Final Work Plan

Unexploded Ordnance (UXO) Model Cleanup

Kaho'olawe Island, Hawaii

PACDIV Contract No. N62742-93-D-0610, Delivery Order No. 0015
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1.0 PURPOSE OF MODEL UXO CLEANUP PROJECT

The purpose of this Model UXO Cleanup Project is to conduct an unexploded ordnance (UXO) cleanup of a limited area on the island of Kaho'olawe in order to model:

- UXO cleanup procedures and technologies
- Coordination of UXO clearance
- Cleanup and protection of historical, cultural, and religious (HCR) sites
- Environmental protection efforts in areas affected by UXO cleanup

The Memorandum of Understanding (MOU) between the U.S. Navy and the State of Hawaii provides for commencement of cleanup activities prior to completion of the land use plan with the agreement of both parties. An early cleanup will be a valuable opportunity to model (try out) procedures which could be used during the OMNIBUS UXO cleanup. The areas included in the model cleanup are those which the Navy and KIRC have jointly selected. Generally, the areas are those visited by the PKO during religious and cultural accesses. A primary purpose of the model is to reduce the risk of bodily harm posed by the potential presence of unexploded ordnance to those accessing the island for cultural and religious purposes. Additional areas may be proposed by either the KIRC or Navy for future inclusion by joint agreement.

Data collected and lessons learned during this model project are needed by the KIRC and Navy to adequately plan for the Navy's OMNIBUS cleanup. Additionally, the commencement of cleanup activities will demonstrate that the Navy and the KIRC are moving forward with actual cleanup.

2.0 ISLAND HISTORY

Kaho'olawe is an approximate six mile wide by 11 mile long island containing approximately 28,800 acres. The highest point is 1477 ft. The island has been inhabited periodically during prehistoric and historic times. The low habitation rate is due primarily to bad weather and lack of a fresh water supply. A brief synopsis of Kaho'olawe's recent history is:

1800: Goats were introduced by a Maui chieftain. The goats were a gift from the British explorer Vancouver, and the Maui leader sent these to Kaho'olawe to multiply, as a ready food supply for his people.

1800-1850: Island was used as a penal colony; fresh water was brought in by canoe for the prisoners. (Last prisoner: 1858)

1859-1863: Kaho'olawe was leased to a series of private ranchers. Wells were dug that produced potable water during the rainy season. Water was brought from Maui by ship the remainder of the year.

1898: Territory of Hawaii was established. Ranching continued until 1910 when the lease was canceled due to severe soil erosion.

1910-1918: Kaho'olawe was proclaimed a Forest Preserve. Attempts to revegetate the island failed.

1918: Kaho'olawe Island was again leased as ranch land.

1927 Lighthouse built.

1941: Kaho'olawe was subleased to the U.S. Government by the Kaho'olawe Ranch company for use as a training area. Primary use was as a target range for naval gunfire and aerial bombing.

1953: President Eisenhower signed an Executive Order placing the control of the Island under the Secretary of the Navy. The Island was to be returned to Hawaii when it was no longer needed.

1959: Hawaii statehood. No changes to the military lease on Kaho'olawe occurred.

1965: "Sailor Hat" tests were conducted on Kaho'olawe. Three tests of 500 tons of TNT each were detonated to simulate the blast effects of nuclear weapons on shipboard weapon systems.

1969: The center third of the Island was designated as the impact area, the remainder as troop safety zones. This reduced noise pollution and prevented the inadvertent bombing of nearby Maui.

1975: Cultural interest in the Hawaiian Islands spurred by groups such as the Protect Kaho'olawe Ohana and "Life of the Land" prompted the Government to conduct feasibility studies for clearing unexploded ordnance from the island. MARINCO, Falls Church, VA, completed the most in depth study during 1975.

1976: A group of native Hawaiians was permitted to hold a religious ceremony on Kaho'olawe. This event sparked additional historical and archaeological interest in the island.

1980: Department of Defense was taken to court through the Hawaii Legal Aid Society. The resulting consent decree, Aluli vs Brown, set forth specific responsibilities and deadlines to be met by the DOD, State and Local agencies.

1981: The entire island was designated as Kaho'olawe Island Archaeological District and was listed on the National Register of Historic Places.

1990: Presidential memo of 22 October 1990 ceased use of Kaho'olawe as a live ordnance training area.

1994: The Secretary of the Navy conveyed the island and its surrounding waters to the State of Hawaii.

For over 50 years Kaho'olawe Island was used as a weapons range. In 1980, a consent decree required the Navy to allow access to the island, perform limited surface clearance of UXO, undertake soil conservation, goat eradication and prepare a cultural resource management plan. In 1990 the President directed the Secretary of the Navy to discontinue the use of Kaho'olawe Island as a weapon range.

Title X of Fiscal Year (FY) 1994 Department of Defense Appropriations Act directed that the United States of America, through the Secretary of the Navy, convey the island to the State of Hawaii and enter into an MOU regarding the cleanup of the island. On 6 May 1994 the Navy signed an MOU with the State of Hawaii establishing a basic framework to accomplish Kaho'olawe Island cleanup. Title for the land was conveyed to the State on 9 May 1994 but access control remains with the Navy until UXO cleanup operations are complete or until 11 November 2003, which ever occurs first.

CINCPAC and CNO designated COMNAVBASE as the DoD point of contact in Hawaii for the cleanup and conveyance of Kaho'olawe. COMNAVBASE was directed to utilize PACNAVFACENGCOM to provide technical assistance.

Title X requires that Kaho'olawe Island is to be used only for cultural, historical, archaeological or educational purposes as determined by the State of Hawaii. The cleanup of UXO from the island is to allow for safe use of the island for these purposes. In 1993, the State of Hawaii established the Kaho'olawe Island Reserve and created the Kaho'olawe Island Reserve Commission (KIRC) to oversee the management of the reserve.

The primary areas chosen for the model cleanup are portions of the Hakioawa cultural area and the Makahiki Trail. Hakioawa was the island's major population center and contains the island's largest known heiau. Hakioawa also contains another important cultural resource, a ko'a , which according to legend was constructed by 'Ai' ai, son of Ku 'ula, the patron god of fisherman. The Makahiki Trail is a pathway from Hakioawa on the northeastern side of the island to Keana Keiki on the southwestern side of the island. This trail is used for cultural and religious ceremonies. The Makahiki is a religious and cultural period in which to honor Lono, the god of agriculture and fertility. The Makahiki season is a four month period beginning with the rising of Makalii at sunset.

3.0 PROJECT BACKGROUND

The Model UXO Cleanup Project is being undertaken to test the feasibility and effectiveness of a number of technologies, processes and procedures and gather information and data to be utilized in

the development of the Omnibus UXO cleanup plan. It is intended that the actual on-island UXO cleanup will occur within a 120-day period extending from September 1, 1995, to December 31, 1995.

4.0 INTRODUCTION

OHM Remediation Services (OHM), in conjunction with its major UXO subcontractor, BioGenesis Pacific, Inc. (BPI), will conduct the Unexploded Ordnance (UXO) Model Cleanup at Kaho`olawe Island, Hawaii. This Work Plan, along with the UXO Cleanup Plan (Annex A), Site Health and Safety Plan (Annex B), Survey and Mapping Plan (Annex C), Environmental Protection Plan (Annex D), Quality Control Plan (Annex E), Infrastructure Upgrades Plan (Annex F), and Equipment List (Annex G), describes the overall scope of the project, the general methodology to be used, and the specific UXO site requirements.

4.1 Background

The Model Cleanup (MC) is a pilot project which will test the feasibility and effectiveness of a number of technologies, processes and procedures, and to gather information and data to be utilized in the development of the omnibus UXO cleanup plan. It is intended that the actual on-island UXO cleanup will occur within a 120 day period..

4.2 Kaho`olawe Island Map

The information reflected in the following paragraphs summarize general information concerning Kaho`olawe and is provided to assist personnel preparing to work on the island. (Refer to Figure 1).

4.2.1 Description

The work associated with this contract will be performed on Kaho`olawe Island in designated areas traversing the island, from Hakioawa in the east to Honokanai'a and beyond in the west.

Boundaries and limits of the UXO model cleanup have been provided by the U.S. Navy. The total area of the model cleanup is approximately 290 acres of varying degrees of difficulty. The following table (Table 1) provides information on each major subarea and the clearance requirements.

5.0 PROJECT OBJECTIVES

The intent of this contract is to provide model UXO clearance at various locations on Kaho`olawe Island. OHM/BPI will conduct UXO clearance sweep activities for the model cleanup within the areas specified in Table 1 of this Work Plan to ascertain functional technology and generate practical UXO clearance techniques for the various physical and geological characteristics of the island; and to

KAHO'OLAWE ISLAND MAP

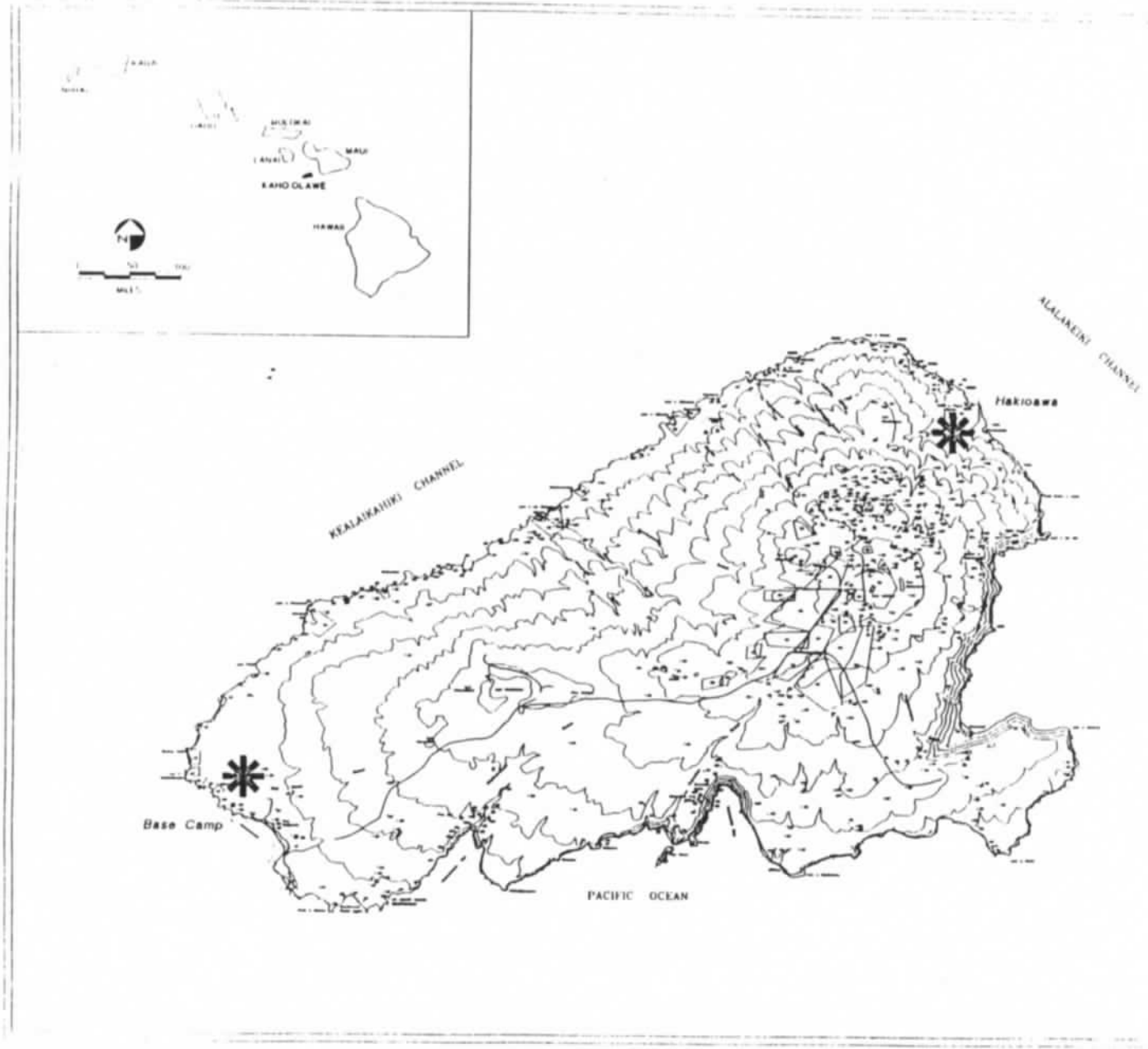

FIGURE 1

TABLE 1

MODEL CLEANUP UXO CLEARANCE DEPTH MATRIX

UXO clearance shall be executed to the depths cited under "RECOMN'D CLNC LEVEL". Where clearance to the specified depth is not possible the actual clearance depths will be documented together with the reason for more shallow clearance. UXO detection results shall be fully documented to the maximum detection depth of the instruments employed, in addition to the actual clearance level executed. Tier IIB vehicle roads shall be cleared to the required 4 ft depth below finish grade in all cases.

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AREA MAP #	SITE DESCRPT'N WORK AREA	PROJECTED SITE USE	FEATURES	USE LEVEL	6055.9 CH 12 CLNC	RECOMN'D CLNC LEVEL	USE
HAKIOAWA MAP 18	CAMP WK-AREA: A	RECREATION, CAMPING, SOIL DISTUR-BANCE	TREES, BEACH, CAMP SITES, STRUCTURES	INTENSE FOOT ACCESS	4 FT SURFACE RECREAT ION	4 FT MAIN CAMP AREA TIER IIA 4 FT> EXCAVAT'N IN SPECIFIC AREAS TIER IIB*	2 1
HAKIOAWA MAP 18	BEACH FRONT WK-AREA: A	PLANTING, RECREATION, SOIL DISTUR-BANCE	SAND ROCK, TREES, BOAT HOUSE	INTENSE FOOT & BOAT ACCESS	4 FT SURFACE RECREAT ION	4 FT BEACH & PLANTING AREA TIER IIA	2
SHORELINE MAP 18 MAP 1	SHORELINE LOW WATER MARK TO HIGH WATER MARK WK-AREA: A, B1 & B2 WK-AREA: L	RECREATION, NATURAL SOIL/ROCK DISTURBANC E FROM WAVES HAKIOAWA HAKIOAWA WEST SHORE	SAND-ROCK BEACH, STONE CLIFF, SAND & ROCK MOVE IN SURF	INTENSE C FOOT ACCESS	4 FT SURFACE RECREAT ION	4 FT TIER IIA* * document lesser depths in rock	2
HAKIOAWA MAP 18	BURIAL GROUNDS WK-AREA: A	HCR SITE, NO SOIL DISTURBANC E PERMITTED	BURIAL SITES, TREES ROCK/GRASS	MINIMAL FOOT ACCESS	4 FT SURFACE RECREAT ION	1 FT BURIAL GROUNDS TIER I	4
AREA ABOVE HAKIOAWA MAP 18 MAP 16 MAP 14	WATER CATCHMENT WK-AREA: D3 WK-AREA: D1 WK-AREA: D4	WATER CATCHMENT, PLANNED EXCAVATION	FLATS & SLOPE	PERIODIC FOOT ACCESS	4 FT > EXCAVA TION	4 FT > EXCAVAT'N TIER IIB*	1

TRAILS	STATE/KIRC ACCESS & MAKAHIKI TRAILS	WALKING ACCESS, NO PLANNED SOIL DISTUR-BANCE	15' WALKING TRAILS	LOW IMPACT PERIODIC ACCESS	4 FT	4 FT TIER IIA	2
MAP 18	WK-AREA: A	HAKIOAWA					
MAP 18	WK-AREA:B2	HAKIOAWA					
MAP 18	WK-AREA:B1	HAKIOAWA					
MAP 14	WK-AREA:F2	K1-CATCHMT					
MAP 14	WK-AREA:F1	K1-CATCHMT					
MAP 13	WK-AREA: G	MOAULAIKI					
MAP 9	WK-AREA: H	PUU MOIWI					
MAP 1	WK-AREA:M1	MIDWAY					
MAP 1	WK-AREA: M	ROCKY ROAD					
MAP 1	WK-AREA: L	WEST SHORE					
HCR SITES	ARCHAEOLOGICAL SITES	ARCH & USER SITE ACCESS. SOIL DISTUR-BANCE PROHIBITED	FLAT, SLOPE, GRASS TREES BEACH & ROCK	LIMITED PERIODIC LOW IMPACT ACCESS	1 FT LIMITED ACCESS	1 FT TIER I	4
MAP 13	WK-AREA: G1	MOAULAKIKI					
MAP 14	WK-AREA: E2						
MAP 9	WK-AREA: H1	PUU MOIWI					
VEHICLE ROADS	K-1 SEA GULL CISTERN ETC	HEAVY VEHICLE ROADS	33' ROAD & SHOULDERS	PERIODIC LONG TERM	4 FT SURFACE PARKING	4 FT> EXCAVAT'N OR DISTURB'NC TIER IIB	1
MAP 7	WK-AREA: K	SEAGULL RD					
MAP 4	WK-AREA: N	CISTERN RD					
MAP 2	WK-AREA: P	SAILOR HAT					
MAPS 2-15 INCLUSIVE	WK-AREA: E	K-1 RD					
TERTIARY ROADS & TRAILS	TERTIARY ROADS	LIGHT VEHICLES & FOOT ACCESS, NO PLANNED SOIL DISTUR-BANCE	15 FT TRAIL 25 FT ROAD FLATS/SLOPE GRASS	PERIODIC LIGHT USE	4 FT SURFACE PARKING	4 FT> EXCAVAT'N OR DISTURB'NC TIER IIB	1
MAP 10	WK-AREA: I						
PLANTING AREAS & NURSERY	PLANTING AREAS	PLANTS & RE-FORESTATION PLANNED SOIL DISTUR-BANCE	FLATS & SLOPE	PERIODIC FOOT ACCESS	4 FT SURFACE AGRICUL TURE	4 FT TIER IIA	2
MAP 3	WK-AREA: S	NURSERY					
MAP 11	WK-AREA: E1	TREE FARM					

SUPPORT AREAS **MAP 7** **MAP 7** **MAP 7**	STAGING & STORAGE WK-AREA: W WK-AREA: W WK-AREA: W	OPERATIONS & STORAGE DURING CLEANUP VEHICLES MAGAZINE SSA	FLATS, SLOPE, GRASS	HEAVY VEHICLE DURING CLEANUP	4 FT> DEEPEST EXCAV'TN	4 FT> DEEPEST EXCAVAT'N TIER IIB	1
HELO PADS **MAP 11** **MAP 3** **MAP 3** **MAP 6/7**	LANDING PADS WK-AREA: E WK-AREA: S WK-AREA: S WK-AREA: K1	EXISTING PADS LZ-1 LZ-BUZZARD LZ-TURKEY LZ-SEAGULL	EXISTING LZ FLATS, GRASS, NO ADD'TL CONSTR'CT'N	REGUL'R HELO LANDING	4 FT	4 FT TIER IIA	2

Notes:

The Hakioawa and western shoreline areas from the low water mark to the high water mark will be swept and cleared to the recommended depth. Where clearance to the specified depth is not possible the actual depth of clearance will be documented together with the reason for less deep clearance. The shoreline areas are included in work areas A, B1, B2 and L. All anomalies detected below the clearance depth will be documented. Because of the constant movement of sand and rock caused by wave and tidal action, the clearance cannot support certification action.

Tier IIB areas marked with an asterisk require surface sweep and clearance to 4 FT below the maximum planned excavation/soil disturbance based upon the planned land use. If the depth of excavation/soil disturbance is unknown prior to the beginning of work in the specified area, the area will be surface swept and cleared to 4 FT only, with detector data provided for depths of greater than 4 FT where available. Disposition determination for suspected items below 4 FT will be made by an anomaly review board.

REF: DDESB 6055.9 Ch 12

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help refine and optimize data acquisition, administrative record keeping, and procedural requirements. Exceptional consideration will be employed during all phases and at all times to protect Kaho`olawe Island Historical/Cultural/Religious (HCR) sites and indigenous plant life.

5.1 Statement of Work

OHM/BPI will safely conduct surface and subsurface UXO removal operations in an effort to locate, identify, map, and dispose of all UXO in the project area in accordance with all safety and environmental requirements. The Scope and Specifications to accomplish this project are as follows:

1. Perform Surface UXO Clearance For All UXO .50 caliber and larger to include the removal of all visible metal fragments.

2. Locate by geophysical imaging or detection the following items to the corresponding subsurface depths:

UXO ITEM MINIMUM	DEPTH
20MM Projectile with Casing	11"
3" Projectile	23"
5" Projectile	35"
250 lb G.P. Bomb	48"

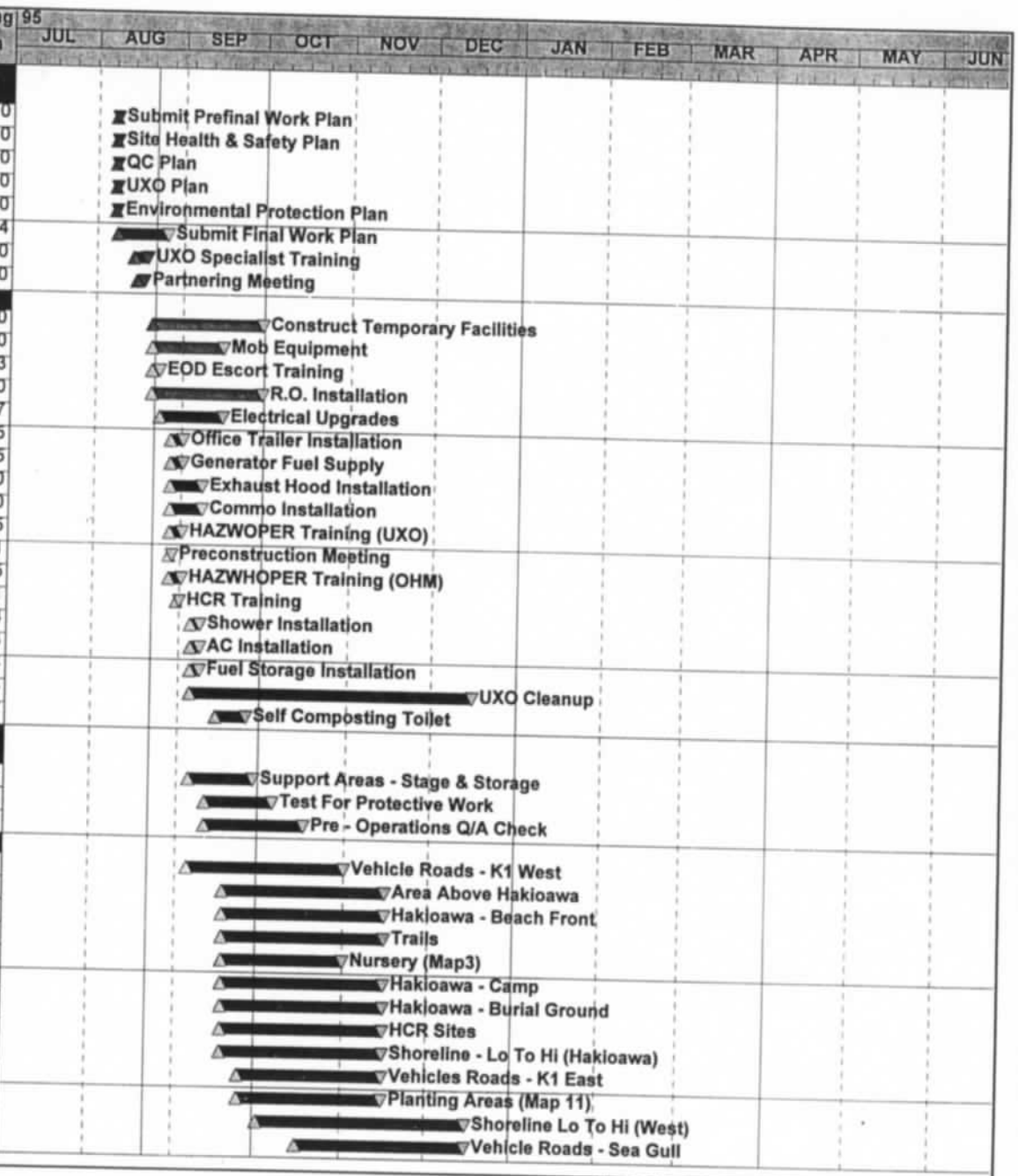
6.0 CONTRACT PERIOD AND PROJECT SCHEDULE

The contract period for the UXO model cleanup is four months. The mobilization date for operational personnel is September 1, 1995. Field operations will be concluded by December 15, 1995, immediately followed by demobilization of temporary site infrastructure which will be completed no later than December 31, 1995.

6.1 Contract Milestone Schedule

The attached time line depicts the schedule of major performance milestones. It has been prepared based on a summary of priorities established during a partnering session hosted by the Navy and the Kaho`olawe Island Reserve Commission (KIRC). The level of detail has been set to accommodate the reporting of progress for each of the contract areas identified in previous sections. Major milestones are shown in the Operations Schedule (Figure 2). These milestones are based on a production schedule of completing a visual surface search as well as subsurface geophysical investigations. Results of geophysical investigation may increase or decrease the time forecasted for deep excavations.

Activity ID	Activity Description	Early start	Early finish	Remaining duration
OHM Remediation Services Corp				
Preconstruction Submittals				
400	Submit Prefinal Work Plan	07AUG95A	07AUG95A	0
410	Site Health & Safety Plan	07AUG95A	07AUG95A	0
420	QC Plan	07AUG95A	07AUG95A	0
430	UXO Plan	07AUG95A	07AUG95A	0
440	Environmental Protection Plan	07AUG95A	07AUG95A	0
450	Submit Final Work Plan	08AUG95A	25AUG95	4
460	UXO Specialist Training	14AUG95A	18AUG95A	0
470	Partnering Meeting	15AUG95A	17AUG95A	0
Site Setup Activities				
480	Construct Temporary Facilities	21AUG95A	29SEP95	30
110	Mob Equipment	21AUG95	15SEP95	20
120	EOD Escort Training	21AUG95	23AUG95	3
490	R.O. Installation	21AUG95	29SEP95	30
20	Electrical Upgrades	24AUG95	15SEP95	17
30	Office Trailer Installation	28AUG95	01SEP95	5
40	Generator Fuel Supply	28AUG95	01SEP95	5
50	Exhaust Hood Installation	28AUG95	08SEP95	10
60	Commo Installation	28AUG95	08SEP95	10
140	HAZWOPER Training (UXO)	28AUG95	01SEP95	5
150	Preconstruction Meeting	28AUG95	28AUG95	1
160	HAZWHOPER Training (OHM)	28AUG95	01SEP95	5
130	HCR Training	31AUG95	31AUG95	1
70	Shower Installation	05SEP95	08SEP95	4
80	AC Installation	05SEP95	08SEP95	4
90	Fuel Storage Installation	05SEP95	08SEP95	4
170	UXO Cleanup	05SEP95	15DEC95	74
100	Self Composting Toilet	15SEP95	25SEP95	7
UXO				
Site Setup Activities				
190	Support Areas - Stage &	05SEP95	28SEP95	18
200	Test For Protective Work	11SEP95	05OCT95	19
210	Pre - Operations Q/A Check	11SEP95	16OCT95	26
Remedial Activities				
220	Vehicle Roads - K1 West	05SEP95	31OCT95	41
230	Area Above Hakioawa	18SEP95	15NOV95	43
240	Hakioawa - Beach Front	18SEP95	15NOV95	43
250	Trails	18SEP95	15NOV95	43
260	Nursery (Map3)	18SEP95	31OCT95	32
270	Hakioawa - Camp	18SEP95	15NOV95	43
280	Hakioawa - Burial Ground	18SEP95	15NOV95	43
290	HCR Sites	18SEP95	15NOV95	43
300	Shoreline - Lo To Hi	18SEP95	15NOV95	43
310	Vehicles Roads - K1 East	25SEP95	15NOV95	38
320	Planting Areas (Map 11)	25SEP95	15NOV95	38
330	Shoreline Lo To Hi (West)	02OCT95	15DEC95	55
340	Vehicle Roads - Sea Gull	16OCT95	15DEC95	45



Project Start	01JUL95
Project Finish	22AUG95
Data Date	22AUG95
Plot Date	30AUG95

(c) Primavera Systems, Inc.

Early Bar
Progress Bar
Critical Activity

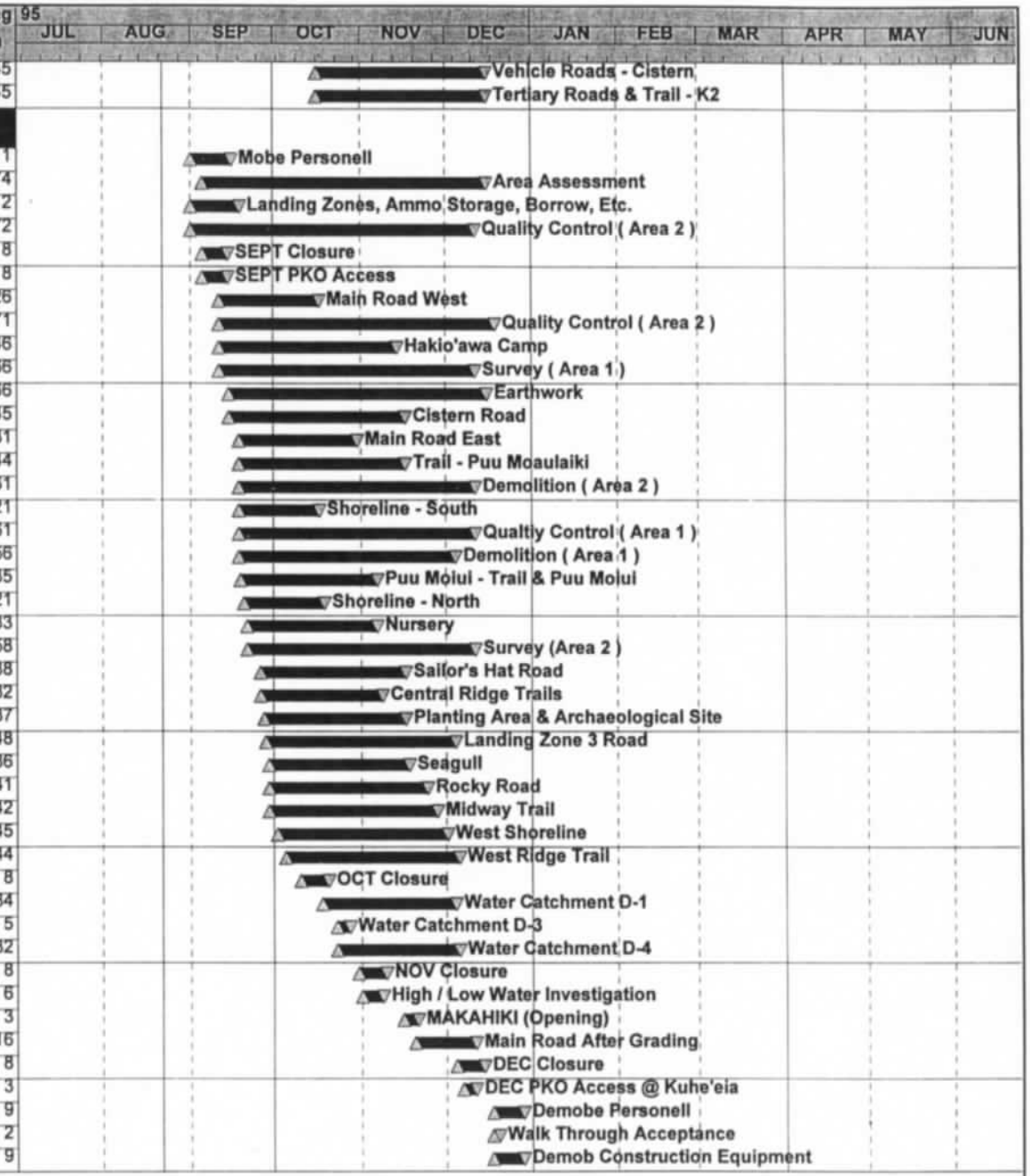
DO15

Sheet 1 of 2

PACDIV RAC
UXO Model Cleanup, Kaho'olawe Island
Draft Operations Schedule

FIGURE 2

Activity ID	Activity Description	Early start	Early finish	Remaining duration
350	Vehicle Roads - Cistern	16OCT95	15DEC95	45
360	Tertiary Roads & Trail - K2	16OCT95	15DEC95	45
BioGenesis Pacific Inc. Remedial Activities				
500	Mobe Personell	01SEP95	15SEP95	11
701	Area Assessment	05SEP95	15DEC95	74
700	Landing Zones, Ammo	01SEP95	18SEP95	12
860	Quality Control (Area 2)	01SEP95	11DEC95	72
510	SEPT Closure	05SEP95	14SEP95	8
520	SEPT PKO Access	05SEP95	14SEP95	8
710	Main Road West	11SEP95	16OCT95	26
870	Quality Control (Area 2)	11SEP95	18DEC95	71
890	Hakio'awa Camp	11SEP95	13NOV95	46
980	Survey (Area 1)	11SEP95	11DEC95	66
530	Earthwork	15SEP95	15DEC95	66
780	Cistern Road	15SEP95	16NOV95	45
720	Main Road East	18SEP95	30OCT95	31
730	Trail - Puu Moaulaiki	18SEP95	16NOV95	44
880	Demolition (Area 2)	18SEP95	11DEC95	61
900	Shoreline - South	18SEP95	16OCT95	21
990	Qualtiy Control (Area 1)	18SEP95	11DEC95	61
1100	Demolition (Area 1)	18SEP95	04DEC95	56
740	Puu Moiui - Trail & Puu Moiui	19SEP95	06NOV95	35
910	Shoreline - North	20SEP95	18OCT95	21
750	Nursery	21SEP95	06NOV95	33
850	Survey (Area 2)	21SEP95	11DEC95	58
790	Sailor's Hat Road	26SEP95	16NOV95	38
920	Central Ridge Trails	26SEP95	08NOV95	32
770	Planting Area & Archaeological	27SEP95	16NOV95	37
800	Landing Zone 3 Road	28SEP95	04DEC95	48
760	Seagull	29SEP95	17NOV95	36
810	Rocky Road	29SEP95	24NOV95	41
820	Midway Trail	29SEP95	27NOV95	42
830	West Shoreline	02OCT95	01DEC95	45
930	West Ridge Trail	05OCT95	05DEC95	44
540	OCT Closure	10OCT95	19OCT95	8
940	Water Catchment D-1	18OCT95	04DEC95	34
950	Water Catchment D-3	23OCT95	27OCT95	5
960	Water Catchment D-4	23OCT95	05DEC95	32
550	NOV Closure	31OCT95	09NOV95	8
970	High / Low Water Investigation	01NOV95	08NOV95	6
560	MAKAHIKI (Opening)	16NOV95	20NOV95	3
840	Main Road After Grading	20NOV95	11DEC95	16
570	DEC Closure	05DEC95	14DEC95	8
580	DEC PKO Access @ Kuhe'eia	07DEC95	11DEC95	3
590	Demobe Personell	18DEC95	28DEC95	9
600	Walk Through Acceptance	18DEC95	19DEC95	2
610	Demob Construction	18DEC95	28DEC95	9



6.2 Mobilization Schedule

Mobilization will commence with the procurement of services, materials, equipment and staging of resources. A team of logistics planners and procurement specialists will be assembled in Oahu and Maui for the preparation of accessing Kaho'olawe Island. Some of the team members will visit the various areas to coordinate with the Base Operating Support (BOS) contractor and to visually review existing conditions.

Simultaneously with the mobilization of the logistics team, site specific training of personnel and the presentation of training materials will occur. Arrangements have been made to utilize the Army Reserve Training Center, Fort Shafter and a similar sized location on Maui.

All personnel will be required to attend cultural training approved by the KIRC prior to access to Kaho`olawe. Depending upon a person's job assignment, additional training (UXO refresher and Hazardous Waste Operator) may be required. The first team will mobilize to Kaho`olawe September 1, 1995 to conduct preliminary assessment of a few key support areas, e.g., landing zones, Explosive Holding Area, sanitary facilities etc. Subsequent teams will be mobilized for training and then to Kaho`olawe as the operational crews build up occurs. Due to the compressed schedule for this project a rapid build up of material and personnel is anticipated.

An incremental demobilization is foreseen based on time and acreage required for excavation. As the selective pruning and surface scrap removal teams are completed within an assigned area the crews will be broken down and reassigned to support other work elements. Some members will be used to augment the subsurface excavation clearance teams. As the subsurface clearance effort is completed personnel will be further reduced. The last crew out will leave once the support facilities are disbanded and removed from the island. Operations are scheduled to be completed on December 15, 1995. Final demobilization from the island is scheduled for December 28, 1995.

6.3 Operational Schedule

The Team plans to work five, ten hour days per week in an operational shift of three waves. The waves will start at 0530, 0615, and 0700, respectively. Three quarters of an hour is allowed each morning and each evening for air transport of each crew wave that will be working in Hakio`awa and the Road Network. The crews billeted at the Base Camp will spend varying amounts of time being transported to the daily work sites. Overall, the schedule is based on an average of eight productive hours per day per person. Delay days have been built into the schedule to allow for up to one day a month of inclement weather, work rearrangement due to HCR related discoveries, reduced production rates and other unforeseen impacts. Decisions to work based on weather conditions will be governed by a safety-first attitude. Lightning and high winds may force curtailment of work for periods depending on the work in progress. Wherever possible alternative work areas will be substituted during inclement weather periods. It is imperative that the selective pruning, surface sweeps and scrap pickup be started as soon as possible so that the project will not suffer unduly from the onset of the rainy season.

The operational schedule will depend to some extent on the amount of UXO and scrap discovered. The plan is to start the surface sweeps from the base camp area and other K1 and K2 road areas and work toward the Explosive Holding Area and scrap storage point. Simultaneously a crew of surveyors, working with the HCR committee, will continue to mark HCR sensitive areas for the selective pruning. The brush crews will work pruning areas necessary to access terrain and coastline.

Surface areas will be swept with hand held instruments. When topography or vegetation prevents using geophysical equipment, selective pruning crews will be tasked to prepare the area. A conventional mag-and-flag approach will be used in shore line areas. The accessible areas which require intrusive clearance will be searched with hand held or geophysical instruments.

Anomalies detected by the mag-and-flag method will be dug each day. They will be removed or blown in place, as appropriate. Areas which are swept by the geophysical imaging method will have their data reduced, dig maps generated (X-Y tables), the anomaly staked and then dug by the excavation team. See sections of the UXO Cleanup Plan for details for the methods to be used.

6.4 Reporting Schedule

The staff at the Data Center will reduce the data, generate progress reports, and develop the next day's schedule. Updates to the overall and weekly plans will be made as necessary, to include changes in priorities, discovery of any patterns of UXO, and the desires of the HCR committee.

6.5 Weekly Schedule

A weekly schedule will be generated each Friday for the following week's work. It will reflect actual work performed to date, planned work to date, and conformity to the overall schedule. Individual work elements will be rearranged as necessary to correspond with the overall Model Action Plan (MAP) mission and to maximize work team utilization. Cross training of teams will provide flexibility in their assignments. This will allow rearrangement of the work elements with the minimum impact on overall schedule.

6.6 Daily Schedule

Daily schedules will be developed each evening at the MIS/data center. They will flow from the weekly schedule revised to incorporate each previous day's progress.

6.7 Stop Work Procedures

The OHM/BPI team is well aware of the Historical, Cultural, and Religious (HCR) importance of this project. Incorporation of the due respect and the time necessary to address HCR related concerns are not viewed as interruptions. Rather these are vital tasks which the team is planning as an integral part of our schedule. In cooperation with, KIRC, Navy, state officials and others, the team will actively and aggressively identify and address HCR concerns as early as possible and in advance of work teams. For example, one of the first teams to mobilize is the survey team that will work with the HCR committee to map and mark all sensitive sites. This will allow the follow on teams to progress without fear of disturbing known HCR sites.

As the work progresses, new discoveries are anticipated to occur. OHM/BPI is investing in up-front training of our personnel to ensure that everyone knows what to look for and what to do when an HCR site is discovered. On island supervisors will be notified immediately of an HCR discovery and an alternative work area will be assigned while the site is investigated. The cross training of the team members will allow for a smooth transition to alternative work as the HCR site is evaluated. Rather than consider these discoveries as "stop orders," the team will adopt the philosophy that an additional task has been identified and make plans to incorporate it into the work schedule while minimizing schedule impact. The work area is large enough and diverse enough that this should be a viable approach.

7.0 ORGANIZATION

7.1 Organizational Structure

The organizational structures of the OHM BPI Team are shown in Figures 3 through 5. Responsibilities assigned to project personnel are described in the following sections.

7.2 Personnel Responsibilities and Qualifications

Qualifications of UXO personnel shall be as follows: All UXO specialists shall be graduates of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. No foreign equivalent-training is acceptable. Additionally, all UXO personnel, regardless of position, shall never have been removed from an EOD position because of documented personnel reliability reasons, unsatisfactory performance of duties or safety reasons. Federal employees and military personnel shall not be employed by the Contractor in any capacity in the performance of any work under the contract, (eg., during off-duty hours, regular hours, while on leave, or during other absences from regular Federal Employment or military duty). In accordance with 29 CFR 1910.120(e), site specific personnel training certification for all UXO personnel is required. Equivalent training in accordance with 29 CFR 1910.120(e)(9) must be documented. All UXO personnel whose military active duty EOD qualifications have lapsed by a period of one (1) year or longer will also be required to successfully complete a formal Government UXO Skills and Safety Refresher Training course, including a formal written examination.

UXO Cleanup Organization

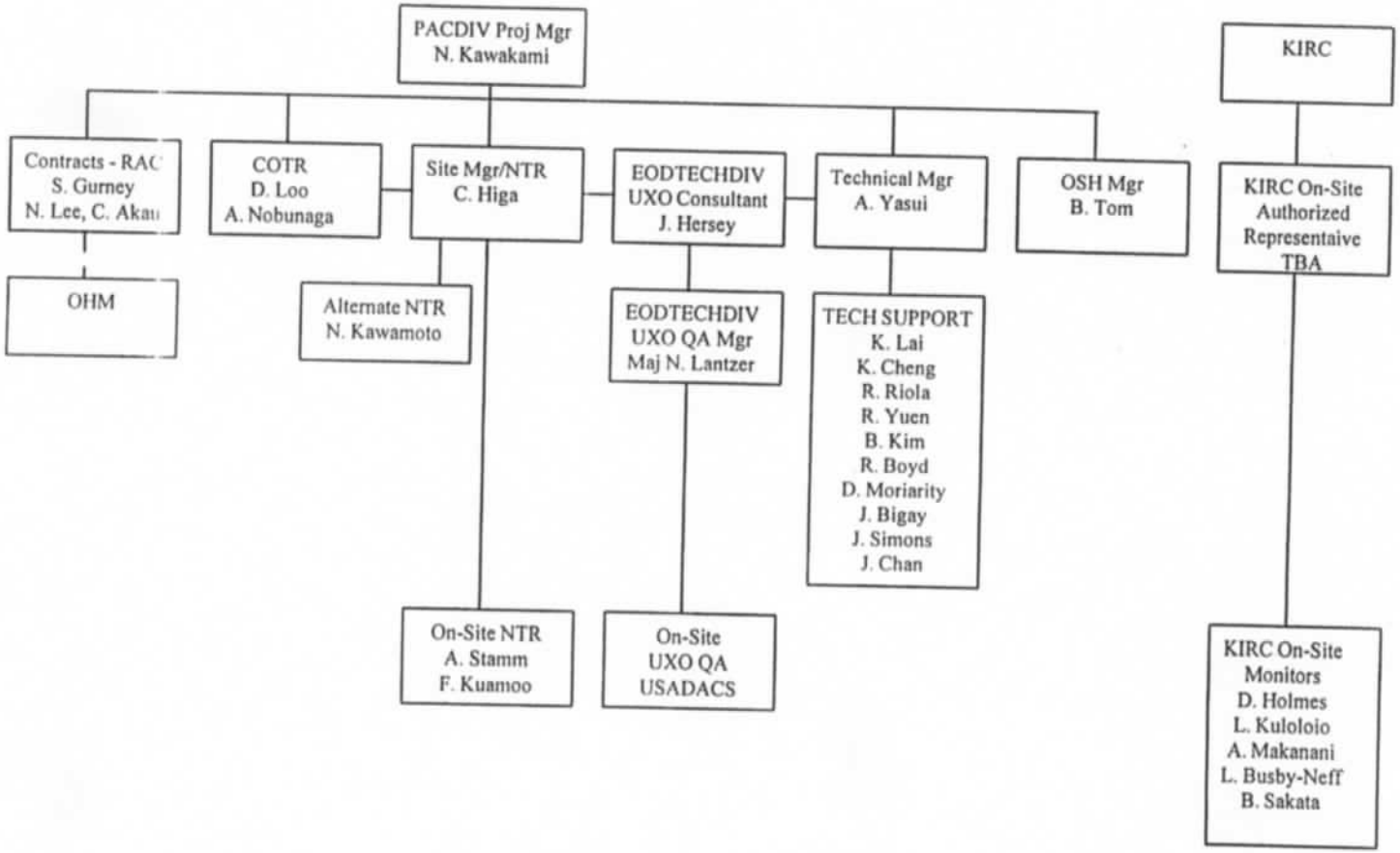


FIGURE 3

Project Management Organization

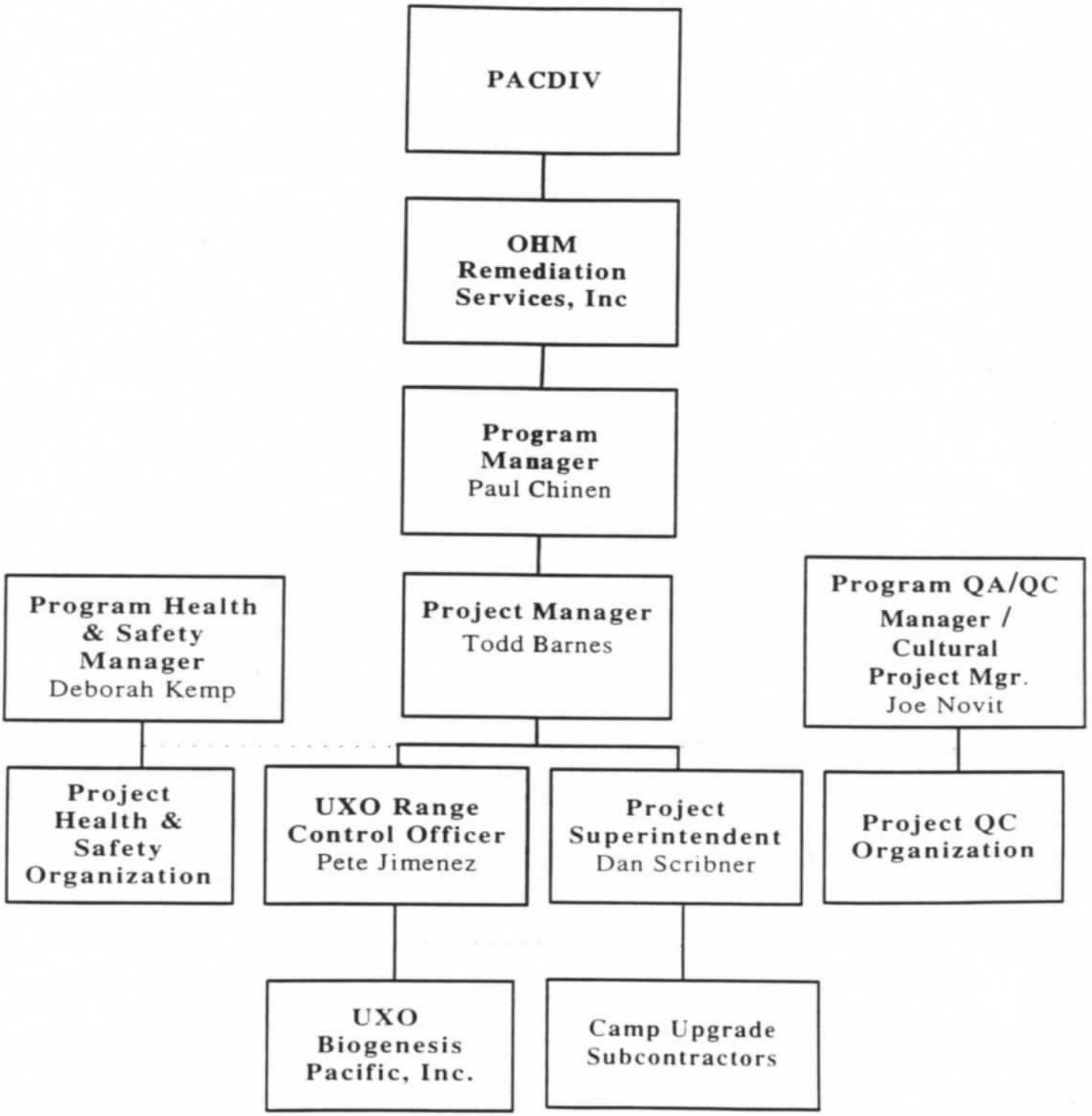


FIGURE 4

Model UXO Cleanup Project Organization

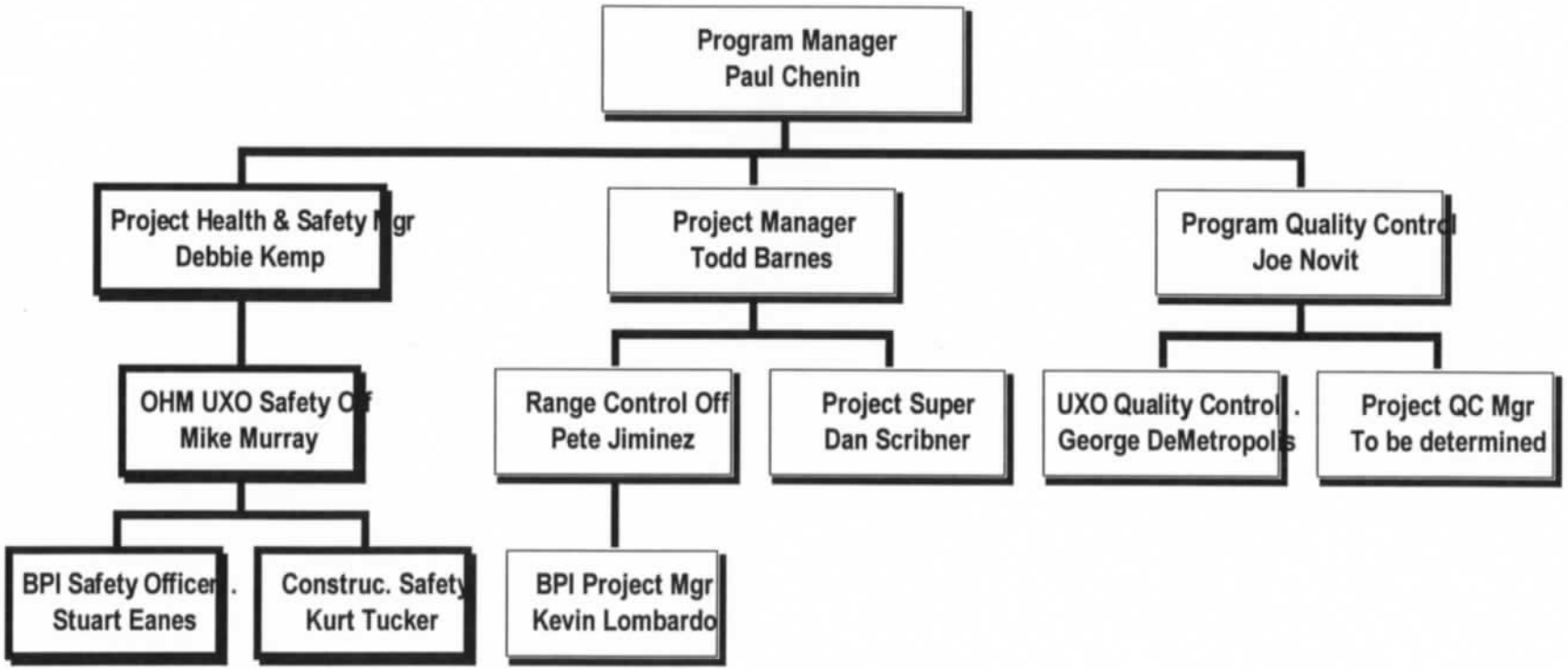


FIGURE 5

7.3 Project Management Staff

7.3.1 Project Manager (PM)

The OHM Project Manager, will be responsible for all health and safety practices performed by project personnel. The responsibilities of the PM include:

- Ensuring and enforcing compliance with the SSHP
- Ensuring entry to the Restricted Zone is controlled
- Ensuring project activities are coordinated so that they are performed in an efficient and safe manner, consistent with the SSHP
- Monitoring and revising the SSHP as necessary
- Ensuring ready access to and availability of all safety equipment

The Project Manager is directly responsible to the client's Contracting Officer for the safe and successful completion of each delivery order, task and contract deliverable. Responsibilities include: principle point of contact with client; review/coordinate/prosecute technical response to SOW objectives; develop and maintain an accurate project management database; select qualified UXO experienced personnel and subcontractors in accordance with contract terms and task objectives; coordinate task actions with team members, as required; coordinate with BPI Technical Design team during the development and editing of documents and contract deliverables to ensure conformance to SOW Objectives and standards; establish levels of effort, monitor progress and coordinate resources to ensure tasks are completed on schedule and within budget; maintain a detailed record (Operational Log, Telephone Logs, Correspondence) for each delivery order ; responsible for the security of project information; accountable for all site operations, problem resolution, and compliance issues.

7.3.2 Cultural Project Manager

The OHM Cultural project manager is responsible for the care and respect of the cultural sites, archeological sites, and natural resources. He will ensure that personnel have received the proper training to preclude any damage to "Sites" through neglect or accident. He will interface with cultural monitors, provided by the KIRC, for the correction of discrepancies within this regard. The Cultural Project Manager shall have the authority to remove from the Island those persons identified intentionally inflicting damage on HCR sites, or persons willfully disrespectful to the protocols agreed to with the KIRC.

7.3.3 Program QA/QC Manager

7.3.3.1 Duties

The Program QA/QC Manager's duties include the development and maintenance of the Program Quality Control Plan to be used as the basis for development of individual Project Quality Control

Plans. He is responsible for the selection and assignment of Project QC Managers and staff to each project within his Program(s). He monitors and audits the compliance to QC plans and corporate policies and procedures. He oversees the selection and control of suppliers and subcontractors. He provides support for Project QC Managers to ensure compliance to Program and Project requirements.

7.3.3.2 Authority

The Program QA/QC Manager has the authority to enforce the compliance to Corporate and Program, Policies, Procedures, and Plans. He has the authority to render changes to Program and Project Plans to improve the quality of products and services. He may effect the removal of persons having an adverse effect on Quality. The Program QA/QC Manager has the authority to stop work on any project when either Safety or Quality of performance is compromised, or when the furtherance of work will increase the effort for the correcting of discrepancies.

The BPI UXO Director of Compliance shall provide and oversee a BPI QC Team which will provide an independent evaluation of the control processes for this project. He is responsible to ensure the terms of this contract are met. He has the same stop work authorities as the OHM Program QA/QC Manager and will provide guidance and support to the Project Team. This individual reports directly to the President of BPI.

7.3.4 UXO Quality Control Officer

7.3.4.1 Responsibilities

This position has the direct responsibility for developing and implementing specific UXO sections of the Quality Assurance Addendum to the Program Quality Assurance Program for the Kaho`olawe Island UXO clean up in compliance with applicable State, Federal, and Navy regulations. Responsibilities include, but are not limited to:

- All quality control planning for UXO and explosive operations on Kaho`olawe Island, including monitoring the UXO Standard Operating Procedures (SOP) for all UXO related activities (electronic locating equipment calibration, verification and procedural use, search, access, identification, render safe, transportation, centralized storage, disposal, scrap certification functions, etc.)

- Analyzes, validates and ensures appropriate zones and exclusion areas surrounding UXO field activities, explosive and UXO storage sites.

- Establishment and execution of an effective explosive safety program including explosive storage, quantity-distance safety arcs, explosives inventory and issue control, explosive transportation, operational procedures, operational personnel

qualifications and certification, review and safety assessment of UXO and explosive operations, range safety control of personnel movement and operations, and fire protection for UXO and explosives operations and storage areas.

The UXO Quality Control Officer has the authority to direct the correction of any and all non-conforming work performed under this contract, and after notifying the Project Manager and/or the Range Control Officer, to stop further performance of non-conforming work or unsafe activities.

7.3.4.2 Qualifications

The Quality Control Officer (UXO Quality Control) shall have a minimum of five (5) years experience in the planning and administration of comprehensive explosive safety programs, with at least two years of that experience in the direct administration of UXO site/range safety programs. The Quality Control Officer (UXO Q/C) shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. and shall have attained qualifications as a Master EOD Technician, or have completed the prescribed training for the Quality Assurance Specialist (Ammunition Surveillance) (QASAS) career program at the U.S. Army Defense Ammunition Center and School with 15 years of QASAS operational experience, which includes conventional ammunition and one OCONUS assignment and supervisory position. Additionally, he/she shall have a minimum of 15 years experience including:

- A minimum of three (3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identifications, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Senior EOD Technician supervising EOD team operations performing UXO range clearance operations including detection, access, identifications, render safe and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Master EOD Technician administering and supervising complex multi-team EOD operations performing UXO range clearance operations including detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- Three (3) years of civilian contractor experience may be substituted for three (3) years of active duty military experience. Twelve (12) years of active duty military EOD experience including (3) years at the Master EOD Technician level cannot be waived for this position.

7.3.5 BPI Quality Control Supervisor

7.3.5.1 Responsibilities

This position has the responsibility for developing and implementing the BPI UXO Quality Assurance Program for the Kaho`olawe Island UXO model cleanup in compliance with applicable State, Federal, and Navy regulations. Responsibilities include, but are not limited to:

- All quality control planning and assurance execution elements for UXO and explosive operations on Kaho`olawe Island.

- UXO Standard Operating Procedures (SOP) for all UXO related activities (electronic locating equipment calibration, verification and procedural use, search, access, identification, render safe, transportation, centralized storage, disposal, scrap certification functions, etc.)

- Analyzes, validates and ensures appropriate zones and exclusion areas surrounding UXO field activities, explosive and UXO storage sites.

- Establishment and execution of an effective explosive safety program including explosive storage, quantity-distance safety arcs, explosives inventory and issue control, explosive transportation, operational procedures, operational personnel qualifications and certification, review and safety assessment of UXO and explosive operations, range safety control of personnel movement and operations, and fire protection for UXO and explosives operations and storage sites.

The BPI UXO Quality Control Supervisor has the authority to direct the correction of any and all non-conforming work performed under this contract, and after notifying the UXO Quality Control Officer and/or the Project Manager and Range Control Officer, to stop further performance of non-conforming work or unsafe activities.

7.3.5.2 Qualifications

The BPI UXO Quality Control Supervisor shall have a minimum of five (5) years experience in the planning and administration of comprehensive explosive safety programs, with at least two years of that experience in the direct administration of UXO site/range safety programs. The BPI UXO Quality Control Supervisor shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. and shall have attained qualifications as a Master EOD Technician. Additionally, he/she shall have a minimum of 15 years experience including:

- A minimum of three (3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identifications, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Senior EOD Technician supervising EOD team operations performing UXO range clearance operations including detection, access, identifications, render safe and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Master EOD Technician administering and supervising complex multi-team EOD operations performing UXO range clearance operations including detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- Three (3) years of civilian contractor experience may be substituted for three (3) years of active duty military experience. Twelve (12) years of active duty military EOD experience including (3) years at the Master EOD Technician level cannot be waived for this position.

7.3.6 Project Health and Safety Manager (HSM)

The Project HSM is a Certified Industrial Hygienist (CIH) with fifteen years experience. She will be responsible for review and approval of the SSHP, and will supervise and direct the activities of the OHM UXO Safety Officer and the OHM Construction Safety Officer.

7.3.7 UXO Range Control Officer

This position has the overall direct responsibility for the scheduling, coordination, control, explosive range safety and security, and execution of all UXO clearance, explosive, demolition, destruction, and disposal related operations and activities on Kaho`olawe Island. Such operations include, but are not limited to: the scheduling, coordination and control of personnel and materials movement. UXO clearance and construction activities; scheduling, coordination and control of all storage, issue, movement, and use of explosives, demolition and related materials, scheduling, coordination and control of all UXO related activities including search, access, identification, movement, render safe, demolition, thermal treatment, destruction, disposal, and storage of UXO materials; establishment, control and enforcement of safety and exclusion zones surrounding explosive holding areas, and explosive operations, and demolition.

7.3.7.1 Qualifications

The UXO Range Control Officer shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD and shall have attained qualifications as a Master EOD Technician. Additionally, he/she shall have a minimum of 15 years of EOD/UXO experience including:

- minimum of three(3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance:

- minimum of three (3) years of additional documented active duty military field experience as a Senior EOD Technician supervising EOD team operations performing UXO range clearance operations including detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance;

- minimum of three (3) years of additional documented active duty military field experience as a Master EOD Technician administering and supervising complex multi-team EOD operations performing UXO range clearance operations including: detection, access, identification, render safe, and disposal procedures on conventional air, ground and Naval gun fire ordnance;

- three (3) years of civil contractor experience may be substituted for three(3) years of active duty military experience. Twelve (12) years of active duty military EOD experience, including three (3) years at the Master EOD Technician level cannot be waived for this position.

7.3.8 Construction Safety Officer

The responsibilities of the Construction Safety Officer are:

- Monitor field construction procedures to ensure compliance with the SSHP
- Brief personnel on special hazards associated with the project operations
- Monitor the handling and control of hazardous materials
- Coordinate safety requirements with the PS, PM, and UXO Safety Officer
- Ensure maintenance of personal protective equipment
- Report monitoring results, accidents, injuries, etc. to the HSM
- Conduct routine safety inspections

The Construction Safety Officer has stop work authority for all non-UXO operations.

7.3.9 Project Superintendent

The Project Superintendent is responsible for road restoration, base camp infrastructure improvements, and construction of the Explosive Holding Area. He maintains communication with

the UXO Range Control Officer and the Project Manager. The Project Superintendent will assume the duties and responsibilities of the Project Manager when he is not on the island.

7.3.10 UXO Safety Officer

This position is responsible for the establishment and implementation of an effective explosive and UXO safety program for the Kaho`olawe Island UXO clean up in compliance with applicable State, Federal, and Navy regulations.

7.3.10.1 Responsibilities

- All safety planning and safety execution elements for UXO and explosive operations on Kaho`olawe Island.

- UXO Standard Operating Procedures (SOP) for all UXO related activities (search, access, identification, render safe, transportation, centralized storage, disposal, scrap certification functions, etc.)

- Establishment and enforcement of safety zones and exclusion zones surrounding UXO field activities, explosive and UXO holding areas.

- Establishment and execution of an effective explosive safety program including explosive storage, quantity-distance safety arcs, explosives inventory and issue control, explosive transportation, operational procedures, operational personnel qualifications and certification, review and safety assessment of UXO and explosive operations, range safety control of personnel movement and operations, and fire protection for UXO and explosives operations and holding areas.

7.3.10.2 Qualifications

The UXO Safety Officer shall have a minimum of five (5) years experience in the planning and administration of comprehensive explosive safety programs, with at least two (2) years of that experience in the direct administration of UXO range safety programs. The UXO Safety Officer shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. and shall have attained qualifications as a Master EOD Technician. Additionally he/she shall have a minimum of 15 years of EOD/UXO experience including:

- A minimum of three (3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identifications, render, safe and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Senior EOD Technician supervising EOD team operations performing UXO range

clearance operations including detection, access, identifications, render safe and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Master EOD Technician administering and supervising complex multi-team EOD operations performing UXO range clearance operations including detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- Three (3) years of civilian contractor experience may be substituted for three (3) years of active duty military experience. Twelve (12) years of active duty military EOD experience including (3) years at the Master EOD Technician level cannot be waived for this position.

7.3.11 UXO Specialist Supervisor

This position is responsible for the direct supervision of multiple UXO clearance teams who perform UXO clearance activities in the field. This position shall determine the applicability of and approve the use of equivalent UXO industry procedures. Functions supervised consist of all UXO clearance related activities and include, but are not limited to:

- Work area explosive safety.

- UXO search, detection, access, identification, movement/relocation, render safe, demolition/destruction, disposal, and storage of UXO and related materials.

- UXO safety briefings and assessments.

- The safety escort and movement control of non-UXO personnel.

The UXO Specialist Supervisor acts as the technical lead and resource for the work area level review, selections, and control of appropriate course(s) of action in the performance of UXO clearance, render safety procedures and demolition.

7.3.11.1 Qualifications

The UXO Specialist Supervisor shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. and shall have attained qualifications as a Master EOD technician. Additionally he/she shall have a minimum of 12 years of EOD/UXO experience, including:

- A minimum of three (3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identifications, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Senior EOD Technician supervising EOD team operations performing UXO range clearance operations including detection, access, identifications, render safe and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- A minimum of three (3) years of additional documented active duty military field experience as a Master EOD Technician administering and supervising complex multi-team EOD operations performing UXO range clearance operations including detection, access, identification, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- Three (3) years of civilian contractor experience may be substituted for three (3) years of active duty military experience. Nine (9) years of active duty military EOD experience including (3) years at the Master EOD Technician level cannot be waived for this position.

7.3.12 UXO Specialist

This position is responsible for the performance and execution of UXO clearance activities in the field. Job functions include, but are not limited to:

- Work area explosive safety.

- UXO search, detection, access, identification, selection of appropriate render safe procedures, rendering safe following assessment of visual evidence and extent of damage and deterioration, demolitions/destruction, movement/relocation, disposal, and storage of UXO and related materials.

- Working leadership on non-UXO qualified team personnel (e.g. UXO sweep personnel, equipment operations, laborers, surveyors, etc.)

- UXO safety briefings.

- Safety escort and movement control of non-UXO personnel.

The UXO Specialist acts as the technical leader for the work area, determining and executing appropriate course(s) of action in the safe performance of UXO clearance, render safe procedures and demolition, and insuring the safe conduct of all UXO and non-UXO operations at the work area.

7.3.12.1 Qualifications

The UXO Specialist shall be a graduate of the Naval Explosive Ordnance Disposal (EOD) School, Indian Head, MD. and shall have attained qualifications as a Senior EOD technician. Additionally he/she shall have a minimum of five (5) years of EOD/UXO experience, including:

- A minimum of three (3) years of documented hands-on active duty military field experience as an EOD Technician performing UXO detection, access, identifications, render safe, and disposal procedures on conventional air, ground, and Naval gun fire ordnance.

- Additional documented active duty military field experience as a Master EOD Technician is desirable.

- Two (2) years of civilian contractor experience may be substituted for two (2) years of active duty military experience. Three (3) years of active duty military EOD experience at the EOD Technician level cannot be waived for this position.

- UXO Specialist personnel who function as ordnance detection instrument operations shall be required to demonstrate minimum detection proficiency to the satisfaction of the Government.

7.3.13 Sweep Personnel

Sweep personnel shall operate only under the direct field supervision of qualified UXO Specialists and/or UXO Specialist Supervisors. Sweep personnel conduct visual and/or instrumented UXO search activities in the field, and operate ordnance detection instruments and similar equipment. Sweep personnel remove UXO and fuze remnants, fragments and debris only after such items have been positively identified, inspected and verified as safe by a qualified UXO Specialist. Sweep personnel assist UXO Specialists in the clearance of UXO, but do not meet the minimum qualifications of a UXO Specialist and shall not be permitted to perform UXO Specialist tasks.

7.3.13.1 Qualifications

Sweep personnel will be required to successfully complete formal contractor conducted ordnance familiarization, UXO safety and UXO sweep skills training, including a formal written examination - Sweep personnel who function as an ordnance detection instrument operator shall be required to demonstrate minimum detection proficiency to the satisfaction of the Government.

- Although not required, completion of active duty military training as an EOD technician or assistant is desirable (6 months Navy EOD School, Indian Head, MD.; 10 week EOD Assistant course, Redstone Arsenal or Eglin AFB).

8.0 SAFETY AND ORIENTATION

All personnel performing work on Kaho`olawe Island will attend approved HAZWOPER training, HCR and UXO orientations and other job related training prior to accessing Kaho`olawe Island. Personnel will provide training certificates as requested to the Range Control Officer prior to access to the Island.

8.1 Indoctrination

Indoctrination will be based on the site specific safety issues at Kaho`olawe Island and the tasks to be performed. All personnel will be provided an overview of the objectives and be required to read and acknowledge understanding of the work/safety plan and be briefed on the daily operations to be conducted to meet the task objectives. Personnel will keep the lines of communications between the Navy, KIRC, OHM, and field operations personnel and supervisors open to permit the free flow of information and exchange of ideas to enhance operations and ensure the protection of HCR sites.

8.2 Training

Personnel assigned to or entering the project site will have received the required training listed within the Safety Plan to safely conduct the operations at Kaho`olawe Island. Specialized, site-specific training will be documented. The following sections detail the minimum training requirements.

8.2.1 HAZWOPER

The following applicable HAZWOPER training is required for all personnel assigned with actual work area activities:

- Exclusion Zone - Health and Safety Training - All personnel shall have participated in a 40 hour comprehensive training course that complies with the provisions of OSHA 29 CFR 1910.120, along with any applicable additional training.

- Annual Refresher - Annual refresher training will be accomplished if the initial 40 hour training is older than one (1) year.

- Supervisor Training- Supervisory personnel shall receive 8 hour supervisory training in accordance with 29 CFR 1910.120.

8.2.2 Helicopter Crew Briefing

Because a variety of helicopters will be providing service in support of this operation, specific helicopter briefings will be conducted by the helicopter crew prior to take-off. This training will include but not be limited to water landings, access and egress, in-flight communications and long-line safety.

8.2.3 Base Camp Operations Briefing

Base Camp for this project is located at Honokanai'a (Smuggler's Cove). The Base Operation Support (BOS) contractor will manage operations of the base camp. All personnel will receive a base camp operations briefing to consist of information relating to safety, berthing, messing, support services, and swimming/fishing.

8.2.4 Kaho`olawe Island Rules and Regulations and Archaeological, Natural Resources Protection

Personnel will receive an extensive briefing concerning the authorized behavior for the island. A briefing for archaeological and Natural Resource Protection of Kaho`olawe Island and its waters will be provided by OHM to all contractor personnel.

8.2.5 Historical, Cultural, Religious

Cultural training will consist of Historical, Cultural, Religious (HCR) information pertaining to Kaho`olawe. This training will be provided in conjunction with the KIRC, Navy, and Contractor instructors.

8.2.6 UXO Orientation

All personnel visiting the Island will view a video tape covering site-specific ordnance awareness and safety training. This training will be provided by OHM prior to or on Kaho`olawe immediately upon entering the base camp.

8.2.7 Kaho`olawe Ordnance Briefing

Clearance personnel will receive daily an extensive Explosive Ordnance reconnaissance (EOR) briefing outlining the munitions (bombs, projectiles, rockets, guided missiles, flares) and other ordnance items that have been dropped, fired, or dispensed over the island. This briefing will be required each AM during the tailgate safety meeting.

8.2.8 Hazard Communication Briefing

On-site personnel will receive a hazard communication briefing in accordance with Federal, State and local regulations directly affecting activities on Kaho`olawe. This training will include the Work Plan, specific MSDSs; the physical and health hazards of on-site chemicals; protection methods for these chemicals; and methods of observation\detection of these chemicals.

8.2.9 Explosive Safety Briefing *and Considerations for UXO Operations.* This document will be used as basic guidance for UXO Specialists. During field operations UXO Specialists have the authority to use their best field judgement during excavation operations to safely identify UXO.

8.2.10 UXO Specialist Briefing

Prior to the commencement of UXO operations, a briefing will be given to all UXO Specialists by the UXO Specialist Supervisor or the senior ranking UXO specialist. This briefing will cover the following topics:

- Pride, professionalism, good order, and discipline.
- Base Camp operations, rules and regulations, MEDEVAC procedures, evacuations and communications procedures.
- SOPs
- Specific operations (construction)
- Schedule of events.

8.2.11 UXO Specialist Update

All UXO personnel whose military active duty EOD qualifications have lapsed by a period of one (1) year or longer will also be required to successfully complete a formal Government UXO Skills and Safety Refresher Training course, and pass a formal written exam. This training will include ordnance identification, demolition, search techniques, command and control, emergency notifications and explosive safety. This course was developed and is controlled by NAVEODTECHDIV.

8.2.12 Ordnance Clearance Operations Briefing

Prior to participating in clearance operations, personnel assigned to clearance duties will receive an Ordnance Clearance Operations Briefing. This briefing will outline the procedures specified in Annex A of this plan.

8.2.13 Vehicle Safety Briefing

Personnel will receive a briefing concerning the safe use of all vehicles operated on Kaho`olawe Island. This briefing will include operator check-out and emergency shut down procedures for construction and other power equipment working within the designated area of operations

8.2.14 Morning Safety Briefing

Prior to commencing work each day, all personnel entering the site will be provided a safety briefing conducted by the appropriate OHM or BPI Safety Officer (SO). The SO on either Maui or Kaho`olawe Island will conduct identical format site specific AM safety briefings that will include, as a minimum, E.O.R. and potential hazards and risks associated with the island and confirmed encounters with hazardous materials to date. Briefings will be documented and the records will be maintained in the appropriate Safety Officer's file.

As the project progresses, the briefings will include refreshers in the use of safety equipment, emergency medical procedures, emergency assistance notification procedures, accident prevention and work plan objectives.

8.2.15 Information Disclosure

Contractor Team personnel will not disclose any information or generated data under this contract to the media or general public without the consent of OHM and the Navy Contracting Officer. All Contractor Team personnel, including employees working on this project as of the Date of Award (DOA) on or off-island, will be required to sign an OHM Remediation Services Corp. Nondisclosure Statement Form. Completed forms will be returned to the OHM Quality Control Manager.

8.2.16 Site Visitors Briefing

Personnel visiting the island to observe the clearance operations will receive the applicable training and orientation briefing listed above. This will include a site specific video to be viewed prior to entry to the Restricted Zone. Visitors will be required to present their names, Social Security Numbers and duration of time on the Island.

The OHM Project Superintendent and Range Control Officer will be notified of the planned visit, number of visitors in the party, duration, and purpose of the visit. All hazardous UXO activities will halt while visitors are present. Visitors to a specific area will receive a safety briefing outlining the tasks being performed and the hazards present at that location. Visitors will be briefed on the boundaries of the work areas and the exclusion zones and the procedures for entrance and exit from same. Emergency evacuation procedures and assembly points will be addressed. Any necessary protective clothing items will be provided to the visitors prior to entering the area. OHM will be responsible for providing protective clothing for contractor visitors. The Navy will provide protective clothing for other non-contract related personnel.

9.0 LOGISTICS AND SITE MANAGEMENT

OHM/BPI shall provide all resources to support Restricted Zone activities, including heavy equipment requirements, and perform all related and incidental tasks to effect cleanup of UXO within areas designated in accordance with this SOW.

9.1 Site Logistics

UXO clearance may include UXO safe procedures, detonation in place, transport, or fencing UXO left in place. Moveable UXO shall be transported to designated UXO staging areas. The cleanup will not involve any disposal of ammunition and explosives by land burial, or by discharge into watersheds or waterways. Final disposition of the UXO that has been relocated to designated staging areas is not part of this contract. All debris that is foreign to Kaho'olawe Island, i.e., ordnance material, ordnance debris, small scrap metal, etc., shall be transported to and staged at designated site(s) for disposal by others. Large objects foreign to Kaho'olawe Island, i.e. targets and old tires shall be transported after they have been declared free of unexploded ordnance. OHM will provide latrine facilities which will be used by all personnel in lieu of the natural surroundings. A medical treatment tent for personnel and conex containers will also be provided for the use of tool storage in Hakio'awa.

9.1.1 Personnel Transportation to Kaho`olawe Island

Employees will be housed in either Maui or on Kaho`olawe Island. Daily, helicopter transportation between Maui and Kaho`olawe Island (Hakio`awa Area) will be provided for employees living on Maui.

9.1.2 Explosives Transportation to Kaho`olawe Island

All explosives shall be transported by barge or helicopter to Kaho`olawe Island.

9.1.3 Transportation on Kaho`olawe Island

OHM/BPI shall provide on-island transportation for employees, equipment, and materials. The primary method of island transportation will consist of ground vehicles. If ground vehicle transportation becomes impractical, OHM/BPI will coordinate helicopter transportation.

9.1.4 Demolition Material Transportation on Kaho`olawe Island

Transportation of demolition materials on Kaho`olawe Island will be accomplished in a vehicle operated by a UXO Supervisor or Specialist as driver with a UXO Specialist rider. There will be no concurrent transportation of additional passengers and demolition materials. When it is necessary to transport blasting caps and other demolition materials in the same vehicle, the blasting caps will be transported in a MK 663 container located in the forward compartment of the vehicle, with the remaining demolition materials in the rear compartment of the vehicle. While in the field, explosives will be stored in an area out of the direct rays of the sun that will provide ventilation. (A tarp or poncho can be rigged as shelter for the explosives). Blasting caps will be removed from the MK 663 container only immediately prior to commencing demolition operations. Non-electric blasting caps will be carried in a wooden or plastic 10 cap box from the field storage area to the demolition area. The nonelectric, cap container will be secured in a padded ammunition can in the rear of the vehicle.

9.1.5 Fuel Supply Procedures

MOGAS and diesel fuel will be available within the Honokanai'a Base Camp. Fuel requirements for clearance operations based out of the Hakio'awa Area shall be supported by OHM/BPI. BPI Team shall have a fuel supply at the Hakio'awa Area. Fuel will be stored in 55 gallon drums with pump handles contained within an outer 85 gallon overpack drum for spill control.

9.1.6 Messing

The BOS contractor will provide messing from the Galley for approximately 50 OHM/BPI personnel. (BPI will provide food for all other team personnel). All personnel who receive per diem allowance (i.e. government employees and military personnel) will pay for meals in the galley. All others will

record their meal pass number on the sign-up sheet for each meal. Requested meal hours are:

Meal Hours: Breakfast: 0445 - 0630
Lunch: 1100 - 1300 or to be picked up for field activities
Dinner: 1800 - 2000

Hut 13 - Galley
Hut 29 - Chow Hall - Berthing for cooks in rear of building used as dining facility

- Food will be refrigerated regardless of perishability, due to ants and mice. Canned goods are exempt.
- The galley will be locked or manned at all time.

9.1.7 Billeting

Butler buildings will be used to facilitate OHM contractor berthing in Huts 11 and 12.

Female berthing area is off limits to all males.

All bedding is to remain inside the buildings and not to be used for sun bathing or as cushions in the trucks.

No eating in bed, crumbs attract ants and mice.

9.1.8 Equipment Storage

Provisions will be made to store equipment in CONEX boxes at Hakio`awa or in the existing building at Landing Zone Seagull.

9.1.9 Island Access and Housing

The U.S. Navy controls personnel access to Kaho`olawe Island. OHM shall provide island access notification to the Navy Technical Representative (NTR) for all access and housing/meal requirements. Notification must include, but not be limited to, the names, social security number, and duration on island.

Employees will be housed in either Maui or on Kaho`olawe Island. Daily, the contractor shall provide helicopter transportation between Maui and Kaho`olawe Island (Hakio`awa Area) for employees living on Maui, to include equipment, and materials.

Employees housed on Kaho`olawe will be located at Honokanai`a (Smuggler's Cove).

9.1.10 Base Camp Operation

Use of the base camp facilities will be discussed in detail by the BOS contractor in the initial base camp briefing. Laundry facilities are not available; all individuals must plan accordingly. Shower and latrine facilities do exist. Fire drills will be performed within the base camp per the BOS contract.

To maintain orderly and sanitary conditions and to preserve government facilities and property within the base camp, the base camp manager will inspect the buildings on a regular basis.

9.2 Site Management

9.2.1 Communications

9.2.1.1 Communication and Check-out Procedure

A reliable communication link between all field teams will be maintained during field operations. Teams will conduct radio checks prior to commencing daily operations and throughout the course of the workday. Teams experiencing communications failures will cease work until communications are restored. Communications system used for internal use will be the Motorola HT 1000 radio, or equivalent. A call sign status board will be maintained by the Range Control Officer.

9.2.1.2 Team Radio Call Signs

Team radio call signs will be established in coordination with the OHM communication net.

9.2.2 Communication Plan

9.2.2.1 General

Radio communications will be the primary mode of communication. The alternate will be cellular phone. The communication system will be easily accessible to all persons at specific locations and/or work areas and will be tested each morning prior to commencing any operations.

9.2.2.2 Project Communications

Island communications among all work crews, the medical evacuation helicopter, Navy representatives, the MICT, and the OHM Command Center will be by radio. Communications shall be tested daily prior to the commencement of work.

9.2.3 Evacuation Procedures

Evacuation from work areas, if required, will be directed along approved paths. During evacuation, any equipment left will be placed so as not to impede emergency escape and evacuation along cleared

pathways. Evacuation routes from each work area will be discussed by the work supervisor as part of the daily briefing.

9.2.4 Other Emergency Services

For other emergency services, each work crew will have radio communications with the OHM Command Center, who will contact other emergency response personnel as required.

9.2.5 Security

When not in use, all equipment will be secured.

9.2.5.1 Demolition Materials

Security of demolition materials on Kaho`olawe Island is discussed in Annex A.

9.2.6 Rest and Relaxation

Limited Morale, Welfare, and Recreational (MWR) activities for personnel housed in the Base Camp. Some forms of entertainment and recreation are videos, magazines, a small library, horseshoes, checkerboard games, weight lifting equipment, and volleyball. Swimming activities are limited and are allowed only at the beach area of the base camp at Honokanai`a. Fishing is also limited and is governed by KIRC rules.

9.2.7 Trash Collection and Removal

Waste materials, such as trash and general debris, will be placed in dumpsters and disposed of in accordance with applicable regulations.

9.2.8 Site Housekeeping

Employees are encouraged to use good housekeeping procedures so as to discourage ants and mice. No maid service is available in Maui or Kaho'olawe Island.

9.2.9 Smoking Policy

Smoking is only permitted in front of each hut and at the picnic table with butt kits.

There will be no smoking in the buildings.

There shall be no smoking while in transit from the camp to the sweep area. While in the field, smoking is only allowed during designated breaks in areas specifically designated for such activity. Place cigarette butts in recepticals -- not on the ground.

9.2.10 Prohibited Activities

Firearms and alcohol are prohibited on Kaho`olawe Island.

9.2.11 Ordnance Safety Escorts

Due to the hazardous nature of transiting most of Kaho`olawe island, UXO escorts are required to ensure safety during the transit of persons being escorted. This will be accomplished by visually scanning the area in the immediate path of the escorted party and redirecting the party as necessary to avoid unexploded ordnance and other hazards. The escort must tactfully control the escorted party to ensure that they do not become spread apart or wonder off beyond the UXO escort's control and that they do not endanger themselves or others. If the escorted party refuses to obey the recommendations of the UXO escort to a point where safety is jeopardized, the island all operations will halt and the Range Control Officer notified.

9.2.12 Protect Kaho`olawe Ohana (PKO) and KIRC Access Periods

During most ceremonial access periods, the Navy will be responsible for PKO/KIRC escorts on Kaho`olawe Island. These personnel may be supported by additional UXO personnel as necessary to cover hikes or other escort requirements during the access period. A joint coordination meeting between OHM and the Navy escorts will be conducted prior to the access.

During Protect Kaho`olawe Ohana (PKO)/KIRC activities and during the November Makahiki, all contractor access activities in the Hakio`awa area will cease.

9.2.13 Areas Requiring Entry by Females Only

Women crew members will be used for clearance of the Women's Hei`au within the Hakio`awa area.

9.2.14 Independent Monitoring by KIRC

KIRC will provide independent monitoring during this model UXO cleanup project. Every effort will be made to coordinate our planned work activities daily with the on-island representatives from the KIRC and the Navy ROICC.

9.2.15 Base Camp Operations Schedule

The base camp is manned by camp caretakers seven days a week. Saturday and Sunday meals are only available with prior coordination.

9.2.16 Regulatory and Administration Considerations

The Model Cleanup is a pilot project which will test the feasibility and effectiveness of a number of

technologies, processes, and procedures and to gather information and data to be utilized in the development of the omnibus UXO cleanup plan. It is intended that the actual on-island UXO cleanup will occur within a 120-day period.

10.0 PUBLIC AFFAIRS

OHM/BPI will cooperate fully with the Navy Public Affairs Officer and assist in gaining public support for this operation. If requested, OHM will provide an overview of the proposed action, anticipated results, and other details deemed appropriate.

OHM/BPI will not make available or publicly disclose any data generated or reviewed under this contract or any subcontract unless specifically authorized by the Navy. When approached by any person or entity requesting information about the subject of this contract, personnel will defer to the Navy. All press releases/media appearances will be coordinated with, and approved by, the Navy in accordance with the terms agreed to in the Partnering Session with the KIRC.

OHM /BPI will assist the Navy in developing and executing their public affairs program. If requested, OHM/BPI will assist in conducting a public meeting and a Media Day to inform the public of the purpose of the project, the procedures to be followed, and the cooperation requested. As necessary, OHM/BPI will generate a Meeting Record Form to reflect the attendees and their questions and answers. The Meeting Form will become part of the Final Report.

Reports and data generated under this contract shall become the property of the Government; distribution to any other source is prohibited, unless authorized by the Navy.

APPENDIX 1
Resumes - Key Personnel

Todd C. Barnes, P.E.

[redacted]
Aiea, Hawaii 96701
Office tel. (808)682-1616, ext. 503

CIVIL AND ENVIRONMENTAL ENGINEER

Education: Registered Professional Engineer
M.S., Civil Engineering, University of Colorado
Masters of Business Administration, Chaminade University of Honolulu
B.S., Civil Engineering, Virginia Polytechnic Institute and State University
Senior leadership and management of large-scale operations, Command and General Staff College
Specialized Training: Hazardous toxic radiological waste program management, environmental laws and regulations, U.S. Army Corps of Engineers courses
Hydrologic and non-point pollution modeling, University of Maryland

Experience: Twenty years with the U.S. Army Corps of Engineers, the last fourteen years leading environmental programs, design, construction, master plan development, information management, contract development, and program and project supervision. Directing the development of contract policies, specifications, and construction management for a diverse design, construction and environmental program. Identifying and evaluating technical deficiencies and field problems. Monitoring design development, construction schedules, budgets, resources, and quality. Estimating costs and materials. Negotiating with architectural-engineering firms and general contractors.

Specialization: ***Environmental Engineering*** - Policy formulation for the Department of Defense Environmental Restoration Program to include Installation Restoration Program, Formerly Used Defense Sites, and Base Realignment and Closure (BRAC); direct support of EPA's Superfund program; detection and removal operations of conventional and chemical ordnance at two sites within the District of Columbia; wetlands regulatory, and water resource management programs. Senior program director within a Corps of Engineers district for the environmental program during its over 40% expansion. Knowledgeable of environmental laws and regulations.

Program Management - Supervision of a team of engineers, lawyers, financial managers, and contract specialists in developing comprehensive contracting strategies for $180 million annual design and construction program. Leading acquisition strategy teams to formulate innovative contracts utilizing a full range of legal instruments including firm fixed price, negotiated cost reimbursable contracts, and fast-track design/build contracts. Interpreting engineering design and construction policies, guide specifications, quality assurance, and construction management issues as liaison between Corps of Engineer districts, divisions and the Washington headquarters. Negotiating and administering contracts, developing scope, and reviewing design products in support of public works for all DOD elements throughout the Pacific.

Project Accomplishments: (1) Within three weeks of a major hurricane, negotiated and awarded over $20 million of emergency contracts to restore public services and repair damaged infrastructure. (2) Executed a complex and dynamic $180 million design and construction program consistently on time and within budget. (3) Provided leadership for contract administration and quality assurance on a $200 million hospital construction project, resulting in the first Army hospital project with no claims. (4) Increased the construction saving to an army installation by $2.5 million while chief operating officer for a 650 person construction engineer battalion involving all aspects of design, construction, and logistics. (5) Saved $300 thousand through early identification of design deficiencies on a hospital construction project. Supervised the development of an information management and computer aided drafting and design system used for conflict resolution. (6) Successfully developed a complex interagency agreement, as co-chairman of a BRAC task force, specifying all actions and resources for the operation, maintenance and disposal of a major Army installation. (7) Coordinated the headquarters actions of highly sensitive chemical ordnance detection, intrusive and removal operations in an affluent section of the District of Columbia. Also coordinated the headquarters actions for detection, destruction or removal operations of conventional ordnance at an abandoned firing range within a park area in a highly populated poor section of the District of Columbia.

Professional Affiliations: Registered Professional Engineer since 1981; Member, American Society of Civil Engineers; Member, Society of American Military Engineers.

JOSEPH T. NOVIT
[redacted]
Honolulu, HI 96817
Ph. [redacted]

OBJECTIVE:

Continuous involvement in Quality Assurance, Safety, or Environmental Management.

EXPERIENCES:

CONSULTANT, QUALITY ASSURANCE, SAFETY & ENVIRONMENTAL
J. T. NOVIT, CONSULTING (License # 17606), San Marcos, CA 1993 - Present
(License # 10519072), Honolulu, HI 1994 - Present

The benefits of my experiences are offered, on a contract basis, to support new start-up efforts as well established companies. Provide independent evaluation of existing quality systems or new program quality requirements, and design and implement the most economical system which will comply with both customer requirements and company policies. Quality management, engineering, supplier evaluations and control, design reviews, product evaluation, and presentations to customers are some of the areas supported.

Industrial Safety and Environmental Compliance support is provided for each clients top management. This support comes in the form of documentation of plans and procedures, record keeping, control of hazardous materials, training , permits, and site inspections and interface with local, state, and federal agencies.

MANAGER, PRODUCT ASSURANCE, SAFETY & ENVIRONMENTAL
MARTIN MARIETTA CORPORATION, San Diego, CA 1990 - 1994

STAFF ENGINEER, PROJECT PRODUCT ASSURANCE
TRW MEAD, San Diego, CA 1987 - 1990

SENIOR QUALITY ENGINEER, PROJECT PRODUCT ASSURANCE
LORAL SYSTEMS GROUP, Akron, OH 1980 - 1987

Managed Product Assurance resources from varying perspectives, from program lead quality engineer to functional departmental management. Transitioned major government and commercial programs from design, through the development phases, and into production.

Operated from an active participation position to maintain hands-on, real time data on the products, processes, and people. Participated in design reviews and product verifications as well as the development of quality plans and procedures. Actively participated in supplier surveys, audits, and product acceptance. Very strong mechanical background in machining and welding technologies as well as electronic microcircuit, hybrid, and printed circuit assembly (PCA) manufacturing processes and acceptance criteria.

Although the major part of my quality experiences have been in response to DoD requirements such as MIL-Q-9858A and MIL-STD-45208, I have also been involved with programs requiring Good Manufacturing Processes (GMP), ISO 9000, and "Best Commercial Practice", as quality program guidelines. Quality systems were tailored specifically for each program or contract. Tailoring provided for the coexistence of both commercial and DoD standards without the traditional cost implications of the more stringent requirements.

Established the Environmental and Industrial Safety program currently at Martin Marietta. This program has successfully survived the scrutiny of numerous local and state government audits as well as corporate reviews. The program includes the Employee Injury and Illness Prevention Plans, Prop 65 awareness training, Emergency Response Business Plans, Contingency Plans, and a multitude of permitting requirements and training. The system also controls hazardous materials from purchase to destructive disposal, eliminating any risk of latent liabilities.

I've held clearances, issued by Defense Investigative Service Company and I maintain an active membership in the San Diego Chapter of American Society for Quality Control (ASQC).

MILITARY SERVICE:

U. S. NAVY (HONORABLY DISCHARGED)

EDUCATION:

BBA, (Cum Laude) **National University**, San Diego, CA
Major: Management
AA, **San Diego Evening College**, San Diego, CA
Major: Industrial Supervision
Stout State University, Menomonie, WI
Major: Industrial Arts Education
Kamehameha Schools, Honolulu, HI

ADDITIONAL TRAINING & CERTIFICATIONS:

Mil STD 2000A High Reliability Solder Processes, Category C
Configuration Management
Electrostatic Discharge Control
Materials Resource Planning (MRP)
Supplier Control
Measurement Assurance
Hazardous materials emergency response team member and leader certified
First aid and CPR certified
ASQC Certified Quality Engineer (CQE) training class

REFERENCES:

Available on request.

Although the major part of my quality experiences have been in response to DoD requirements such as MIL-Q-9858A and MIL-STD-45208, I have also been involved with programs requiring Good Manufacturing Processes (GMP), ISO 9000, and "Best Commercial Practice", as quality program guidelines. Quality systems were tailored specifically for each program or contract. Tailoring provided for the coexistence of both commercial and DoD standards without the traditional cost implications of the more stringent requirements.

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ADDITIONAL TRAINING & CERTIFICATIONS:

Mil STD 2000A High Reliability Solder Processes, Category C
Configuration Management
Electrostatic Discharge Control
Materials Resource Planning (MRP)
Supplier Control
Measurement Assurance
Hazardous materials emergency response team member and leader certified
First aid and CPR certified
ASQC Certified Quality Engineer (CQE) training class

REFERENCES:

Available on request.

PERSONNEL EXPERIENCE FORM

NAME: Dan Scribner **JOB TITLE:** Site Supervisor
PROPOSED PROJECT TITLE: Site Superintendent
YEARS EXPERIENCE WITH PROPOSING FIRM: 1
YEARS EXPERIENCE WITH OTHER FIRMS 4

EDUCATION:
——

ACTIVE REGISTRATION
——

HEALTH AND SAFETY TRAINING
40-Hour OSHA HAZWOPER, 1989
8-Hour Annual Refresher, 1994
Hazardous Chemical Handling, 1991
Hydroblast Operators School, 1990
First Aid & CPR, 1994
Confined Space Entry, 1993
Emergency Response, 1992
Pitman Crane, 1989
Rail Car Safety, 1994

PROJECT EXPERIENCE:

PROJECT	PROJECT JOB TITLE	TIME ON
United Airlines	Site Supervisor	7 months
Chevron	Site Supervisor	2 months
Midway Island	Site Supervisor	2 months
Emergency Response, Southern Pacific	Site Supervisor	1 week
Southern Pacific Fresno	Site Supervisor	1 week

EXPERIENCE AND QUALIFICATIONS:

Mr. Scribner is a hazardous materials specialist with over four years experience in the handling, transportation, treatment, and disposal of hazardous materials and hazardous wastes. Skilled in emergency response, industrial decontamination, plant closure, soil remediation, and storage tank removal; planning and supervision over all aspects of environmental projects, including site assessments, cost estimating, on-site task supervision, on-going safety planning, status updates, client interface, and closure reports. Well versed in state and federal guidelines and regulations regarding hazardous materials and hazardous waste.

SELECTED PROJECT EXPERIENCE:

Mr. Scribner has provided technical support for site assessments to determine the hazardous materials present and the regulatory requirements for remediation and disposal. He has also provided supervision and technical support for emergency response teams. Mr. Scribner has supervised handling, transportation, and disposal activities. He is responsible for on-site management of remediation projects and consulting on industrial wastewater treatment.

- Supervised the removal of chemical wet stations, associated process piping, air scrubbers and all associated ducting also were removed throughout a micro-processing plant in Santa Clara, California. Underground storage tanks and above ground chemical storage vaults were removed and disposed of. Everything removed was decontaminated on site with power

washers to lower disposal cost. After full decontamination of everything on site, identification sampling was completed to determine disposal methods. Acid waste neutralization system was then removed and disposed of accordingly. bulk chemicals used in the treatment (sodium hydroxide, sulfuric acid) process were dealt with.

- Vapor Extraction System Oakland, CA. Oil company pumping station suffered major railway tanker spill of over 30,000 gallons of toluene. This spill contaminated adjoining land owned by others who recently has sold this property for construction of a warehouse. To keep from holding up this construction a vapor extraction system was designed in which some 3,000 linear feet of trench, 8 feet by 3 feet containing this piping network was installed prior to pouring the foundation for the warehouse. This network of piping stubbed up on oil company property allowing for construction of the warehouse and an ongoing treatment of contaminated soils on the property.

- Supervised the excavation of two 10,000 gallon underground fuel storage tanks revealed massive contamination of ground water. Vacuum trucks were brought into skim raw fuels from surface. Seeing this problem was not going to be solved in time given, an ongoing treatment process and evaluation of contamination extent was instituted. This allowed the company to get back on line, begin remediation of the problem, satisfying state and government agencies involved.

- Supervised the removal of underground concrete vaults at a Superfund site in Mountain View, CA. Supervised the removal of 5 underground concrete vaults used in computer chip manufacturing process was high on the states priority list. Because work with heavy equipment was to be performed around high voltage lines temporary power supplies were brought in and existing lines were terminated. Close work with electric company and several sub-contractors was crucial. Shoring was installed in areas deemed necessary to protect structural integrity of adjacent buildings while underground vaults were removed. Such a high profile job called for close work with both state and federal agencies to insure safe and proper procedures were used. Excavated soils were sampled to determine levels of contamination. An aeration process was then utilized to lower these levels to minimize disposal cost. Bay Area Air Quality Management District (BAAQMD) approved this process by limiting aeration to a maximum cubic yards aerated per day.

- Supervised contaminated soil removal and bioremediation project. Contaminated soils were removed, a double lined bermed containment was installed. Soils were placed in containment with bacteria developed to consume contaminants. This process entailed close monitoring of soil moisture, and temperature to maximize productivity of organisms. This was a long process but in the end saved the client hundreds of thousands in Class I disposal cost.

Kurt Tucker
Project Coordinator/Site Safety Officer

Education

General Studies at United States Air Force Community College, Colorado Springs, Colorado and San Jacinto College, Pasadena, Texas

Military Experience (4 years)

U.S. Air Force - Aircraft Maintenance Specialist

Summary of Experience

Mr. Tucker is a skilled Project Coordinator with OHM Remediation Services Corp. (OHM). He has over 10 years of experience specializing in on-site remediation projects, both large and small. His responsibilities extend to coordinating transportation, excavation (including UST cleaning and removal), demolition, spill control and cleanup, on-site treatment (including filtration), asbestos removal, waste reduction, and building and equipment decontamination activities, as well as site health and safety management and coordination.

Mr. Tucker currently serves as an OHM Project Coordinator and Site Safety Officer directly responsible for day-to-day activities on remediation projects and the implementation of project Health and Safety Programs at remedial action sites. His duties include project set-up; vendor account management; equipment coordination, purchase, and maintenance; materials management; transportation coordination; and disposal. Additionally, per project specifications, he supervises demolition and excavation activities including the loading and manifesting waste for transportation from the customer's site to the disposal facility. In the course of his work, he also performs daily and monthly on-site safety meetings, initiates and implements OHM's environmental management plans, performs air monitoring, and conducts weekly site inspections.

Company Work Experience (since 1984)

- Project Coordinator - Mr. Tucker supervises field personnel in their day-to-day project activities. His duties include performing all facets of on-site remedial work (i.e., lab packing, soil excavation, tank removal, asbestos abatement, heavy equipment operations, site safety operations, off-site transportation and disposal, volume reduction processes, on-site/off-site emergency activities, decontamination of buildings and equipment, filter press operations in association with tank/sump/pond cleanups, building demolition, and on-site stabilization). He is also responsible for completing all project paperwork required for project close-out.

- Operations Coordinator - Mr. Tucker's responsibilities included assuring compliance with decontamination and health and safety procedures. His duties also encompassed monitoring and coordinating field emergency activities, assisting with first-aid and coordinating equipment and materials acquisition and utilization for remedial projects.

Kurt Tucker
Project Coordinator/Site Safety Officer

Education

General Studies at United States Air Force Community College, Colorado Springs, Colorado and San Jacinto College, Pasadena, Texas

Military Experience (4 years)

U.S. Air Force - Aircraft Maintenance Specialist

Summary of Experience

Mr. Tucker is a skilled Project Coordinator with OHM Remediation Services Corp. (OHM). He has over 10 years of experience specializing in on-site remediation projects, both large and small. His responsibilities extend to coordinating transportation, excavation (including UST cleaning and removal), demolition, spill control and cleanup, on-site treatment (including filtration), asbestos removal, waste reduction, and building and equipment decontamination activities, as well as site health and safety management and coordination.

Mr. Tucker currently serves as an OHM Project Coordinator and Site Safety Officer directly responsible for day-to-day activities on remediation projects and the implementation of project Health and Safety Programs at remedial action sites. His duties include project set-up; vendor account management; equipment coordination, purchase, and maintenance; materials management; transportation coordination; and disposal. Additionally, per project specifications, he supervises demolition and excavation activities including the loading and manifesting waste for transportation from the customer's site to the disposal facility. In the course of his work, he also performs daily and monthly on-site safety meetings, initiates and implements OHM's environmental management plans, performs air monitoring, and conducts weekly site inspections.

Company Work Experience (since 1984)

- Project Coordinator - Mr. Tucker supervises field personnel in their day-to-day project activities. His duties include performing all facets of on-site remedial work (i.e., lab packing, soil excavation, tank removal, asbestos abatement, heavy equipment operations, site safety operations, off-site transportation and disposal, volume reduction processes, on-site/off-site emergency activities, decontamination of buildings and equipment, filter press operations in association with tank/sump/pond cleanups, building demolition, and on-site stabilization). He is also responsible for completing all project paperwork required for project close-out.

- Operations Coordinator - Mr. Tucker's responsibilities included assuring compliance with decontamination and health and safety procedures. His duties also encompassed monitoring and coordinating field emergency activities, assisting with first-aid and coordinating equipment and materials acquisition and utilization for remedial projects.

- Field Technician - Mr. Tucker performed on-site tasks under the direction of the OHM Project Coordinator including: set up of work zones, set up and utilization of decontamination equipment, preparation of drummed waste for transportation to the disposal site, lab packing waste, overpacking, sampling, loading of transport vehicles, and forklift operations.

Major Project Work Includes:

- ALCOA facility, Vancouver, Washington: Mr. Tucker is currently assigned as Project coordinator for this site restoration project. The scope of work includes excavating, backfilling, stockpiling and site grading.

- Hughes Aircraft Company, Tucson, Arizona - Mr. Tucker served as the Project Coordinator/Site Safety Officer for this $1,000,000 remediation involving the desludging and decontamination of seven surface impoundments and the removal of 27 HDPE liners for recycling.

- Southern California Gas Company, State of California Superfund Site, Dinuba, California - The scope of work for this project includes the excavation and stockpiling of contaminated soil on site; ex-situ remediation of polycyclic aromatic hydrocarbon-contaminated soil by thermal desorption; backfilling and compaction of remediated soil to finish grade; demolition and disposal of existing facilities; and site improvements. Special working and decontamination procedures are involved with this project which relate primarily to dust and odor control, and minimization of exposure and spread of contaminated soil. Mr. Tucker served as the Project Coordinator for 2 months. He was responsible for site safety and the coordination of OHM crews and waste removal operations with the soil desorption schedule.

- Lockheed Environmental Systems and Technologies Company (LESAT) Plant B-1 Remediation, Burbank, California - The objective of the LESAT B-1 project was to accomplish the removal of all site improvements including asphalt surfaces, concrete slabs and foundations, underground utilities, tanks, and associated piping. Mr. Tucker served as the Project Coordinator/Site Safety Officer, responsible for project support and administering the personal air monitoring program. He also conducted air monitoring at the face of the excavation and assisted in the removal of contaminated soils.

- Northwest Transformer Mission/Pole NPL Site, Everson, Washington - Mr. Tucker was responsible for project coordination of the Northwest Transformer (NWT) Mission/Pole Project. The site, a PCB-contaminated, inactive salvage yard, was listed on the U.S. Environmental Protection Agency's CERCLA National Priority List (NPL). Remedial activities included: demolition, detailed excavation, on-site stabilization, on-site solidification, and off-site landfilling and off-site incineration of soil and debris with PCB contamination up to 2,500 ppm. The site remediation was a success, achieving an unconditional cleanup of 1 ppm.

- ELF Atochem - Mr. Tucker, as the Site Safety Officer, ensured compliance with the Health and Safety Plan for this project. His responsibilities included monitoring the removal of 12,000 tons of asbestos-contaminated soils from five buried trenches and the dewatering and removal of asbestos-contaminated material from a one-acre settlement pond.

- Metro Greenline, Los Angeles, California - Mr. Tucker fulfilled the role as the Project Coordinator/Site Safety Officer and Illness and Injury Prevention Officer for this project which involved the removal of overburden to reach TPH-contaminated soils, the excavation and segregation of the soils, and the disposal of the soil in accordance with the sampling criteria provided by the Resident Engineer. Mr. Tucker was responsible for air monitoring activities, equipment and materials purchase, and scheduling transportation and disposal aspects of the project.

- Bergsoe Metal Corporation, St. Helens, Oregon (Phases I-IV) - Mr. Tucker was the Project Coordinator/Site Safety Officer for OHM's team and the subcontractor personnel assigned to this project. Mr. Tucker's assignment covered four phases of the project which included the decontamination of a lead-contaminated building and the excavation, transportation, and disposal of lead-contaminated soils and materials. He also performed air monitoring tasks and purchased equipment and materials necessary to complete the work. Mr. Tucker also coordinated transportation and disposal operations.

- Mercury Cell Demolition - Mr. Tucker performed as Project Coordinator/Site Safety Officer on this large project involving the demolition/excavation of a mercury-contaminated building. He supervised OHM personnel and subcontractors assigned to this project, ordered equipment and materials to be utilized during the project, performed air monitoring, and prepared scheduling for the loading, transportation, and disposal functions.

- General Electric, Spokane, Washington - Mr. Tucker was the Project Coordinator/Site Safety Officer for this project which involved in-situ vitrification/volume reduction, and excavation activities related to PCB remediation. He supervised the work crew and subcontractors during the volume reduction phase and the building of the in-situ vitrification cells.

- Shell Oil Company, Harbor Island, Bellevue, Washington and Portland, Oregon - As Project Coordinator/Site Safety Officer, Mr. Tucker was on-call for Shell emergencies and immediate response actions for tank cleaning and product removal, and he was responsible for coordinating transportation to Shell's Anacortes, Washington refinery.

- BLM - This project involved the excavation of lead/acid soil. As a Project Operator/Technician, Mr. Tucker assisted with the manifesting and loading of trucks and excavation activities per BLM directions.

- Metro Rail - Mr. Tucker provided project management services for four months on this project which involved asbestos removal/abatement. He supervised OHM's subsidiary firm, BRAND, in the performance of the abatement activities, and arranged for the transportation and disposal of the asbestos-containing material.

Special Training/Certifications

40-Hour OSHA Health and Safety Training in Compliance with 29 CFR 1910.120, 1984
8-Hour Annual Refresher, 1995
8-Hour OSHA Manager Training, 1992
Certified First Aid and Adult CPR Medic, 1995
Site Safety Officer Training, 1992
U.S. Air Force, Columbus AFB, Mississippi, Aircraft Decontamination Team, 1977-1978
U.S. Air Force Chemical Warfare Training, 1976-1980
U.S. Air Force Firefighting Training, 1976-1980
Chemical Waste Management, Inc., Site Safety Officer Training, 1986, 1988, 1992
Respirator Regulatory Training, 1987
Air Monitoring Training, Colorado State University, Colorado, 1987
Industrial Firefighting Training, Colorado Springs, Colorado, 1986
Spill Response Training, Phoenix, Arizona, 1986
DOT Hazardous Materials Transportation Training, 1985, 1986, 1987, 1990

Licenses and Registrations

Licensed State of Oregon, Underground Storage Tank Decommissioning Supervisor
Licensed State of Oregon, Underground Storage Tank, Soil Matrix Cleanup Supervisor

THOMAS LIGON
SENIOR UXO SUPERVISOR

Years of Civilian UXO Experience : 1 year, 1 month

CIVILIAN UXO EXPERIENCE :

6/94-present UXB International, UXO Supervisor, provided EE/CA support to Ft. Monroe, VA. Conducted range clearance operations at Ft. Meade, MD and Ft. Monmouth, NJ. Provided UXO identification and avoidance for Japanese WWII ordnance at several locations in Alaska and the Aleutian Islands.

1/94-2/94 Geo Centers, UXO Specialist. Conducted OEW survey and range clearance operations at Chocolate Mountain, CA.

2/93-4/93 UXB International, UXO Supervisor. Phase I RI/FS of Goddard Flight Center, Wallops Island, VA; surveyed 165 acres for ordnance and explosive waste residues on Formerly Utilized Defense Sites. Ft. Meade, MD range clearance, GPS operator, ordnance location, and QA Officer. Buckroe Beach, VA range clearance.

Years of Military EOD Experience : 25 years, 2 months

MILITARY EOD EXPERIENCE :

4/86-2/91 Chief Staff Officer, directed EOD fleet operations. Commanding Officer, EOD Mobile Unit Four, directed EOD operations involving 12 dolphins, 8 sea lions, and EOD area response teams.

8/80-4/86 EODGRU TWO, Operations Officer; conducted and supervised daily EOD unit operations. EOD Training and Evaluation Unit TWO, trained LANTFLEOD technicians in all EOD response areas.

12/76-8/80 EOD Det., North Island, CA. NOIC supervising range clearances.

11/66-11/76 EOD Specialist. Various commands and duties in support of EOD activities.

MILITARY EOD EDUCATION :

U.S. Naval EOD School	66
EOD Refresher	70, 73, 80

August 22, 1995

Naval School
Explosive Ordnance Disposal

This certifies that

CHIEF WARRANT OFFICER THOMAS M. LIGON, [redacted], USN

having successfully completed the prescribed course of study for

NAVY ADVANCED EXPLOSIVE ORDNANCE DISPOSAL DIVER

is awarded this Certificate

this 19TH day of FEBRUARY A.D. 1975

D. L. SCHAIBLE, CDR, USN
COMMANDING OFFICER

NAVSCOLEOD FORM 1650/2

Certificate of Training

this certifies that

Thomas Ligon

has completed the requirements for
8 Hour Refresher Hazardous Waste Operations
in accordance with **OSHA 29 CFR 1910.120 (e) (8)**

Certifying Official

12.31.94
Date