFORMATION:

Owner: *U S Dept. of the Navy*
Owner Phone: *5626267897*
Owner Address: *800 Seal beach Blvd.*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SWL

SEARCH ID: 328 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BOUCHER SITE/BOLSA CHICA LF
ADDRESS: 16600 BLOCK OF BOLSA CHICA AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE:

REV: 07/07/04
ID1: SWIS30-CR-0118
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Residential,Commercial*
GIS Source for LAT and LONG: *Place*

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Residential,Commercial*
GIS Source for LAT and LONG: *Place*

SITE ACTIVITY INFORMATION:

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Pre-regulations*
Closure Date: *12/31/1963*
Closure Type: *Estimated*
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *Quarterly*

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Pre-regulations*
Closure Date: *12/31/1963*
Closure Type: *Estimated*
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SWL

SEARCH ID: 328 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: BOUCHER SITE/BOLSA CHICA LF
ADDRESS: 16600 BLOCK OF BOLSA CHICA AVE
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE:

REV: 07/07/04
ID1: SWIS30-CR-0118
ID2:
STATUS: CLOSED
PHONE:

Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *Quarterly*

SITE OWNER INFORMATION:

SITE OWNER INFORMATION:

Owner: *Cabo Del Mar Homeowners Assoc.*
Owner Phone:
Owner Address: *17112 Dorado Drive*

Owner: *Cabo Del Mar Homeowners Assoc.*
Owner Phone:
Owner Address: *17112 Dorado Drive*

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

SWL

SEARCH ID: 329 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: STEVERSON BROTHERS-BOLSA CHICA
ADDRESS: SE OF BOLSA CHICA AND DUNBAR
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE:

REV: 07/03/00
ID1: WMUD8 300036NUR
ID2:
STATUS:
PHONE:

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID :
NPDES ID :
Region: *8*
Edit Date:
Last Edit:

Waste Discharger Facility: *No*

Sub Chapter 15 Facility: *No*
Solid Waste Assessment Test Site: *Yes*
Toxic Pits Cleanup Act Facility: *No*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *No*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type:
SIC 1 and SIC 2: */*

Primary Waste Type:
Secondary Waste Type:
Tons Per Day: *0*
Complexity:

LAND OWNER INFORMATION

Land Owner:
Department:
Contact and Phone: *,*
Land Owner Address: *, , CA*

AGENCY INFORMATION

Agency Name: *STEVERSON BROTHERS*
Department:
Agency Contact and Phone: *,*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *8 300036NUR-01*
WMU Status: *CEASE DISCHARGE*
WMU Size in Acres: *<10*
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *0*
Primary Liner Present: *0*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH
SEAL BEACH CA 90740

JOB: 101003-02

OTHER

SEARCH ID: 330 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: EXXON
ADDRESS: MCFADDEN AT EDWARDS
HUNTINGTON BEACH CA 92649
ORANGE
CONTACT:
SOURCE: ORANGE CO EHD

REV: 07/01/99
ID1: ORCO_GW_85UT56
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:
Contract Status:
Fund:
Substance Code: *8006619*
Description: *GASOLINE*
Lead Refferal: *N*
Enforcement:
Date Closed: *06-11-85*

UST

SEARCH ID: 331 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: WEAPONS SUPPORT FACILITY SEAL BEACH
ADDRESS: SEAL BEACH BLVD
SEAL BEACH CA
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO828
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION

According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency):

Environmental FirstSearch
Site Detail Report

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

JOB: 101003-02

SEAL BEACH CA 90740

UST

SEARCH ID: 332 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: 7-ELEVEN STORE 3361
ADDRESS: 13982 BOLSA CHICA RD
WESTMINSTER CA 92683
ORANGE
CONTACT:
SOURCE: ORANGE CO DEH

REV: 07/01/2008
ID1: TISID4ORCO1115
ID2:
STATUS: NOT REPORTED
PHONE:

ORANGE COUNTY UNDERGROUND STORAGE TANKS LIST INFORMATION

According to the Orange County Health Department s Custodian of Records Office the following information is current as of 11/04/08

Facility ID Number (where provided by agency): *FA0051004*

Target Property: NAVAL WEAPONS STATION (NAVWPNSTA) SEAL BEACH

SEAL BEACH CA 90740

JOB: 101003-02

ERNS

SEARCH ID: 319 **DIST/DIR:** NON GC **ELEVATION:** **MAP ID:**

NAME: 15291 VICTORIA
ADDRESS: 15291 VICTORIA
HUNTINGTON BEACH CA
ORANGE
CONTACT:
SOURCE: NRC

REV: 7/1/08
ID1: NRC-874813
ID2:
STATUS: FIXED
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

INCIDENT DATE: 20-JUN-2008 12:11
REPORTED DATE: **20-JUN-2008 21:31**
TYPE OF INCIDENT: FIXED
CAUSE OF INCIDENT: EQUIPMENT FAILURE
MEDIUM AFFECTED: LAND
MATERIAL NAME: OIL, MISC: TRANSFORMER
LOCATION: 15291 VICTORIA
SUSPECTED COMPANY: SOUTHERN CALIFORNIA EDISON

DESCRIPTION: A POLE MOUNTED TRANSFORMER FAILED CAUSING A SPILL ONTO THE SOIL.

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

INCIDENT DATE: 20-JUN-2008 12:11
REPORTED DATE: **20-JUN-2008 21:31**
TYPE OF INCIDENT: FIXED
CAUSE OF INCIDENT: EQUIPMENT FAILURE
MEDIUM AFFECTED: LAND
MATERIAL NAME: POLYCHLORINATED BIPHENYLS
LOCATION: 15291 VICTORIA
SUSPECTED COMPANY: SOUTHERN CALIFORNIA EDISON

DESCRIPTION: A POLE MOUNTED TRANSFORMER FAILED CAUSING A SPILL ONTO THE SOIL.

Environmental FirstSearch Descriptions

NPL: ***EPA*** NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: ***EPA*** NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
DELISTED - Deleted from the Final NPL

CERCLIS: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: ***EPA/MA DEP/CT DEP*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.
CONNECTICUT HAZARDOUS WASTE MANIFEST – Database of all shipments of hazardous waste within, into or from Connecticut. The data includes date of shipment, transporter and TSD info, and material shipped and quantity. This data is appended to the details of existing generator records.
MASSACHUSETTES HAZARDOUS WASTE GENERATOR – database of generators that are regulated under the MA DEP.
VQN-MA = generates less than 220 pounds or 27 gallons per month of hazardous waste or waste oil.
SQN-MA = generates 220 to 2,200 pounds or 27 to 270 gallons per month of waste oil.
LQG-MA = generates greater than 2,200 lbs of hazardous waste or waste oil per month.

RCRA NLR: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:
Failure to report in a timely matter.
No longer in business.
No longer in business at the listed address.
No longer generating hazardous waste materials in quantities which require reporting.

ERNS: ***EPA/NRC*** EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: ***DOI/BIA*** INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are

Federally-administered lands within a reservation which may or may not be considered part of the reservation.
BUREAU OF INDIAN AFFIARS CONTACT - Regional contact information for the Bureau of Indian Affairs offices.

State/Tribal Sites: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system called Envirostor with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), formerly known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories, two of which are found in ST. The categories listed under ST are:
1. State Response Sites.
2. School Property Evaluation Program Properties (SCH)
Please Note: Our reports list the above sites as DB Type (STATE). Other categories found in the SMBRPD are listed in our reports in the DB Types OT and VC.
Each Category contains information on properties based upon the type of work taking place at the site. State Response Sites contains only known and potential hazardous substance release sites considered as posing the greatest threat to the public. School sites included in ST will be found within the SMBRPD's School Property Evaluation Program.
CORTESE LIST-Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by Cal/EPA, Hazardous Materials Data Management Program to provide information about the location of hazardous materials release sites. Cortese List sites that fall under DTSC's guidelines for State Response sites are included in our reports in the ST category as are qualifying sites from the Annual Work Plan (formerly Bond Expenditure Plan) and the historic ASPIS databases.

State Spills 90: ***CA EPA*** SLIC REGIONS 1 - 9- The California Regional Water Quality Control Boards maintain report of sites that have records of spills, leaks, investigation, and cleanups.

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** SWIS SOLID WASTE INFORMATION SYSTEM-The California Integrated Waste Management Board maintains a database on solid waste facilities, operations, and disposal sites throughout the state of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. For more information on individual sites call the number listed in the source field..
Please Note: This database contains poor site location information for many sites in our reports; therefore, it may not be possible to locate or plot some sites in our reports.
WMUDS-The State Water Resources Control Board maintained the Waste Management Unit Database System (WMUDS). It is no longer updated. It tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Two of these programs (SWAT & TPCA) are no longer on-going regulatory programs as described below. Chapter 15 (SC15) is still an on-going regulatory program and information is updated periodically but not to the WMUDS database. The WMUDS System contains information from the following agency databases: Facility, Waste Management Unit (WMU), Waste Discharger System (WDS), SWAT, Chapter 15, TPCA, RCRA, Inspections, Violations, and Enforcement's.
Note: This database contains poor site location information for many sites in our reports; therefore, it may not be possible to locate or plot some sites in reports.
ORANGE COUNTY LANDFILLS LIST- A list maintained by the Orange County Health Department.

State/Tribal LUST: ***CA SWRCB/COUNTY*** LUSTIS- The State Water Resources Control Board maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks. Information for this database is collected from the states regional boards quarterly and integrated with this database.
SAN DIEGO COUNTY LEAKING TANKS- The San Diego County Department of Environmental Health maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks within its HE17/58 database. For more information on a specific file call the HazMat Duty Specialist at phone number listed in the source information field.

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** ABOVEGROUND STORAGE TANKS LISTING-The Above Ground Petroleum Storage Act became State Law effective January 1, 1990. In general, the law requires owners or operators of AST's with petroleum products to file a storage statement and pay a fee by July 1, 1990 and every two years thereafter, take specific action to prevent spills, and in certain instances implement a groundwater monitoring program. This law does not apply to that portion of a tank facility associated with the

production oil and regulated by the State Division of Oil and Gas of the Dept. of Conservation.
SWEEPS / FIDS STATE REGISTERED UNDEGROUND STORAGE TANKS- Until 1994 the State Water Resources Control Board maintained a database of registered underground storage tanks statewide referred to as the SWEEPS System. The SWEEPS UST information was integrated with the CAL EPA's Facility Index System database (FIDS) which is a master index of information from numerous California agency environmental databases. That was last updated in 1994. We have included the UST information from the FIDS database in our reports for historical purposes to help our clients identify where tanks may possibly have existed. For more information on specific sites from individual paper files archived at the State Water Resources Control Board call the number listed with the source information.
INDIAN LANDS UNDERGROUND STORAGE TANKS LIST- A listing of underground storage tanks currently on Indian Lands under federal jurisdiction. California Indian Land USTS are administered by US EPA Region 9.
CUPA DATABASES & SOURCES- Definition of a CUPA: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by the CAL EPA to implement six state environmental programs within the local agency's jurisdiction. These can be a county, city, or JPA (Joint Powers Authority). This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994.
A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is an agency that has not been certified by the CUPA but is the responsible local agency that would implement the six unified programs until they are certified.
Please Note: We collect and maintains information regarding Underground Storage Tanks from the majority of the CUPAS and Participating Agencies in the State of California. These agencies typically do not maintain nor release such information on a uniform or consistent schedule; therefore, currency of the data may vary. Please look at the details on a specific site with a UST record in the First Search Report to determine the actual currency date of the record as provided by the relevant agency. Numerous efforts are made on a regular basis to obtain updated records.

State/Tribal IC: ***CA EPA*** DEED-RESTRICTED SITES LISTING- The California EPA's Department of Toxic Substances Control Board maintains a list of deed-restricted sites, properties where the DTSC has placed limits or requirements on the future use of the property due to varying levels of cleanup possible, practical or necessary at the site.

State/Tribal VCP: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system called Envirostor with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), formerly known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances. The Voluntary Cleanup Program (VCP) category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program.
Please Note: Our reports list the above sites as DB Type VC.

RADON: ***NTIS*** NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Permits: ***CA EPA/COUNTY*** SAN DIEGO COUNTY HE17 PERMITS- The HE17/58 database tracks establishments issued permits and the status of their permits in relation to compliance with federal, state, and local regulations that the County oversees. It tracks if a site is a hazardous waste generator, TSD, gas station, has underground tanks, violations, or unauthorized releases. For more information on a specific file call the HazMat Duty Specialist at the phone number listed in the source information field.
SAN BERNARDINO COUNTY HAZARDOUS MATERIALS PERMITS- Handlers and Generators Permit Information Maintained by the Hazardous Materials Division.

State Other: ***CA EPA/COUNTY*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system called Envirostor with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), formerly known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories, two of which are found in ST. The categories listed under

OT are:
1. Unconfirmed Properties Referred to Another Local or State Agency (REF)
2. Properties where a No Further Action Determination has been made (NFA)
Please Note: Our reports list the above sites as DB Type (OTHER). Other categories found in the SMBRPD are listed in our reports in the DB Types ST and VC.
LA COUNTY SITE MITIGATION COMPLAINT CONTROL LOG- The County of Los Angeles Public Health Investigation Compliant Control Log.
ORANGE COUNTY INDUSTRIAL SITE CLEANUPS- List maintained by the Orange County Environmental Health Agency.
RIVERSIDE COUNTY WASTE GENERATORS-A list of facilities in Riverside County which generate hazardous waste.
SACRAMENTO COUNTY MASTER HAZMAT LIST-Master list of facilities within Sacramento County with potentially hazardous materials.
SACRAMENTO COUNTY TOXIC SITE CLEANUPS-A list of sites where unauthorized releases of potentially hazardous materials have occurred.

FI Map Coverage: ***PROPRIETARY*** FIRE INSURANCE MAP AVAILABILITY - Database of historical fire insurance map availability.

HW Manifest: ***CA EPA*** DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY-Records maintained by the CA DTSC of Hazardous Waste Manifests used to track and document the transport of hazardous waste from a generator's site to the site of its final disposition.

Environmental FirstSearch Database Sources

NPL: ***EPA*** Environmental Protection Agency

Updated quarterly

NPL DELISTED: ***EPA*** Environmental Protection Agency

Updated quarterly

CERCLIS: ***EPA*** Environmental Protection Agency

Updated quarterly

NFRAP: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA TSD: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA GEN: ***EPA/MA DEP/CT DEP*** Environmental Protection Agency, Massachusetts Department of Environmental Protection, Connecticut Department of Environmental Protection

Updated quarterly

RCRA NLR: ***EPA*** Environmental Protection Agency

Updated quarterly

ERNS: ***EPA/NRC*** Environmental Protection Agency

Updated annually

Tribal Lands: ***DOI/BIA*** United States Department of the Interior

Updated annually

State/Tribal Sites: ***CA EPA*** The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400

Updated quarterly/when available

State Spills 90: ***CA EPA*** The California State Water Resources Control Board

Updated when available

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** The California Integrated Waste Management Board
Phone:(916) 255-2331
The State Water Resources Control Board
Phone:(916) 227-4365
Orange County Health Department

Updated quarterly/when available

State/Tribal LUST: ***CA SWRCB/COUNTY*** The California State Water Resources Control Board
Phone:(916) 227-4416
San Diego County Department of Environmental Health

Updated quarterly/when available

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** The State Water Resources Control Board
Phone:(916) 227-4364
CAL EPA Department of Toxic Substances Control
Phone:(916)227-4404
US EPA Region 9 Underground Storage Tank Program
Phone: (415) 972-3372
ALAMEDA COUNTY CUPAS:
* County of Alameda Department of Environmental Health
* Cities of Berkeley, Fremont, Hayward, Livermore / Pleasanton, Newark, Oakland, San Leandro, Union
ALPINE COUNTY CUPA:
* Health Department (Only updated by agency sporadically)
AMADOR COUNTY CUPA:
* County of Amador Environmental Health Department
BUTTE COUNTY CUPA
* County of Butte Environmental Health Division (Only updated by agency biannually)
CALAVERAS COUNTY CUPA:
* County of Calaveras Environmental Health Department
COLUSA COUNTY CUPA:
* Environmental Health Dept.
CONTRA COSTA COUNTY CUPA:
* Hazardous Materials Program
DEL NORTE COUNTY CUPA:
* Department of Health and Social Services
EL DORADO COUNTY CUPAS:
* County of El Dorado Environmental Health - Solid Waste Div (Only updated by agency annually)
* County of El Dorado EMD Tahoe Division (Only updated by agency annually)
FRESNO COUNTY CUPA:
* Haz. Mat and Solid Waste Programs
GLENN COUNTY CUPA:
* Air Pollution Control District
HUMBOLDT COUNTY CUPA:
* Environmental Health Division
IMPERIAL COUNTY CUPA:
* Department of Planning and Building
INYO COUNTY CUPA:
* Environmental Health Department

KERN COUNTY CUPA:
* County of Kern Environmental Health Department
* City of Bakersfield Fire Department
KINGS COUNTY CUPA:
* Environmental Health Services
LAKE COUNTY CUPA:
* Division of Environmental Health
LASSEN COUNTY CUPA:
* Department of Agriculture
LOS ANGELES COUNTY CUPAS:
* County of Los Angeles Fire Department CUPA Data as maintained by the Los Angeles County Department of Public Works
* County of Los Angeles Environmental Programs Division
* Cities of Burbank, El Segundo, Glendale, Long Beach/Signal Hill, Los Angeles,Pasadena, Santa Fe Springs, Santa Monica, Torrance, Vernon
MADERA COUNTY CUPA:
* Environmental Health Department
MARIN COUNTY CUPA:
* County of Marin Office of Waste Management
* City of San Rafael Fire Department
MARIPOSA COUNTY CUPA:
* Health Department
MENDOCINO COUNTY CUPA:
* Environmental Health Department
MERCED COUNTY CUPA:
* Division of Environmental Health
MODOC COUNTY CUPA:
* Department of Agriculture
MONO COUNTY CUPA:
* Health Department
MONTEREY COUNTY CUPA:
* Environmental Health Division
NAPA COUNTY CUPA:
* Hazardous Materials Section
NEVADA COUNTY CUPA:
* Environmental Health Department
ORANGE COUNTY CUPAS:
* County of Orange Environmental Health Department
* Cities of Anaheim, Fullerton, Orange, Santa Ana
* County of Orange Environmental Health Department
PLACER COUNTY CUPAS:
* County of Placer Division of Environmental Health Field Office
* Tahoe City
* City of Roseville Roseville Fire Department
PLUMAS COUNTY CUPA:
* Environmental Health Department
RIVERSIDE COUNTY CUPA:
* Environmental Health Department
SACRAMENTO COUNTY CUPA:
* County Environmental Mgmt Dept, Haz. Mat. Div.
SAN BENITO COUNTY CUPA:
* City of Hollister Environmental Service Department
SAN BERNARDINO COUNTY CUPAS:
* County of San Bernardino Fire Department, Haz. Mat. Div.
* City of Hesperia Hesperia Fire Prevention Department
*City of Victorville Victorville Fire Department
SAN DIEGO COUNTY CUPA:
* The San Diego County Dept. of Environmental Health HE 17/58
SAN FRANCISCO COUNTY CUPA:
* Department of Public Health

SAN JOAQUIN COUNTY CUPA:
* Environmental Health Division
SAN LUIS OBISPO COUNTY CUPAS:
* County of San Luis Obispo Environmental Health Division
* City of San Luis Obispo City Fire Department
SAN MATEO COUNTY CUPA:
* Environmental Health Department
SANTA BARBARA COUNTY CUPA:
* County Fire Dept Protective Services Division
SANTA CLARA COUNTY CUPAS:
* County of Santa Clara Hazardous Materials Compliance Division
* Santa Clara County Central Fire Protection District (Covers Campbell, Cupertino, Los Gatos, & Morgan Hill)
* Cities of Gilroy, Milpitas, Mountain View, Palo Alto, San Jose Fire, Santa Clara, Sunnyvale
SANTA CRUZ COUNTY CUPA:
* Environmental Health Department
SHASTA COUNTY CUPA:
* Environmental Health Department
SIERRA COUNTY CUPA:
* Health Department
SISKIYOU COUNTY CUPA:
* Environmental Health Department
SONOMA COUNTY CUPAS:
* County of Sonoma Department Of Environmental Health
* Cities of Healdsburg / Sebastopol, Petaluma, Santa Rosa
STANISLAUS COUNTY CUPA:
* Department of Environmental Resources Haz. Mat. Division
SUTTER COUNTY CUPA:
* Department of Agriculture
TEHAMA COUNTY CUPA:
* Department of Environmental Health
TRINITY COUNTY CUPA:
* Department of Health
TULARE COUNTY CUPA:
* Environmental Health Department
TUOLUMNE COUNTY CUPA:
* Environmental Health
VENTURA COUNTY CUPAS:
* County of Ventura Environmental Health Division
* Cities of Oxnard, Ventura
YOLO COUNTY CUPA:
* Environmental Health Department
YUBA COUNTY CUPA:

Updated quarterly/annually/when available

State/Tribal IC: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

State/Tribal VCP: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

RADON: ***NTIS*** Environmental Protection Agency, National Technical Information Services

Updated periodically

State Permits: ***CA EPA/COUNTY*** The San Diego County Depart. Of Environmental Health
Phone:(619) 338-2211
San Bernardino County Fire Department

Updated quarterly/when available

State Other: ***CA EPA/COUNTY*** The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400
The Los Angeles County Hazardous Materials Division
Phone: (323) 890-7806
Orange County Environmental Health Agency
Phone: (714) 834-3536
Riverside County Department of Environmental Health, Hazardous Materials Management Division
Phone:(951) 358-5055
Sacramento County Environmental Management Department

Updated quarterly/when available

FI Map Coverage: ***PROPRIETARY*** Library of Congress
Catalogue of Maps Published by Sanborn Mapping and Geographic Information Service in February 1988®
ProQuest
Other internally produced datasets

Updated quarterly

HW Manifest: ***CA EPA***
CAL EPA, Department of Toxic Substances Control

Updated annually/when available

Environmental FirstSearch

Historical Aerial Photo

2002

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1994

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1983

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1977

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

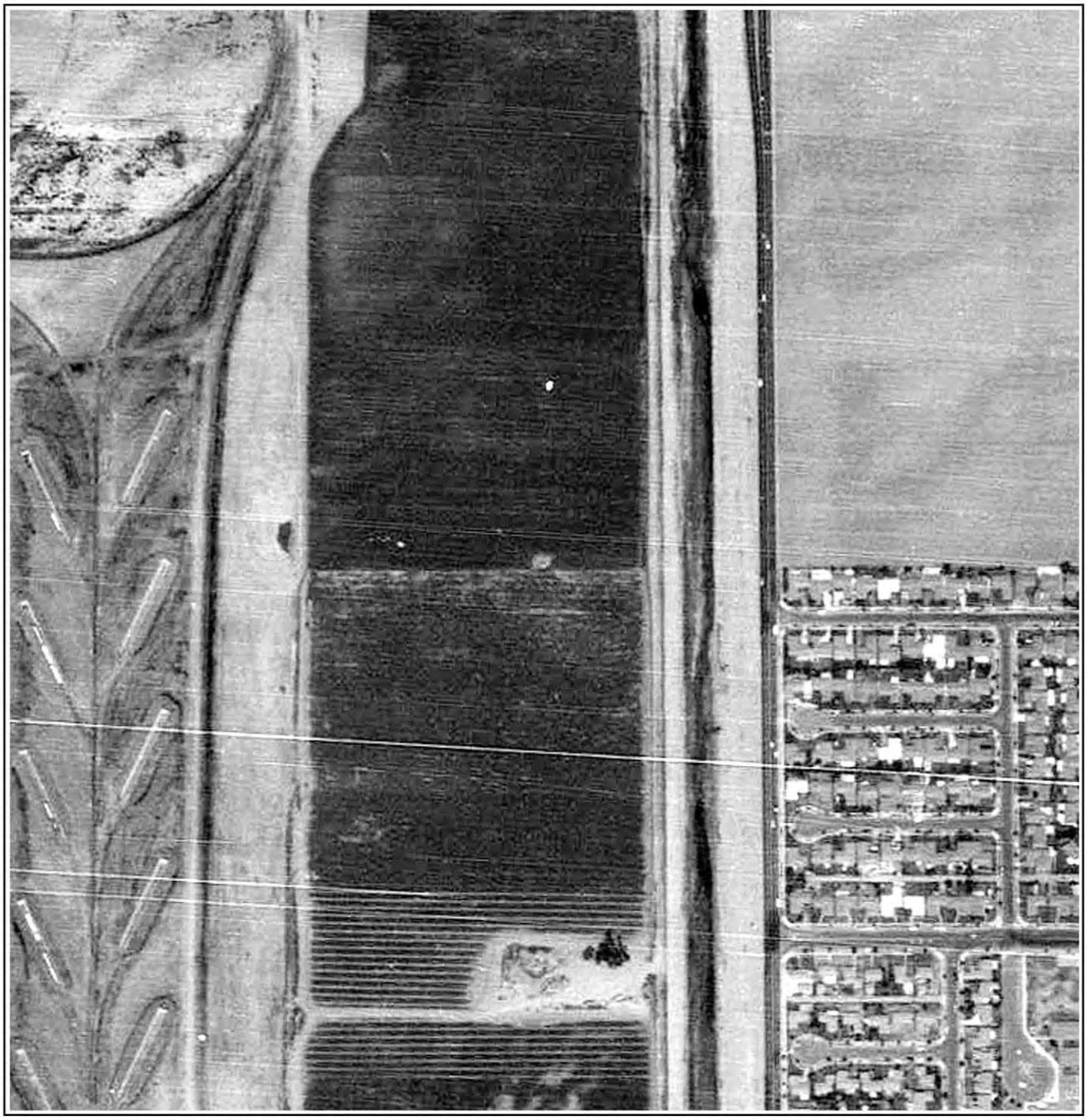
Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1968

Naval Weapons Station, Seal Beach, CA 90740



Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1960

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1956

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1947

Naval Weapons Station, Seal Beach, CA 90740

Job Number: 101003-02
Target Site: 33.739901, -118.043525

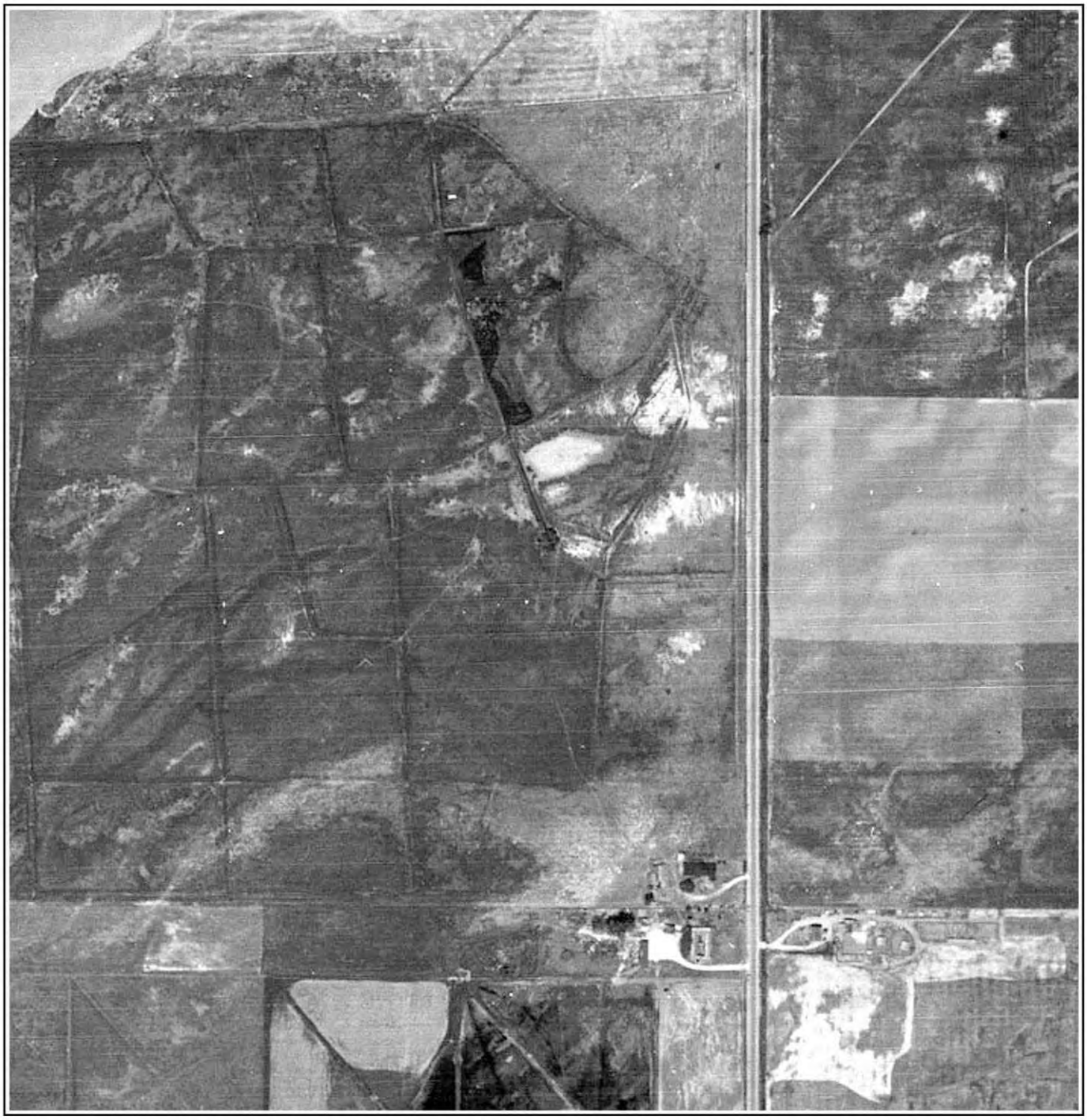
Approximate Scale: 1 in equals 375 ft

Environmental FirstSearch

Historical Aerial Photo

1938

Naval Weapons Station, Seal Beach, CA 90740



Job Number: 101003-02
Target Site: 33.739901, -118.043525

Approximate Scale: 1 in equals 375 ft

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APPENDIX D

FINAL RESPONSES TO AGENCY COMMENTS

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Final Responses to Agency Comments
Draft Work Plan and Draft Sampling and Analysis Plan, IR Site 75, Agricultural Well KAYO-SB,
Naval Weapons Station Seal Beach, Seal Beach, California

Comment Number	Section, page, table or figure	Comments by Stephen Niou, Department of Toxic Substance Control, Received 05/31/11	Response/Action Taken
Work Plan			
1	Section 1.0	Section 1.0, 2nd paragraph states that RWQCB is the lead regulatory agency of this project with DTSC as the supporting regulatory agency. If the contamination pertains to fuel products in soil and groundwater, the above statement may be correct. However, as the COPCs are chlorinated solvents and Site 75 is included in the NWSSB's CERCLA Cleanup Program, please either remove this paragraph or reverse the roles of RWQCB and DTSC.	The Work Plan text will be revised to reverse the roles. The SAP Executive Summary will be revised to read: *"The DoN is the lead agency on this project, with regulatory oversight by the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB) - Santa Ana Region."*
2	Section 1.1	The objective of this PA/SI, as stated in Section 1.1, is to find out whether or not the chlorinated solvents are originated from on base sources. Additionally, this PA/SI intends to (1) "refine the nature and extent of contamination", (2) "assess the exposure pathways to human health and the environment", and (3) "refine the CSM for Site 75 sufficient to determine if there is a need for further investigation or cleanup".	As stated by the Navy in the meeting on June 1, 2011, the purpose of this PA/SI is not to fully delineate the extent of contamination. The clause "refine the nature and extent of contamination" will be deleted from Section 1.1.
2a	Section 1.1	For the above objectives, the Navy proposes to install 7 wells: one to the west, one next to the former agricultural well (KAYO-SB), and two wells east of the base eastern property boundary. DTSC believes that one well to the west of KAYO-SB may not be sufficient to support the hypothesis that chlorinated solvents detected in groundwater at this location came only from the east of NWSSB. We recommend that another monitoring well be placed north-northwest of KAYO-SB so that the question of a potential northern or northwestern source may be eliminated.	As per the June 1, 2011, meeting, the locations of the wells will be changed and a pair of wells is now planned to the north-northwest of KAYO-SB. Additional preparation will be made to install two additional contingency wells to the east of the site, for a total of up to nine wells. The following text will be added to Work Plan Section 1.1: • *Installing pairs of monitoring wells (targeting two depths) at two other locations on NAVWPNSTA Seal Beach, planned to target two depths with the highest concentrations.* • *Installing additional monitoring wells to the east of KAYO-SB, off of NAVWPNSTA Seal Beach, planned to target the depth with the highest concentration.* • *Depths and distribution of wells will be optimized and finalized based on real-time data.* The SAP will be modified accordingly in the: • Executive Summary • Figure 5 • Worksheet 11.2

Comment Number	Section, page, table or figure	Comments by Stephen Niou, Department of Toxic Substance Control, Received 05/31/11	Response/Action Taken
			• Worksheet 11.4 • Worksheet 11.6 • Worksheet 14 • Worksheet 14.4 • Worksheet 17 • Worksheet 18
2b	Section 1.1	DTSC is not clear about the meaning of the word "refine". If the source(s) is east of the base, then the extent of contamination may not be defined by two monitoring wells adjacent to the base's eastern boundary. Please clarify the intention of the additional objective #1 listed above.	Since the purpose of a PA/SI is not to delineate the plume, the Navy's intent at this stage is to "refine" the CSM to the extent that the DQO planning team can determine whether or not the contamination originates from Navy property, and therefore whether the Navy is the responsible party. The Navy proposes that this decision question may be answered without fully delineating the extent of contamination.
2c	Section 1.1	The six existing contamination sites east of NWSSB each has its own unique signatures of contamination; the proposed one-time groundwater sampling may not be able to fully characterize the nature of contamination in groundwater in the proximity of KAYO-SB. DTSC recommends that the clause of "refine the nature and extent of contamination" be modified according to the limitations of the PA/SI.	Comment noted. The clause *"refine the nature and local extent of contamination"* will be deleted since this is not the goal of a PA/SI.
2d	Section 1.1	As refining CSM is one of the objectives of this PA/SI, it is desirable to construct models of geology/hydrogeology and chemical distribution in the vicinity of KAYO-SB especially to the east of this well in case contamination did come from east of NWSSB. Please explain how these models in the vicinity of KAYO-SB may be "refined."	The word "refine" will be replaced with the word "update", and the following text will be added to the scope of work bullet list: • *Presenting the updated CSM graphically using, at a minimum, maps and cross sections or fence diagrams showing contaminant concentrations and geologic data and interpretations.*
2e	Section 3.2	Section 3.2 discusses potential migration pathways. DTSC believes that while KAYO-SB was operating, the migration pathways may be different from today (no groundwater extraction at KAYO-SB). While the Navy develops potential migration pathways, please consider these two scenarios.	Comment noted. The following text will be added to the end of Section 3.2: "*Additionally, migration pathways may be different today than when groundwater was being extracted at KAYO-SB."*
3	Section 2.4	Given the objective of this PA/SI is to determine whether or not contamination at KAYO-SB comes from on-base sources and there are more than one potential source east of the base, it is unclear why considerable discussion is dedicated to the Boeing site in Section 2.4. Please balance the discussion in this section.	In addition to the Boeing site, five industrial sites that could potentially be the source of contamination at KAYO-SB were also presented in Section 2.4. The following text will be added to the beginning of the extensive paragraph describing the geology at the Boeing site*: "Records from the Boeing environmental work show the deepest subsurface investigation in the vicinity as well as the most*

Comment Number	Section, page, table or figure	Comments by Stephen Niou, Department of Toxic Substance Control, Received 05/31/11	Response/Action Taken
			detailed data regarding geology, which is expected to be similar to the geology that will be encountered near KAYO-SB."
4		In order to establish effective CSM for potential migration pathways, DTSC recommends three fundamental cross sections connecting well KAYO-SB with potential offsite source areas (Boeing, Centrilift Hughes and Weisner Lock) be constructed with all available soil and chemical analytical data including deeper aquifers. These cross sections may provide valuable stratified lithologic indications of potential pathways if offsite sources do exist. The geological/hydrogeological model may be presented as fence diagrams (or similar forms) which may reveal certain horizontal and vertical communications between soil layers and help locating mass flux zones for future investigation purposes.	Comment noted. It appears that only Boeing has collected data in the deeper aquifers. As noted in the response to comment 2e, cross-sections or fence diagrams will be prepared to show the CSM at the conclusion of the PA/SI.
5		It seems that this work plan provides limited data of soil and groundwater sampling at a monitoring well MW-59B (east of NWSSB). DTSC recommends that these data be collected for MW-59B (if available) and be utilized to assist the construction of the CSM.	According to Haley & Aldrich's report (2009), a December 19, 2008, Hydropunch sample from 90 feet deep was non-detect for chlorinated VOCs (i.e. no chlorinated VOCs above method reporting limit). MW-59B was installed on Jan 1, 2009, and screened in the Beta Aquifer from 240-250 feet below ground surface. Groundwater at this depth in this area flows towards the northeast. The well was sampled for three consecutive quarters in 2009. The maximum chlorinated VOC results reported were 1.5J µg/L (estimated) TCE and 1.3J µg/L (estimated) 1,1-DCE. At the conclusion of this PA/SI investigation, this information may be incorporated in the CSM for the PA/SI report, if relevant.
6		DTSC recommends that the plume maps depicting lateral and vertical distribution of contaminations at Boeing, Centrilift Hughes and Weisner Lock be made available for better understanding of potential pathways from those sites to KAYO-SB. These plume maps may help in determining well locations and screen depths of the proposed monitoring wells.	As discussed at the meeting on June 1, 2011, the sites other than Boeing appear to have only shallow wells and documented plumes that appear to be shallow and relatively limited to near the source areas. Based on results from the field investigation, additional plume maps including offsite sources may be prepared for the PA/SI report.
7		DTSC believes sonic drilling creates heat from friction and may volatize VOCs in soil and groundwater so that the test results may not represent true field conditions. DTSC recommends the collection of groundwater samples by other methods such as direct push.	Sonic drilling was selected due to reported past experiences on the base in being the method to most likely reach the target depth. Direct push technology has not been able to reach the target depths, and other drilling methods would not yield the continuous soil core generated by the sonic method. The field team's experience has been that sonic drilling below the water table generally does not result in heating that would affect the VOC screening that is suggested. If

Comment Number	Section, page, table or figure	Comments by Stephen Niou, Department of Toxic Substance Control, Received 05/31/11	Response/Action Taken
			drilling conditions permit, the preferred method will be to advance the sample coring tool in front of a sonic outer casing, which would result in sampling of soil that has not been affected by the sonic vibration and associated potential heating. Additionally, the following sentence will be added to Section 14.3.2 of the SAP: *"Temperature of the soil core will be logged using a non-contact thermometer gun or equivalent."*
8		It is DTSC's understanding that groundwater gradient in the vicinity of KAYO-SB is naturally flat when groundwater extraction/injection activities are absent. We recommend that the Navy collect nearby groundwater historical extraction/injection data including well locations, pumping/injection rates, measured water levels (at extraction/injection and monitoring wells), and operating time. This information should be analyzed for establishing groundwater migration pattern(s).	If available, this information will be included in the PA/SI Report. As discussed at the meeting on June 1, 2011, the following edits will be made to the SAP: • The words "and up-hydrologic-gradient" will be removed from the Worksheet 11 Step 2 Decision Question • The words "and up-gradient" will be removed from Worksheet 11 Step 5, Decision Rule 1
9	Section 4.1	The proposed monitoring well next to the former KAYO-SB will be completed with a single screened interval. DTSC believes, without additional data, KAYO-SB is the only location with known contamination in its vicinity and the Navy does not know which layers or aquifers are impacted by VOCs which suggests that the path(s) from VOC sources to this well is not defined yet. We recommend that multiple groundwater samples at each permeable zone be collected at this "central" well to learn vertical extent of contamination at this location. In addition, based on the proposed analytical results, we may recommend that this monitoring well be completed with multiple screens for future investigation purposes.	As discussed at the meeting on June 1, 2011, a VOC screening log will be developed for the monitoring well in the vicinity (approximately 50 feet east) of former KAYO-SB, and a well will be installed in the borehole at the depth where contaminant screening shows the highest concentrations, instead of at the originally proposed total depth of the boring. Section 4.1 of the Work Plan and Section 11.6 of the SAP has been edited to read: *"Following logging, a 3-inch-diameter groundwater monitoring well will be installed in boring SB75-MW01 at the depth where contaminant screening shows the highest concentrations."*

Comment Number	Section, page, table or figure	Comments by John Broderick, California Regional Water Quality Control Board, Received 05/06/2011	Response/Action Taken
General Comments			
Work Plan			
1	Section 2.0, page 10	**2.4 Historical Surrounding Property Use and Operations, Wiser Lock (Facility, former), 555 McFadden St, Huntington Beach.** The release of volatile organic compounds at this site is overseen by the Regional Board under our Site Cleanup Program. The Geotracker Case No. is SL208053860 and the case status is open-remediation.	The sentence *"The Weiser site is listed as closed case T0605900970 in GeoTracker."* will be edited to read *"The Weiser site is listed as open-remediation case SL208053860 in GeoTracker."*
Sampling and Analysis Plan			
2	Section 11.0, page 42, paragraph 3	**11.6 Step 7 – Develop the Detailed Plan for Obtaining Data.** Groundwater monitoring wells are proposed to be constructed of 3-inch diameter Schedule 80 polyvinyl chloride casing. We recommend monitoring wells be constructed with a minimum of a 4-inch diameter casing.	As per the June 1, 2011, meeting, the following text has been added to the subject paragraph in Worksheet #11: *"The first well will have 3-inch diameter casing, subsequent wells will be constructed with 4-inch diameter casing if it can be done with the project budget."*

Comment Number	Section, page, table or figure	Comments by Remediation Advisory Board Member, Received 06/09/2011	Response/Action Taken
Specific Comment			
Work Plan			
1	Section 2.4	Can some regulatory standards, such as MCLs or PRGs, be posted for comparison purpose in the tables showing the historical contamination found at the site?	The requested information will be added to Table 1 and the inline tables within Section 2.4 of the Work Plan.