SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CODE 06CC.LMH
File: etswtr30Oct2003RTCTAA772.doc

M60050_003700
MCAS EL TORO
SSIC NO. 5090.3.A

Transmittal

Date: 30 October 2003

From: Lynn Marie Hornecker

To: **Rafat Abbasi**
State of California Environmental Protection Agency
Department of Toxic Substances Control (DTSC), Region 4
Site Mitigation Branch, Base Closure Unit
5796 Corporate Avenue
Cypress, CA 90630

Subj: Response to DTSC Comments
Former TAA 772
Former Marine Corps Air Station, El Toro

Transmitted as the attachment are responses to DTSC comments and supplementary information pertaining to Former TAA 772.

Please do not hesitate to contact me if you have questions pertaining to the transmittal.

Thank you very much.

Atch
Response to Comment package (Shaw October 2003)

CF:
Andy Piszkin
BRAC Environmental Coordinator

CSO El Toro

Project File

RESPONSE TO DTSC COMMENTS – Addendum to Closure Report for TAA 772
Former Marine Corps Air Station, El Toro
Marine Corps Air Station, El Toro, California, dated June 26, 2003
Shaw Environmental, Inc. Project No. 818655, Contract Task Order 0024, Document Control No. 5778

Comment No.	Section/Page Number	Comment	Response
General Comments from Rafat Abbasi, California Department of Toxic Substance Control, dated September 30, 2003			
1.		Field Duplicates. Please confirm how many field duplicate samples were collected and analyzed.	Comment acknowledged. At TAA 772 site, field duplicate samples were collected at a frequency of 1 per 10 samples per day. A field duplicate was collected on 25 March 2003 for field samples collected at both TAA 673 and TAA 772. The duplicate sample was collected at TAA 673. TAA 772 Chain of Custody lists all the samples collected on March 25, 2003. A copy of the TAA 772 chain of custody is included as Attachment 1.
2.		One of the chemical data summary tables has TAA 605 in the column header or notes when TAA 772 should be identified.	Comment acknowledged. Table 4, Hazard Index by Target Organ Endpoints, from the Addendum to Closure Report (June 2003) has been revised and included as Attachment 2.
3.		The text on page 4-3 (?) indicates that samples were analyzed for PCBs and pesticides, however, only USEPA Method 8081 is cited on page 4-3. Appendix G includes laboratory reports for USEPA Method 8081 (pesticides) that do not include PCBs (January 2001 data); PCBs were analyzed by USEPA Method 8082 (for January 2001 samples). The 1997 data shows analysis of samples by USEPA Method 8081 for both pesticides and PCB compounds. Please ensure that the text of section 4 accurately describes the test methods that were used.	Comment acknowledged. This comment pertains to original TAA 772 Closure Report published in March 2001 and was included as Appendix A. This report summarizes soil samples collected from 1997 and 2001 sampling events at TAA 772. In 1997, soil samples were collected from 18 and 36 inches but 36-inch samples were not analyzed. Therefore, in 2001, we collected 36-inch samples from four borings next to 1997 sampling locations. In 1997, soil samples were analyzed for PCBs as part of EPA Method 8081. But, in 2001, soil samples collected at 3 feet were analyzed for PCBs using EPA Method 8082. PCBs were not detected above laboratory reporting limits in both 1997 and 2001 soil sampling rounds. In March 2003, soil sampling was performed in response to DTSC comments regarding horizontal and vertical extent of PAHs near soil boring HA-02. Section 1.0, Introduction of Addendum to Closure Report TAA 772, has been revised to provide details on USEPA analytical methods. A copy of the revised Section 1.0 is included as Attachment 3.

RESPONSE TO DTSC COMMENTS – Addendum to Closure Report for TAA 772
Former Marine Corps Air Station, El Toro
Marine Corps Air Station, El Toro, California, dated June 26, 2003
Shaw Environmental, Inc. Project No. 818655, Contract Task Order 0024, Document Control No. 5778

Comment No.	Section/Page Number	Comment	Response
General Comments from Rafat Abbasi, California Department of Toxic Substance Control, dated September 30, 2003			
4.		Detection limits for pesticides relative to the PRGs. Please ensure that the detection limits were less than the PRG. If pesticides were detected above detection limits, then they should be included in the risk summary tables. Field concentrations that exceed background should be included in the risk summary tables.	Comment acknowledged. Laboratory detection limits for all the compounds were below residential PRGs. Revised Analytical Summary Tables from 2001 and 2003 sampling events (included as Attachment 4) present laboratory reporting limits and method detection limits to confirm that detection limit is below residential PRG values. All chemical compounds, including pesticide and PCB compounds detected above the laboratory detection limits, were included to calculate cancer and non-cancer risk. Residential cancer risk at TAA 772 site is still less than $1x10^{-6}$. Also, Hazard Index by Target Organ System Endpoints for potential contributors was conducted and is less than 1.0. Revised Residential Risk Screening Worksheet for Soil – TAA 772 is included as Attachment 5.
5.		Please ensure that risk assessment was performed for PCB compounds.	Comment acknowledged. Please see Attachment 5 for Revised Residential Risk Screening Worksheet for Soil – TAA 772.

Attachment 1

the group

IT Corporation
2790 Mosside Blvd.
Monroeville, PA 15146-2792
(412)372-7701

CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

A 15873

FORM 0019 REV. 9-99

IT'S LAB COORDINATOR: Lynn Jefferson	LAB COORDINATOR'S PHONE: 949-660-7537	LAB COORDINATOR'S FAX: 949-475-5433	LABORATORY SERVICE ID: 03-C131	LABORATORY CONTACT: Vic Mynt	MAIL REPORT (COMPANY NAME): Shaw E&I
PROJECT NAME: MCAS El Toro	PROJECT LOCATION: MCAS El Toro, CA	PROJECT NUMBER: 818655	LABORATORY PHONE: 310-618-8889	LABORATORY FAX: 310-618-0218	RECIPIENT NAME: Dwayne Ishida
PROJECT CONTACT: Dhananjay Rawal	PROJECT PHONE NUMBER: 949-660-7576	PROJECT FAX: 949-474-8309	LABORATORY ADDRESS: 1835 W. 205th St.	ADDRESS: 3347 Michelson Dr. Suite 200	
PROJECT ADDRESS: MCAS El Toro	CITY, STATE AND ZIP CODE: Santa Ana, CA	CLIENT: EFA West	CITY, STATE AND ZIP CODE: Torrance, CA 90501	CITY, STATE AND ZIP CODE: Irvine, CA 92612	
PROJECT MANAGER: Dhananjay Rawal	PROJECT MANAGER'S PHONE: 949-660-7576	PROJECT MANAGER'S FAX: 949-474-8309			

Item	Sample Identifier	Matrix	Date 2003	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: VOC-8260	TPH-Gas	TPH-Diesel	SVOC-8270	SVOC-8270D	Pesticide-8081	Metals-6010	Comments
1	818655-3215	W	03/25	1530	HCl 4°C	~~HNO3~~ 2	C	5DAY	X							
2	818655-3216	S		0930		7			X	X	X	X	X	X	X	
3	818655-3217			1000					X	X	X	X	X	X	X	
4	818655-3218			1015					X	X	X	X	X	X	X	
5	818655-3219			1115			D		X	X	X	X	X	X	X	
6	818655-3220			1145			C		X	X	X	X	X	X	X	
7	818655-3221			1330					X	X	X	X	X	X	X	
8	818655-3222			1415					X	X	X	X	X	X	X	
9	818655-3223	W		1515	HNO3 HCl	8			X	X	X	X		X	X	
10	818655-									PK	03/26/03					

SAMPLES COLLECTED BY: P Leeres

COURIER AND AIR BILL NUMBER: Email carrier

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
[signature] 03/26/03	[signature]	3-26-03	1500	

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - Project Data Manager

Project Information Section
For Project Personnel Only
Do Not Submit to Laboratory

Sample Point Location	Sample Type: G	C	F	QC
1) TRIP BLANK	X		X	X
2) TAA 673 SB-B @ 18"	X		X	
3) TAA 673 SB-B @ 36"	X		X	
4) TAA 673 SB-B @ 36" (DUP)	X		X	X
5) TAA 772 SB-E1 @ 18"	X		X	
6) TAA 772 SB-E1 @ 36"	X		X	
7) TAA 772 SB-E2 @ 18"	X		X	
8) TAA 772 SB-E2 @ 36"	X		X	
9) EQUIPMENT RINSATE FOR 03/25/03 SAMPLING	X		X	X
10)				

Comments

Sample Type: G - Grab, C - Composite, F - Field Sample, QC - Quality Control Sample

Attachment 2

Revised Table 4
Hazard Index By Target Organ System Endpoint
Former TAA 772

Chemical of Potential Concern	Maximum TAA 772 Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[A] (mg/kg)	Residential PRG[B] (mg/kg)	TAA 772 Maximum Ratio[C]	Target Organ[C] Hazard Index[D]						
					Skin	Iron Overload[E]	Cardio-vascular system	Central Nervous System	Longevity	Gastro-intestinal tract	Reproductive System
METAL CONTRIBUTORS											
Aluminum	19400	14800	7.6E+04	2.55E-01				2.6E-01			
Antimony	22	3.1	3.10E+01	7.10E-01			7.10E-01		7.10E-01	7.10E-01	
Arsenic	3.64	6.9	2.20E+01	1.65E-01	1.65E-01		1.65E-01	1.65E-01			
Iron	18600	18400	2.30E+04	8.09E-01		8.09E-01					
Manganese	303	291.0	1.80E+03	1.68E-01				1.68E-01			1.68E-01
Thallium	2.3	0.42	5.20E+00	4.42E-01	4.42E-01			4.42E-01			
Subtotal sum of ratios				2.55E+00	6.08E-01	8.09E-01	8.75E-01	1.03E+00	7.10E-01	7.10E-01	1.68E-01
			NON-CANCER HAZARD INDEX	2.5	0.61	0.81	0.88	1.03	0.71	0.71	0.17

[A] *MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996b.*

[B] *Residential soil PRGs for non-cancer from the EPA Region 9, November 1, 2002 list.*

[C] *The primary target organs were identified from toxicity profiles available on the IRIS website. Information was obtained from the Risk Assessment Information System website when information from the IRIS website was limited.*

[D] *The Ratio is determined by dividing the maximum concentration by the respective PRG.*

[E] *Klaasen, Curtis D., Watkins, John B. III, 1999, Casarett and Doull's Toxicology, The Basis Science of Poisons; 5th Edition, Companion Handbook, McGraw Hill, United States of America.*

When calculating average concentrations, U-qualified analytical results were divided by 2.

Contributors to risk were analytes that were above laboratory reporting limits.

Maximum detected values used were taken from Shaw 1997, 2001 and 2003 soil borings and JEG 1992 RFA soil borings.

COPC concentrations that contribute an HI of 0.1 or greater are used in target organ calculations.

MCAS - Marine Corps Air Station

mg/kg - milligrams per kilogram.

PRG - preliminary remediation goal

Attachment 3

1.0 Introduction

This Closure Report summarizes the sampling activities performed at the Temporary Accumulation Area (TAA) 772 Site at the Marine Corps Air Station (MCAS) El Toro (hereinafter referred to as the "Station"), California. Shaw Environmental, Inc. performed the work for the Southwest Division Naval Facilities Engineering Command (SWDIV) under Remedial Action Contract No. N62474-98-D-2076, Contract Task Order (CTO) 0024.

In October 1997, five soil borings were advanced to three feet below ground surface next to TAA 772 (TAA772-SB-A, TAA772-SB-B, TAA772-SB-C, TAA772-SB-D, and TAA772SB-E). All soil samples that were collected from 1.5 feet below ground surface were analyzed for total petroleum hydrocarbons (TPH) using EPA method 8015M, pesticides using EPA method 8081, polychlorinated biphenyls (PCBs) by EPA method 8081, metals by EPA method 6010, total cyanide by EPA method 9012, pH by EPA method 9045, semivolatile organic compounds (SVOCs) by EPA method 8270, and volatile organic compounds (VOCs) by EPA method 8260. All soil samples collected from 3 feet below ground surface were analyzed for VOCs by EPA method 8260. In January 2001, four additional soil borings were advanced to 3 feet below ground surface next to TAA 772 (TAA772-HA01, TAA772-HA02, TAA772-HA03, and TAA772-HA04). All soil samples were collected from 3 feet below ground surface, and were analyzed for TPH by CA LUFT 8015M, pesticides by EPA method 8081, PCBs by EPA method 8082, metals by EPA method 6010, total cyanide by EPA method 9012, SVOCs by EPA method 8270, and VOCs by EPA method 8260.

In March 2001, a Closure Report, Temporary Accumulation Area 772, MCAS, El Toro, California was submitted to Department of Toxic Substances Control (DTSC) Region 4. The Closure Report presents analytical results from October 1997 and January 2001 sampling events, historical background information and information collected during previous environmental restoration program projects. A copy of the Closure Report is provided in Appendix A.

The DTSC reviewed the 2001 closure report, and requested additional sampling in the vicinity of TAA772-HA02 in a letter dated September 7, 2001. The responses to DTSC comments are provided in Appendix B.

In March 2003, Shaw Environmental, Inc. advanced two soil borings in close proximity to TAA772-HA02 located at TAA 772, and collected soil samples from 1.5 and 3 feet below ground surface. All soil samples were analyzed for TPH by CA LUFT 8015M, pesticides by EPA method 8081A, metals by EPA method 6010B, SVOCs by EPA method 8270C, and VOCs by EPA method 8260B. This Addendum to Closure Report includes an evaluation of analytical results for soil sampling activities conducted in March 2003 and includes a screening level risk

assessment for TAA 772 using analytical results from the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), October 1997, January 2001, and March 2003 sampling events.

Soil sampling activities were conducted in accordance with the Navy, Station, and DTSC-approved *Final Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station El Toro, California* and approved Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California (IT Corporation [IT], 2002).

1.1 Site Location and Background

The Station is located approximately 45 miles southeast of the city of Los Angeles in Orange County, California, 1 mile north of the intersection of Interstate 5 (Santa Ana) and Interstate 405 (San Diego) freeways. The Station covers approximately 4,738 acres. A location map for former TAA 772 is provided in Figure 1. TAA 772, a temporary, less than 90-day, Hazardous Waste Storage Area (HWSA), is located in the southeastern quadrant of the Station. Former TAA 772 is located south of former Defense Reutilization and Marketing Office (DRMO) yard number 3 (Figure 2) near the intersection of "Z" Street and El Toro Boulevard.

The Station closed on 1 July 1999 in accordance with the Base Realignment and Closure (BRAC) Act of 1993 (BRAC III). Former TAA 772 was investigated as Solid Waste Management Unit (SWMU) 225 (TAA 772) during the RFA. Former TAA 772 consists of an approximately 12-foot by 17-foot concrete pad with berm and roof.

Former TAA 772 is located within a parcel designated for future use as Open Space: Golf with Residential Overlay according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002. The Great Park Land Use Plan is provided in Appendix C.

The depth to groundwater in the vicinity of the TAA 772 site is based on available water level data collected from the nearby groundwater monitoring well 05_DGMW68. The location of this well is shown in Figure 1. Based on this data, the depth to the groundwater at TAA 772 is approximately 158 feet below ground surface (CDM, 2003).

Based on the screening level risk assessment of TAA 772, the net carcinogenic risk for a residential scenario is less than 10^{-6}. The target organ evaluation for former TAA 772 resulted in an HI for each of the target organs of less than 1.0. Therefore, former TAA 772 should be identified as "closed" in the next BRAC Business Plan update.

1.2 Regulatory Background and Cleanup Goals

The closure activities at TAA 772 were completed in accordance with the appropriate federal and state requirements. TAA 772 is characterized as "*hazardous waste accumulation areas*" according to the Code of Federal Regulations (CFR), Title 40, Part 262.34, and the California Code of Regulations (CCR), Title 22, Section 66262.34. Because hazardous wastes have been stored at the site, closure of TAA 772 is also subject to federal and state regulations for closure of less than 90 days hazardous waste management facilities (CFR 40, part 264, Subpart G; and CCR 22, Section 66264, Article 7, respectively).

The cleanup goals established for soil for TAA 772 are based on the following:

- U. S. Environmental Protection Agency (EPA) Region IX Preliminary Remediation Goals (PRGs) dated November 1, 2002 for residential land use for organic contaminants
- Background concentrations for metals contaminants (Bechtel National Inc. [Bechtel], 1996b)
- 5,000-milligrams per kilogram (mg/kg) concentration limit for TPH-purgeable
- 10,000-mg/kg concentration limit for TPH-extractable.

BODY BREAK

Attachment 4

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification				18609-3935	18609-3936	18609-3937	18609-3938
Location Code				TAA772-HA01	TAA772-HA02	TAA772-HA03	TAA772-HA04
Date Sampled				01/10/01	01/10/01	01/10/01	01/10/01
Depth (feet below ground surface)				3.0	3.0	3.0	3.0
	Unit	Background[1]	PRG Residential[2]				
CA LUFT 8015M							
TPH as Diesel	mg/kg	NE	NE	11 U	39	11 U	11 U
TPH as Gasoline	mg/kg	NE	NE	14.3 U	13.9 U	11 U	11.6 U
TPH as JP-5	mg/kg	NE	NE	11 U	11 U	11 U	11 U
EPA 8081							
4,4'-DDD	mg/kg	0.0361	2.4	.047 U {.0011}	.046 U {.001}	.046 U {.001}	.045 U {.001}
4,4'-DDE	mg/kg	0.145	1.7	.028 U	.027 U	.027 U	.027 U
4,4'-DDT	mg/kg	0.236	1.7	.041 U	.0031 J	.039 U	.038 U
Aldrin	mg/kg	NE	0.029	.025 U	.024 U	.024 U	.024 U
alpha-BHC	mg/kg	NE	0.09	.021 U	.021 U	.021 U	.02 U
alpha-Chlordane	mg/kg	0.00224	1.6	.017 U {.00023}	.0027 J B	.016 U {.00022}	.016 U {.00021}
Beta-BHC	mg/kg	NE	0.32	.037 U	.036 U	.036 U	.035 U
Delta-BHC	mg/kg	NE	NE	.012 U	.012 U	.012 U	.012 U
Dieldrin	mg/kg	0.0199	0.03	.039 U {.00081}	.038 U {.00078}	.038 U {.00078}	.037 U {.00076}
Endosulfan I	mg/kg	0.000179	370	.024 U {.00057}	.023 U {.00056}	.023 U {.00055}	.022 U {.00054}
Endosulfan II	mg/kg	0.00222	370	.027 U {.00054}	.026 U {.00052}	.026 U {.00052}	.026 U {.00051}
Endosulfan sulfate	mg/kg	0.0031	NE	.041 U {.00059}	.04 U {.00058}	.039 U {.00057}	.038 U {.00056}
Endrin	mg/kg	0.00222	18	.041 U {.00049}	.04 U {.00048}	.039 U {.00047}	.038 U {.00046}
Endrin aldehyde	mg/kg	0.00222	NE	.018 U {.00054}	.018 U {.00053}	.017 U {.00052}	.017 U {.00051}
gamma-BHC	mg/kg	NE	0.44	.023 U	.022 U	.022 U	.021 U
gamma-Chlordane	mg/kg	0.0027	1.6	.017 U {.00029}	.016 U {.00028}	.016 U {.00028}	.016 U {.00027}
Heptachlor	mg/kg	NE	0.11	.023 U	.022 U	.022 U	.021 U
Heptachlor epoxide	mg/kg	NE	0.053	.024 U	.023 U	.023 U	.022 U
Methoxychlor	mg/kg	NE	300	.064 U	.063 U	.062 U	.061 U
Toxaphene	mg/kg	NE	0.44	.79 U {.016}	.77 U {.016}	.76 U {.016}	.75 U {.016}
EPA 8082							
Aroclor-1016	mg/kg	NE	3.9	.79 U	.77 U	.76 U	.75 U
Aroclor-1221	mg/kg	NE	0.22	.79 U {.019}	.77 U {.018}	.76 U {.018}	.75 U {.018}
Aroclor-1232	mg/kg	NE	0.22	.79 U {.0078}	.77 U {.0076}	.76 U {.0076}	.75 U {.0074}
Aroclor-1242	mg/kg	NE	0.22	.79 U {.034}	.77 U {.033}	.76 U {.033}	.75 U {.032}
Aroclor-1248	mg/kg	NE	0.22	.79 U {.020}	.77 U {.019}	.76 U {.019}	.75 U {.019}

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification				18609-3935	18609-3936	18609-3937	18609-3938
Location Code				TAA772-HA01	TAA772-HA02	TAA772-HA03	TAA772-HA04
Date Sampled				01/10/01	01/10/01	01/10/01	01/10/01
Depth (feet below ground surface)				3.0	3.0	3.0	3.0
	Unit	Background[1]	PRG Residential[2]				
Aroclor-1254	mg/kg	NE	0.22	.79 U {.016}	.77 U {.016}	.76 U {.015}	.75 U {.015}
Aroclor-1260	mg/kg	NE	0.22	.79 U {.0082}	.77 U {.008}	.76 U {.0079}	.75 U {.0078}
EPA 8260							
1,1,1-Trichloroethane	µg/kg	NE	1200000	5.5 U	7.7 U	6.5 U	5.9 U
1,1,2,2-Tetrachloroethane	µg/kg	NE	410	5.5 U	7.7 U	6.5 U	5.9 U
1,1,2-Trichloroethane	µg/kg	NE	730	5.5 U	7.7 U	6.5 U	5.9 U
1,1-Dichloroethane	µg/kg	NE	510000 <2800>	5.5 U	7.7 U	6.5 U	5.9 U
1,1-Dichloroethene	µg/kg	NE	120000	5.5 U	7.7 U	6.5 U	5.9 U
1,2-Dichloroethane	µg/kg	NE	280	5.5 U	7.7 U	6.5 U	5.9 U
1,2-Dichloropropane	µg/kg	NE	340	5.5 U	7.7 U	6.5 U	5.9 U
2-Butanone (MEK)	µg/kg	NE	7300000	55 U	77 U	65 U	59 U
2-Chloroethyl vinyl ether	µg/kg	NE	NE	55 U	77 U	65 U	59 U
2-Hexanone	µg/kg	NE	NE	55 U	77 U	65 U	59 U
4-Methyl-2-pentanone (MIBK)	µg/kg	NE	790000	55 U	77 U	65 U	59 U
Acetone	µg/kg	NE	1600000	20 J	20 J	18 J	18 J
Benzene	µg/kg	NE	600	5.5 U	7.7 U	6.5 U	5.9 U
Bromodichloromethane	µg/kg	NE	820	5.5 U	7.7 U	6.5 U	5.9 U
Bromoform	µg/kg	NE	62000	5.5 U	7.7 U	6.5 U	5.9 U
Bromomethane	µg/kg	NE	3900	5.5 U	7.7 U	6.5 U	5.9 U
Carbon disulfide	µg/kg	NE	360000	11 U	15 U	13 U	12 U
Carbon tetrachloride	µg/kg	NE	250	5.5 U	7.7 U	6.5 U	5.9 U
Chlorobenzene	µg/kg	NE	150000	5.5 U	7.7 U	6.5 U	5.9 U
Chloroethane	µg/kg	NE	3000	5.5 U	7.7 U	6.5 U	5.9 U
Chloroform	µg/kg	NE	3600 <940>	5.5 U	7.7 U	6.5 U	5.9 U
Chloromethane	µg/kg	NE	1200	5.5 U	7.7 U	6.5 U	5.9 U
cis-1,2-Dichloroethene	µg/kg	NE	43000	5.5 U	7.7 U	6.5 U	5.9 U
cis-1,3-Dichloropropene	µg/kg	NE	780	5.5 U	7.7 U	6.5 U	5.9 U
Dibromochloromethane	µg/kg	NE	1100	5.5 U	7.7 U	6.5 U	5.9 U
Ethylbenzene	µg/kg	NE	8900	5.5 U	7.7 U	6.5 U	5.9 U
Methyl tert-butyl ether (MTBE)	µg/kg	NE	62000 <17000>	11 U	15 U	13 U	12 U
Methylene chloride	µg/kg	NE	9100	11 U	15 U	13 U	12 U

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification				18609-3935	18609-3936	18609-3937	18609-3938
Location Code				TAA772-HA01	TAA772-HA02	TAA772-HA03	TAA772-HA04
Date Sampled				01/10/01	01/10/01	01/10/01	01/10/01
Depth (feet below ground surface)				3.0	3.0	3.0	3.0
	Unit	Background[1]	PRG Residential[2]				
Styrene	µg/kg	NE	1700000	5.5 U	7.7 U	6.5 U	5.9 U
Tetrachloroethene (PCE)	µg/kg	NE	1500	5.5 U	7.7 U	6.5 U	5.9 U
Toluene	µg/kg	NE	520000	5.5 U	.62 J	.46 J	5.9 U
trans-1,2-Dichloroethene	µg/kg	NE	69000	5.5 U	7.7 U	6.5 U	5.9 U
trans-1,3-Dichloropropene	µg/kg	NE	780	5.5 U	7.7 U	6.5 U	5.9 U
Trichloroethene (TCE)	µg/kg	NE	53	5.5 U	7.7 U	6.5 U	5.9 U
Vinyl acetate	µg/kg	NE	430000	55 U	77 U	65 U	59 U
Vinyl chloride	µg/kg	NE	79	5.5 U	7.7 U	6.5 U	5.9 U
Xylenes (total)	µg/kg	NE	270000	5.5 U	7.7 U	6.5 U	5.9 U
EPA 8270							
1,2,4-Trichlorobenzene	µg/kg	NE	650000	370 U	360 U	360 U	350 U
1,2-Dichlorobenzene	µg/kg	NE	370000	370 U	360 U	360 U	350 U
1,3-Dichlorobenzene	µg/kg	NE	16000	370 U	360 U	360 U	350 U
1,4-Dichlorobenzene	µg/kg	NE	3400	370 U	360 U	360 U	350 U
2,4,5-Trichlorophenol	µg/kg	NE	>6100000	940 U	910 U	900 U	890 U
2,4,6-Trichlorophenol	µg/kg	NE	6100 <6900>	370 U	360 U	360 U	350 U
2,4-Dichlorophenol	µg/kg	NE	180000	370 U	360 U	360 U	350 U
2,4-Dimethylphenol	µg/kg	NE	1200000	370 U	360 U	360 U	350 U
2,4-Dinitrophenol	µg/kg	NE	120000	940 U	910 U	900 U	890 U
2,4-Dinitrotoluene	µg/kg	NE	120000	370 U	360 U	360 U	350 U
2,6-Dinitrotoluene	µg/kg	NE	61000	370 U	360 U	360 U	350 U
2-Chloronaphthalene	µg/kg	NE	4900000	370 U	360 U	360 U	350 U
2-Chlorophenol	µg/kg	NE	63000	370 U	360 U	360 U	350 U
2-Methyl-4,6-dinitrophenol	µg/kg	NE	NE	940 U	910 U	900 U	890 U
2-Methylnaphthalene	µg/kg	NE	NE	370 U	360 U	360 U	350 U
2-Methylphenol	µg/kg	NE	3000000	370 U	360 U	360 U	350 U
2-Nitroaniline	µg/kg	NE	1700	940 U	910 U	900 U	890 U
2-Nitrophenol	µg/kg	NE	NE	370 U	360 U	360 U	350 U
3,3'-Dichlorobenzidine	µg/kg	NE	1100	370 U	360 U	360 U	350 U
3-Methyl-4-chlorophenol	µg/kg	NE	NE	370 U	360 U	360 U	350 U
3-Nitroaniline	µg/kg	NE	NE	940 U	910 U	900 U	890 U

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification				18609-3935	18609-3936	18609-3937	18609-3938
Location Code				TAA772-HA01	TAA772-HA02	TAA772-HA03	TAA772-HA04
Date Sampled				01/10/01	01/10/01	01/10/01	01/10/01
Depth (feet below ground surface)				3.0	3.0	3.0	3.0
	Unit	Background[1]	PRG Residential[2]				
4-Bromophenyl phenyl ether	µg/kg	NE	NE	370 U	360 U	360 U	350 U
4-Chloroaniline	µg/kg	NE	240000	370 U	360 U	360 U	350 U
4-Chlorophenyl phenyl ether	µg/kg	NE	NE	370 U	360 U	360 U	350 U
4-Methylphenol	µg/kg	NE	310000	370 U	360 U	360 U	350 U
4-Nitroaniline	µg/kg	NE	NE	940 U	910 U	900 U	890 U
4-Nitrophenol	µg/kg	NE	NE	940 U	910 U	900 U	890 U
Acenaphthene	µg/kg	NE	3700000	370 U	360 U	360 U	350 U
Acenaphthylene	µg/kg	NE	NE	370 U	360 U	360 U	350 U
Anthracene	µg/kg	NE	22000000	370 U	360 U	360 U	350 U
Benzo[a]anthracene	µg/kg	22	620	370 U {160}	360 U {160}	360 U {160}	350 U {150}
Benzo[a]pyrene	µg/kg	27	62	37 U {10}	110 B Y	36 U {9.8}	35 U {9.6}
Benzo[b]fluoranthene	µg/kg	28	620	370 U {230}	360 U {220}	360 U {220}	350 U {220}
Benzo[ghi]perylene	µg/kg	NE	NE	370 U	360 U	360 U	350 U
Benzo[k]fluoranthene	µg/kg	24	6200 <380>	370 U {150}	360 U {150}	360 U {150}	350 U {140}
Bis (2-chloroethoxy)methane	µg/kg	NE	NE	370 U	360 U	360 U	350 U
Bis (2-chloroethyl)ether	µg/kg	NE	210	37 U	36 U	36 U	35 U
Bis (2-chloroisopropyl)ether	µg/kg	NE	2900	370 U	360 U	360 U	350 U
Bis (2-ethylhexyl)phthalate	µg/kg	NE	35000	370 U	360 U	360 U	350 U
Butyl benzyl phthalate	µg/kg	NE	12000000	370 U	360 U	360 U	350 U
Chrysene	µg/kg	31	62000 <3800>	370 U {180}	360 U {180}	360 U {180}	350 U {180}
Di-n-butyl phthalate	µg/kg	NE	6100000	370 U	360 U	360 U	350 U
Di-n-octyl phthalate	µg/kg	NE	2400000	370 U	360 U	360 U	350 U
Dibenz[a,h]anthracene	µg/kg	8	62	37 U {10}	11 J B	36 U {9.8}	35 U {9.6}
Dibenzofuran	µg/kg	NE	290000	370 U	360 U	360 U	350 U
Diethyl phthalate	µg/kg	NE	49000000	370 U	360 U	360 U	350 U
Dimethyl phthalate	µg/kg	NE	100000000	370 U	360 U	360 U	350 U
Fluoranthene	µg/kg	45	2300000	370 U {170}	360 U {160}	360 U {160}	350 U {160}
Fluorene	µg/kg	NE	2700000	370 U	360 U	360 U	350 U
Hexachlorobenzene	µg/kg	NE	300	37 U	36 U	36 U	35 U
Hexachlorobutadiene	µg/kg	NE	6200	370 U	360 U	360 U	350 U
Hexachlorocyclopentadiene	µg/kg	NE	370000	370 U	360 U	360 U	350 U

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification				18609-3935	18609-3936	18609-3937	18609-3938
Location Code				TAA772-HA01	TAA772-HA02	TAA772-HA03	TAA772-HA04
Date Sampled				01/10/01	01/10/01	01/10/01	01/10/01
Depth (feet below ground surface)				3.0	3.0	3.0	3.0
	Unit	Background[1]	PRG Residential[2]				
Hexachloroethane	µg/kg	NE	35000	370 U	360 U	360 U	350 U
Indeno[1,2,3-cd]pyrene	µg/kg	21	620	37 U {10}	43 B	36 U {9.8}	35 U {9.6}
N-Nitrosodi-n-propylamine	µg/kg	NE	69	37 U	36 U	36 U	35 U
N-Nitrosodiphenylamine	µg/kg	NE	99000	370 U	360 U	360 U	350 U
Naphthalene	µg/kg	NE	56000	370 U	360 U	360 U	350 U
Nitrobenzene	µg/kg	NE	20000	370 U	360 U	360 U	350 U
Pentachlorophenol	µg/kg	NE	3000	190 U	180 U	180 U	180 U
Phenanthrene	µg/kg	18	NE	370 U {180}	360 U {180}	360 U {170}	350 U {170}
Phenol	µg/kg	NE	37000000	370 U	360 U	360 U	350 U
Pyrene	µg/kg	41	2300000	370 U {190}	360 U {180}	360 U {180}	350 U {180}
EPA 6010							
Aluminum	mg/kg	14800	76000	13400	12800	11000	8280
Antimony	mg/kg	3.06	31	4.03 J B	11 U {3.78}	4.33 J B	10.7 U {3.68}
Barium	mg/kg	173	5400	118	119	93.7	73.2
Beryllium	mg/kg	0.669	150	.52	.492	.406	.321
Cadmium	mg/kg	2.35	37 <1.7>	.892 J	1.13	.588 J	.514 J
Calcium	mg/kg	46000	NE	4870	4600	3860	3170
Chromium	mg/kg	26.9	210	13	16.2	11.1	8.01
Cobalt	mg/kg	6.98	900	4.84	4.65	3.91	3.16
Copper	mg/kg	10.5	3100	7.4	8.45	5.57	4.3
Iron	mg/kg	18400	23000	15400	14900	12500	9940
Magnesium	mg/kg	8370	NE	5980	5530	4770	3910
Manganese	mg/kg	291	1800	254	244	202	168
Molybdenum	mg/kg	NE	390	2.17 J	1.12 J	2.17 U	1.14 J
Nickel	mg/kg	15.3	1600	11.1	13.1	8.54	6.95
Potassium	mg/kg	4890	NE	3170	3120	2540	2030
Silver	mg/kg	0.539	390	2.25 U {.474}	2.2 U {.461}	2.17 U {.457}	2.14 U {.449}
Sodium	mg/kg	405	NE	147 J	140 J	88.8 J	65.5 J
Thallium	mg/kg	0.42	5.2	1.13 U {.616}	1.1 U {.599}	1.09 U {.593}	1.07 U {.583}
Vanadium	mg/kg	71.8	550	33.1	32.9	28.8	22.2
Zinc	mg/kg	77.9	23000	43.4	48.7	33.8	27.8

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Sample Identification Location Code Date Sampled Depth (feet below ground surface)				18609-3935 TAA772-HA01 01/10/01 3.0	18609-3936 TAA772-HA02 01/10/01 3.0	18609-3937 TAA772-HA03 01/10/01 3.0	18609-3938 TAA772-HA04 01/10/01 3.0
	Unit	Background[1]	PRG Residential[2]				
EPA 7060A							
Arsenic	mg/kg	6.86	0.39	3.5 Y	3.46 Y	2.65 Y	2.39 Y
EPA 7421							
Lead	mg/kg	15.1	400 <150>	3.78	12.3	2.67	2.75
EPA 7471A							
Mercury	mg/kg	0.22	NE	.113 U	.11 U	.109 U	.107 U
EPA 7740							
Selenium	mg/kg	0.32	390	1.13 U {.136}	1.1 U {.135}	1.09 U {.134}	1.07 U {.131}
EPA 9012							
Cyanide	mg/kg	NE	1200	.564 U	.549 U	.543 U	.534 U

Revised Table 4 - 3
Summary of Analytical Results for Supplemental Confirmation Soil Samples — TAA 772

Explanation:
B - result exceeds established background limits
CA LUFT - California Leaking Underground Fuel Tank
EPA - United States Environmental Protection Agency
J - estimated
M - Modified
MDL - method detection limit
mg/kg - milligrams per kilogram
NE - not established
OHM - OHM Remediation Services Corp.
PRG - preliminary remedial goals
TPH - total petroleum hydrocarbons
U - not detected at or above the stated reportin limit
µg/kg - micrograms per kilogram
UJ - the sample detection limit is an estimated value
Y - result exceeds residential PRGs
< > - California Modified preliminary remedial goal
{ } - laboratory method detection limit

[1] Bechtel National, Inc. 1996. Draft Report Anthropogenic PAH Reference-Level Study, Marine Corps Air Station, El Toro, California. May.
Bechtel National, Inc. 1996. Final Technical Memorandum Background and Reference Levels Remedial Investigations, Marine Corps Air Station, El Toro, California. October.

[2] EPA Region IX. 2002. Preliminary Remedial Goals (PRG). October.

Revised Table 1
Summary of Analytical Results for Confirmation Soil Samples
Former TAA 772

Sample Identification				818655-3219		818655-3220		818655-3221		818655-3222	
Location Code				TAA772-SB-E1		TAA772-SB-E1		TAA772-SB-E2		TAA772-SB-E2	
Date Sampled				03/25/03		03/25/03		03/25/03		03/25/03	
Depth (feet below ground surface)				1.5		3		1.5		3	
	Unit	Background[1]	Residential PRG[2]								
TPH (EPA 8015M)											
Diesel	mg/kg	NE	NE	12 U		11 U		11 U		11 U	
Gasoline	mg/kg	NE	NE	10 U		10 U		11 U		9.4 U	
PESTICIDES (EPA 8081A)											
4,4'-DDD	mg/kg	0.0361	2.4	.0048 U		.0043 U		.0044 U		.0042 U	
4,4'-DDE	mg/kg	0.145	1.7	.0048 U		.0043 U		.0044 U		.0042 U	
4,4'-DDT	mg/kg	0.236	1.7	.0048 U		.0043 U		.0044 U		.0042 U	
Aldrin	mg/kg	NE	0.029	.0024 U		.0021 U		.0022 U		.0021 U	
Alpha-BHC	mg/kg	NE	0.090	.0024 U		.0021 U		.0022 U		.0021 U	
Alpha-Chlordane	mg/kg	0.00224	1.6	.0024 U	{.00024}	.0021 U		.0022 U		.0021 U	
Beta-BHC	mg/kg	NE	0.32	.0024 U		.0021 U		.0022 U		.0021 U	
Delta-BHC	mg/kg	NE	NE	.0024 U		.0021 U		.0022 U		.0021 U	
Dieldrin	mg/kg	0.0199	0.030	.0048 U		.0043 U		.0044 U		.0042 U	
Endosulfan I	mg/kg	0.000179	370	.0048 U	{.0012}	.0043 U	{.0011}	.0044 U	{.0011}	.0042 U	{.0011}
Endosulfan II	mg/kg	0.00222	370	.0048 U	{.0012}	.0043 U	{.0011}	.0044 U	{.0011}	.0042 U	{.0011}
Endosulfan Sulfate	mg/kg	0.0031	NE	.0048 U	{.0012}	.0043 U	{.0011}	.0044 U	{.0011}	.0042 U	{.0011}
Endrin	mg/kg	0.00222	18	.0036 U	{.0012}	.0032 U	{.0011}	.0033 U	{.0011}	.0032 U	{.0011}
Endrin Aldehyde	mg/kg	0.00222	NE	.0048 U	{.0012}	.0043 U	{.0011}	.0044 U	{.0011}	.0042 U	{.0011}
Endrin Ketone	mg/kg	NE	NE	.0036 U		.0032 U		.0033 U		.0032 U	
Gamma-BHC	mg/kg	NE	0.44	.0024 U		.0021 U		.0022 U		.0021 U	
Gamma-Chlordane	mg/kg	0.0027	1.6	.0024 U		.0021 U		.0022 U		.0021 U	
Heptachlor	mg/kg	NE	0.11	.0024 U		.0021 U		.0022 U		.0021 U	
Heptachlor Epoxide	mg/kg	NE	0.053	.0024 U		.0021 U		.0022 U		.0021 U	
Methoxychlor	mg/kg	NE	300	.024 U		.021 U		.022 U		.021 U	
Toxaphene	mg/kg	NE	0.44	.12 U		.11 U		.11 U		.11 U	
Volatiles (EPA 8260B)											
1,1,1-Trichloroethane	µg/kg	NE	1200000	5.3 U		5.4 U		5.2 U		5 U	
1,1,2,2-Tetrachloroethane	µg/kg	NE	410	5.3 U		5.4 U		5.2 U		5 U	
1,1,2-Trichloroethane	µg/kg	NE	730	5.3 U		5.4 U		5.2 U		5 U	
1,1-Dichloroethane	µg/kg	NE	510000 <2800>	5.3 U		5.4 U		5.2 U		5 U	
1,1-Dichloroethene	µg/kg	NE	120000	5.3 U		5.4 U		5.2 U		5 U	
1,2-Dichloroethane	µg/kg	NE	280	5.3 U		5.4 U		5.2 U		5 U	
1,2-Dichloropropane	µg/kg	NE	340	5.3 U		5.4 U		5.2 U		5 U	
2-Butanone	µg/kg	NE	7300000	53 U		54 U		52 U		50 U	
2-Chloroethyl Vinyl Ether	µg/kg	NE	NE	53 U		54 U		52 U		50 U	

Revised Table 1
Summary of Analytical Results for Confirmation Soil Samples
Former TAA 772

Sample Identification				818655-3219	818655-3220	818655-3221	818655-3222
Location Code				TAA772-SB-E1	TAA772-SB-E1	TAA772-SB-E2	TAA772-SB-E2
Date Sampled				03/25/03	03/25/03	03/25/03	03/25/03
Depth (feet below ground surface)				1.5	3	1.5	3
	Unit	Background[1]	Residential PRG[2]				
2-Hexanone	µg/kg	NE	NE	53 U	54 U	52 U	50 U
4-Methyl-2-Pentanone	µg/kg	NE	790000	53 U	54 U	52 U	50 U
Acetone	µg/kg	NE	1600000	9 J	8.2 J	10 J	50 U
Benzene	µg/kg	NE	600	5.3 U	5.4 U	5.2 U	5 U
Bromodichloromethane	µg/kg	NE	820	5.3 U	5.4 U	5.2 U	5 U
Bromoform	µg/kg	NE	62000	5.3 U	5.4 U	5.2 U	5 U
Bromomethane	µg/kg	NE	3900	5.3 U	5.4 U	5.2 U	5 U
Carbon Disulfide	µg/kg	NE	360000	5.3 U	5.4 U	5.2 U	5 U
Carbon Tetrachloride	µg/kg	NE	250	5.3 U	5.4 U	5.2 U	5 U
Chlorobenzene	µg/kg	NE	150000	5.3 U	5.4 U	5.2 U	5 U
Chloroethane	µg/kg	NE	3000	5.3 U	5.4 U	5.2 U	5 U
Chloroform	µg/kg	NE	3600 <940>	5.3 U	5.4 U	5.2 U	5 U
Chloromethane	µg/kg	NE	1200	5.3 U	5.4 U	5.2 U	5 U
Cis-1,2-Dichloroethene	µg/kg	NE	43000	5.3 U	5.4 U	5.2 U	5 U
Cis-1,3-Dichloropropene	µg/kg	NE	780	5.3 U	5.4 U	5.2 U	5 U
Dibromochloromethane	µg/kg	NE	1100	5.3 U	5.4 U	5.2 U	5 U
Ethylbenzene	µg/kg	NE	8900	5.3 U	5.4 U	5.2 U	5 U
Methyl Tert-Butyl Ether	µg/kg	NE	62000 <17000>	11 U	11 U	10 U	10 U
Methylene Chloride	µg/kg	NE	9100	5.3 U	5.4 U	5.2 U	5 U
Styrene	µg/kg	NE	1700000	5.3 U	5.4 U	5.2 U	5 U
Tetrachloroethene	µg/kg	NE	1500	5.3 U	5.4 U	5.2 U	5 U
Toluene	µg/kg	NE	520000	5.3 U	5.4 U	5.2 U	5 U
Trans-1,2-Dichloroethene	µg/kg	NE	69000	5.3 U	5.4 U	5.2 U	5 U
Trans-1,3-Dichloropropene	µg/kg	NE	780	5.3 U	5.4 U	5.2 U	5 U
Trichloroethene	µg/kg	NE	53	5.3 U	5.4 U	5.2 U	5 U
Vinyl Acetate	µg/kg	NE	430000	53 U	54 U	52 U	50 U
Vinyl Chloride	µg/kg	NE	79	5.3 U	5.4 U	5.2 U	5 U
Xylene, (Total)	µg/kg	NE	270000	5.3 U	5.4 U	5.2 U	5 U
Semi-Volatiles (EPA 8270C/SIM)							
1,2,4-Trichlorobenzene	µg/kg	NE	650000	390 U	350 U	360 U	350 U
1,2-Dichlorobenzene	µg/kg	NE	370000	390 U	350 U	360 U	350 U
1,3-Dichlorobenzene	µg/kg	NE	16000	390 U	350 U	360 U	350 U
1,4-Dichlorobenzene	µg/kg	NE	3400	390 U	350 U	360 U	350 U
2,4,5-Trichlorophenol	µg/kg	NE	6100000	990 U	890 U	920 U	880 U
2,4,6-Trichlorophenol	µg/kg	NE	6100 <6900>	390 U	350 U	360 U	350 U

Revised Table 1
Summary of Analytical Results for Confirmation Soil Samples
Former TAA 772

Sample Identification Location Code Date Sampled Depth (feet below ground surface)				818655-3219 TAA772-SB-E1 03/25/03 1.5	818655-3220 TAA772-SB-E1 03/25/03 3	818655-3221 TAA772-SB-E2 03/25/03 1.5	818655-3222 TAA772-SB-E2 03/25/03 3
	Unit	Background[1]	Residential PRG[2]				
2,4-Dichlorophenol	µg/kg	NE	180000	390 U	350 U	360 U	350 U
2,4-Dimethylphenol	µg/kg	NE	1200000	390 U	350 U	360 U	350 U
2,4-Dinitrophenol	µg/kg	NE	120000	990 UJ {200}	890 UJ {180}	920 UJ {180}	880 UJ {180}
2,4-Dinitrotoluene	µg/kg	NE	120000	390 U	350 U	360 U	350 U
2,6-Dinitrotoluene	µg/kg	NE	61000	390 U	350 U	360 U	350 U
2-Chloronaphthalene	µg/kg	NE	4900000	390 U	350 U	360 U	350 U
2-Chlorophenol	µg/kg	NE	63000	390 U	350 U	360 U	350 U
2-Methylnaphthalene	µg/kg	NE	NE	390 U	350 U	360 U	350 U
2-Methylphenol	µg/kg	NE	3000000	390 U	350 U	360 U	350 U
2-Nitroaniline	µg/kg	NE	1700	990 U	890 U	920 U	880 U
2-Nitrophenol	µg/kg	NE	NE	390 U	350 U	360 U	350 U
3,3'-Dichlorobenzidine	µg/kg	NE	1100	390 U	350 U	360 U	350 U
3-Nitroaniline	µg/kg	NE	NE	990 U	890 U	920 U	880 U
4,6-Dinitro-2-Methylphenol	µg/kg	NE	NE	990 U	890 U	920 U	880 U
4-Bromophenyl Phenyl Ether	µg/kg	NE	NE	390 U	350 U	360 U	350 U
4-Chloro-3-Methylphenol	µg/kg	NE	NE	390 U	350 U	360 U	350 U
4-Chloroaniline	µg/kg	NE	240000	390 U	350 U	360 U	350 U
4-Chlorophenyl Phenyl Ether	µg/kg	NE	NE	390 U	350 U	360 U	350 U
4-Methylphenol	µg/kg	NE	310000	390 U	350 U	360 U	350 U
4-Nitroaniline	µg/kg	NE	NE	990 U	890 U	920 U	880 U
4-Nitrophenol	µg/kg	NE	NE	990 U	890 U	920 U	880 U
Acenaphthene	µg/kg	NE	3700000	390 U	350 U	360 U	350 U
Acenaphthylene	µg/kg	NE	NE	390 U	350 U	360 U	350 U
Anthracene	µg/kg	NE	22000000	390 U	350 U	360 U	350 U
Benzo(a)Anthracene	µg/kg	22	620	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Benzo(a)Pyrene	µg/kg	27	62	39 U {11}	35 U {11}	36 U {11}	35 U {11}
Benzo(b)Fluoranthene	µg/kg	28	620	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Benzo(ghi)Perylene	µg/kg	29	NE	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Benzo(k)Fluoranthene	µg/kg	24	6200 <380>	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Bis(2-Chloroethoxy)Methane	µg/kg	NE	NE	390 U	350 U	360 U	350 U
Bis(2-Chloroethyl)Ether	µg/kg	NE	210	39 U	35 U	36 U	35 U
Bis(2-Chloroisopropyl)Ether	µg/kg	NE	2900	390 U	350 U	360 U	350 U
Bis(2-Ethylhexyl)Phthalate	µg/kg	NE	35000	390 U	350 U	360 U	350 U
Butyl Benzyl Phthalate	µg/kg	NE	12000000	390 U	350 U	360 U	350 U
Chrysene	µg/kg	31	62000 <3800>	390 U {200}	350 U {180}	360 U {180}	350 U {180}

Revised Table 1
Summary of Analytical Results for Confirmation Soil Samples
Former TAA 772

Sample Identification Location Code Date Sampled Depth (feet below ground surface)				818655-3219 TAA772-SB-E1 03/25/03 1.5	818655-3220 TAA772-SB-E1 03/25/03 3	818655-3221 TAA772-SB-E2 03/25/03 1.5	818655-3222 TAA772-SB-E2 03/25/03 3
	Unit	Background[1]	Residential PRG[2]				
Di-n-Butyl Phthalate	µg/kg	NE	6100000	390 U	350 U	360 U	350 U
Di-n-Octyl Phthalate	µg/kg	NE	2400000	390 U	350 U	360 U	350 U
Dibenzo(a,h)Anthracene	µg/kg	8	62	39 U {11}	35 U {11}	36 U {11}	35 U {11}
Dibenzofuran	µg/kg	NE	290000	390 U	350 U	360 U	350 U
Diethyl Phthalate	µg/kg	NE	49000000	390 U	350 U	360 U	350 U
Dimethyl Phthalate	µg/kg	NE	100000000	390 U	350 U	360 U	350 U
Fluoranthene	µg/kg	45	2300000	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Fluorene	µg/kg	NE	2700000	390 U	350 U	360 U	350 U
Hexachlorobenzene	µg/kg	NE	300	89 U	80 U	83 U	80 U
Hexachlorobutadiene	µg/kg	NE	6200	390 U	350 U	360 U	350 U
Hexachlorocyclopentadiene	µg/kg	NE	370000	390 U	350 U	360 U	350 U
Hexachloroethane	µg/kg	NE	35000	390 U	350 U	360 U	350 U
Indeno(1,2,3-cd)Pyrene	µg/kg	21	620	42 U {11}	38 U {11}	39 U {11}	37 U {11}
N-Nitroso-di-n-Propylamine	µg/kg	NE	69	39 U	35 U	36 U	35 U
N-Nitrosodiphenylamine	µg/kg	NE	99000	390 U	350 U	360 U	350 U
Naphthalene	µg/kg	NE	56000	390 U	350 U	360 U	350 U
Nitrobenzene	µg/kg	NE	20000	390 U	350 U	360 U	350 U
Pentachlorophenol	µg/kg	NE	3000	240 U	210 U	220 U	210 U
Phenanthrene	µg/kg	18	NE	390 U {200}	350 U {180}	360 U {180}	350 U {180}
Phenol	µg/kg	NE	37000000	390 U	350 U	360 U	350 U
Pyrene	µg/kg	41	2300000	390 U {200}	350 U {180}	360 U {180}	350 U {180}
METALS (EPA 6010B/7471A)							
Aluminum	mg/kg	14800	76000	19400 B	16000 B	18300 B	11900
Antimony	mg/kg	3.06	31	5.97 U {2.51}	4.76 J B	2.88 J	2.41 J
Arsenic	mg/kg	6.86	0.39	3.62 Y	3.28 Y	3.64 Y	2.58 Y
Barium	mg/kg	173	5400	137	132	123	70.6
Beryllium	mg/kg	0.669	150	.779 B	.67 B	.747 B	.505
Cadmium	mg/kg	2.35	37 <1.7>	1.25	1.16	1.45	.936
Calcium	mg/kg	46000	NE	5240	4990	4870	3680
Chromium	mg/kg	26.9	210	18.4	15.8	17.7	11.5
Cobalt	mg/kg	6.98	900	6.81	6.47	7.15 B	5.04
Copper	mg/kg	10.5	3100	10.3	8.45	10.2	6.52
Iron	mg/kg	18400	23000	18600 B	16100	17600	11900
Lead	mg/kg	15.1	400 <150>	5.43	4.65	5.24	3.35
Magnesium	mg/kg	8370	NE	7290	6790	6800	4960

Revised Table 1
Summary of Analytical Results for Confirmation Soil Samples
Former TAA 772

Sample Identification				818655-3219	818655-3220	818655-3221	818655-3222
Location Code				TAA772-SB-E1	TAA772-SB-E1	TAA772-SB-E2	TAA772-SB-E2
Date Sampled				03/25/03	03/25/03	03/25/03	03/25/03
Depth (feet below ground surface)				1.5	3	1.5	3
	Unit	Background[1]	Residential PRG[2]				
Manganese	mg/kg	291	1800	303 B	255	287	200
Mercury	mg/kg	0.22	NE	.119 U	.107 U	.11 U	.106 U
Molybdenum	mg/kg	NE	390	5.97 U	5.36 U	5.52 U	5.3 U
Nickel	mg/kg	15.3	1600	13.5	11.3	13.3	7.92
Potassium	mg/kg	4890	NE	4000	2880	3730	2170
Selenium	mg/kg	0.32	390	1.19 U {.34}	1.07 U {.305}	1.1 U {.315}	1.06 U {.302}
Silver	mg/kg	0.539	390	2.39 U {.749}	2.14 U {.673}	2.21 U {.694}	2.12 U {.666}
Sodium	mg/kg	405	NE	180 U	162 U	167 U	127 U
Thallium	mg/kg	0.42	5.2	1.19 U {.364}	1.07 U {.327}	1.1 U {.337}	1.06 U {.323}
Vanadium	mg/kg	71.8	550	51.5	45.1	49.6	32.6
Zinc	mg/kg	77.9	23000	54.3	47.9	51.5	34.9

B - result exceeds background
EPA - United States Environmental Protection Agency
J - estimated value
M - modified
MCAS - Marine Corps Air Station
mg/kg - milligrams per kilogram
NE - not established
PRG - preliminary remedial goals
TPH - total petroleum hydrocarbons
U - not detected at or above the stated reporting limit
UJ - estimated reporting limit
Y - result exceeds residential PRGs
µg/kg - micrograms per kilogram
< > - California Modified preliminary remedial goal
{ } - laboratory method detection limit

[1] *Bechtel National, Inc. 1996. Draft Report Anthropogenic PAH Reference-Level Study, Marine Corps Air Station, El Toro, California. May.*
Bechtel National, Inc. 1996. Final Technical Memorandum Background and Reference Levels Remedial Investigations, Marine Corps Air Station, El Toro, California. October.

[2] *EPA Region IX. 2002. Preliminary Remedial Goals (PRG). October.*

Attachment 5

Revised Table 3
Residential Risk Screening Worksheet for Soil
TAA 772

Chemical of Potential Concern	Maximum TAA 772 Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[A] (mg/kg)	CANCER			NON-CANCER		
			Residential PRG[B] (mg/kg)	TAA 772 Maximum Ratio[C]	MCAS El Toro Background Ratio[C]	Residential PRG[D] (mg/kg)	TAA 772 Maximum Ratio[E]	MCAS El Toro Background Ratio[E]
VOCs								
Acetone	0.02	NE	NE	NE	NE	1.6E+03	1.25E-05	NE
Toluene	0.00062	NE	NE	NE	NE	6.6E+02	9.39E-07	NE
SVOCs								
Benzo[a]pyrene	0.11	0.027	6.2E-02	1.77E+00	4.35E-01	NE	NE	NE
Dibenz[a,h]anthracene	0.011	0.008	6.2E-02	1.77E-01	1.29E-01	NE	NE	NE
Indeno[1,2,3-cd]pyrene	0.043	0.021	6.2E-01	6.94E-02	3.39E-02	NE	NE	NE
Di-n-butylphthalate	0.022	NE	NE	NE	NE	6.1E+03	3.61E-06	NE
Bis(2-Ethylhexyl)phthalate	0.054	NE	3.5E+01	1.54E-03	NE	1.2E+03	4.50E-05	NE
Pesticides								
4,4'-DDT	.0031	0.236	1.7E+00	1.82E-03	1.39E-01	3.6E+01	8.61E-05	6.56E-03
alpha-Chlordane	.0027	0.00224	1.6E+00	1.69E-03	1.40E-03	3.5E+01	7.71E-05	6.40E-05
Metals								
Aluminum	19400	14800	NE	NE	NE	7.6E+04	2.55E-01	1.95E-01
Antimony	22	3.06	NE	NE	NE	3.1E+01	7.10E-01	9.87E-02
Arsenic	3.64	6.86	3.9E-01	9.33E+00	1.76E+01	2.2E+01	1.65E-01	3.12E-01
Barium	137	173	NE	NE	NE	5.4E+03	2.54E-02	3.20E-02
Beryllium	.779	0.669	1.1E+03	7.08E-04	6.08E-04	1.5E+02	5.19E-03	4.46E-03
Cadmium	1.45	2.35	1.4E+03	1.04E-03	1.68E-03	3.7E+01	3.92E-02	6.35E-02
Chromium	18.4	26.9	2.1E+02	8.76E-02	1.28E-01	NE	NE	NE
Cobalt	7.15	6.98	9.0E+02	7.94E-03	7.76E-03	1.4E+03	5.11E-03	4.99E-03
Copper	40	10.5	NE	NE	NE	3.1E+03	1.29E-02	3.39E-03
Iron	18600	18400	NE	NE	NE	2.3E+04	8.09E-01	8.00E-01
Lead*	12.3	15.1	NE	NE	NE	1.5E+02	8.20E-02	1.01E-01
Manganese*	303	291	NE	NE	NE	1.8E+03	1.68E-01	1.62E-01
Molybdenum	2.17	NE	NE	NE	NE	3.9E+02	5.56E-03	NE
Nickel	13.5	15.3	NE	NE	NE	1.6E+03	8.44E-03	9.56E-03
Thallium	2.3	0.42	NE	NE	NE	5.2E+00	4.42E-01	8.08E-02
Vanadium	51.5	71.8	NE	NE	NE	5.5E+02	9.36E-02	1.31E-01
Zinc	67	77.9	NE	NE	NE	2.3E+04	2.91E-03	3.39E-03
Subtotal sum of ratios				1.15E+01	1.85E+01		2.83E+00	2.01E+00

Revised Table 3
Residential Risk Screening Worksheet for Soil
TAA 772

MCAS EL TORO BACKGROUND RISK RATIOS	CANCER RISK		1.85E-05	NON-CANCER HAZARD INDEX		2.01
TAA 772 SUMMED RISK	CANCER RISK	1.15E-05		NON-CANCER HAZARD INDEX	2.83	
TAA 772 RISK LESS BACKGROUND RISK (NET RISK)	NET CANCER RISK	$<1 \times 10^{-6}$				

[A] MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.
[B] Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.
[C] The Ratio is determined by dividing the Concentration by the respective PRG.
[D] Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.
[E] The Ratio is determined by dividing the Concentration by the respective PRG.
and 2003 soil borings and JEG 1992 RFA soil borings.
Contributors to risk were analytes that were above laboratory reporting limits.
MCAS - Marine Corps Air Station
mg/kg - Milligrams per kilogram.
NE - Not established/No entry.
PRG - preliminary remediation goal
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds
**CAL-modified PRG*

Shaw™ Shaw Environmental, Inc.

SHAW TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT N62474-98-D-2076 **DOCUMENT CONTROL NUMBER 6811.0**

TO: Administrative Contract Officer
Southwest Division
Naval Facilities Engineering Command
Michelle Crook, 02R1.MC
1230 Columbia St., Suite 870
San Diego, CA 92101-5817

Date : October 29, 2003

CTO : 0024

Location: MCAS El Toro

FROM:

Dhananjay Rawal
Project Manager

DESCRIPTION OF ENCLOSURE : *Response to DTSC Comments on Addendum to Closure Report for TAA 772, Former MCAS, El Toro, Project 818655, CTO 0024, Document Control Number 5778, dated June 26, 2003. Response is dated October 28, 2003.*

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Subj: CERCLA Administrative Record Materials
Former Marine Corps Air Station, El Toro

Installation: **Former Marine Corps Air Station, El Toro**

UIC Number: M60050

Site Identifier: TAA 772

Key Words: TAA 772

Contract Number: N62474-98-D-2076

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Note Closure Report dated 1999 is CERCLA AR # M60050/000241