Naval Facilities Engineering Systems Command Southwest
BRAC PMO West
San Diego, CA

Final
Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012

Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA

November 2022

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Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA

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Executive Summary

This Engineering Evaluation/Cost Analysis (EE/CA) has been prepared to address material potentially presenting an explosive hazard (MPPEH) and munitions and explosives of concern (MEC) remaining in soil within and/or under the berm as part of a non-time-critical removal action (NTCRA) at the Bermed Area, Unexploded Ordnance (UXO) Site 0012, at the Former Naval Weapons Station (NAVWPNSTA) Seal Beach Detachment (Det) Concord in Concord, California (Figure ES-1). Because the Department of the Navy (Navy) anticipates conducting an NTCRA to address MPPEH/MEC in soil within and/or under the berm at the Bermed Area that may pose an explosive hazard, this EE/CA has been prepared as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Section 300.415(b)(4)(i). This EE/CA was developed in accordance with U.S. Environmental Protection Agency (EPA) guidance for performing NTCRAs under the Comprehensive Environmental Response, Compensation, and Liability Act and the NCP (EPA, 1993).

The purpose of this EE/CA is to identify removal action objectives (RAOs) to address MPPEH/MEC in soil within and/or under the berm and develop and evaluate the effectiveness, implementability, and cost of various removal alternatives that may satisfy the RAOs. This EE/CA also presents the removal alternative recommended by the Navy. Information obtained during previous investigations and response actions was used during this EE/CA to evaluate the removal alternatives based on current and anticipated future land use.

The NTCRA addressed in this EE/CA is an interim remedy for the site. Evaluation of a final remedy for the site will be documented in an EE/CA, Proposed Plan (PP), and Record of Decision prepared after completion of this NTCRA.

ES.1 Site Background

The Bermed Area is located in the southeastern portion of the former NAVWPNSTA Seal Beach Det Concord, east of Bailey Road. The Bermed Area consists of approximately 15.3 acres located within a valley encompassing approximately 30 acres. Encompassed within the Bermed Area is a smaller area surrounded by an earthen berm that was used to retain water in support of cattle grazing. The earthen berm is approximately 25 feet wide at the base, 85 feet long, and an average of 10 feet high. These dimensions result in a volume of approximately 787 cubic yards of soil.

The Bermed Area, UXO Site 0012, was an explosive ordnance disposal site used from the 1940s through 1959, likely for open detonation of munitions. A series of investigations was conducted at the Bermed Area between 2005 and 2013 to identify MPPEH/MEC and munitions constituents (MC) in soil within the Bermed Area. The

investigations included visual and geophysical surveys, soil sampling, trenching, intrusive investigation and removal of subsurface anomalies, and collection of soil samples for analysis of MC.

During the 2013 remedial investigation (RI), 2,451 target anomalies were intrusively investigated and 2,392 metal items were removed. Of those items, 2,222 (92.9 percent) were scrap metal, 152 (6.4 percent) were material documented as safe (MDAS), and 18 (0.7 percent) could not be determined to be MDAS and were thus handled as material documented as an explosive hazard (MDEH) and explosively disposed of on site. MDAS items included fuze components (ignitors and expended fuzes), expended smoke grenades, and tail booms from rocket-fired munitions. Items treated as MDEH included two tail booms, aircraft canopy ejection tubes, tracers, and one fuze component. Two items may have been MDAS, but were treated as MDEH because they were filled with dirt, preventing a visual inspection of the interior. Approximately 200 pounds of MDAS and 587 pounds of scrap metal were removed from the site (TriEco-Tt, 2014).

The RI Report concluded that all detectable MPPEH and MDAS were removed from the site, except for what may remain underneath or within the earthen berm and established a 100-foot clearance buffer beyond any MPPEH item at the Bermed Area. The MEC Hazard Assessment calculated a hazard level of 4 for future use as open space, the lowest available for a munitions response site. Additionally, no MC were present in soil at concentrations that posed an unacceptable risk to human health or the environment (TriEco-Tt, 2014).

As a result, the RI Report recommended that a focused feasibility study (FFS) be performed to evaluate the appropriateness of a limited-action closure using land use controls (LUCs) and institutional controls to provide notification in the property deed that the site had been used for explosive ordnance disposal, and that all detected munitions have been cleared (TriEco-Tt, 2014).

In 2017, an FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area (i.e., explosive hazards within or underneath the earthen berm). The FFS evaluated three remedial alternatives against the nine NCP criteria and one another: Alternative 1, No Action; Alternative 2, LUCs; and Alternative 3, Berm Removal and Munitions Detection, Removal, and Destruction. Alternatives 2 (LUCs) and 3 (Berm Removal and Munitions Detection, Removal, and Destruction) were found to meet the threshold criteria of protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs). The evaluation of remedial alternatives was based on long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. Based on the

comparative analysis, it was concluded that Alternative 3 (Berm Removal and Munitions Detection, Removal, and Destruction) was the highest-ranking alternative (TriEco-Tt, 2017).

The 2017 Proposed Plan (PP) presented the Navy's preferred alternative of berm removal and munitions clearance to address remaining low-level risk due to the low probability of encountering any explosive hazards to human health at the Bermed Area. Based on the information in the RI and FFS, the Proposed Plan identified the earthen berm as the only area requiring a remedial action. The Proposed Plan invited the public to review and comment on the preferred alternative. A public meeting was held on November 15, 2017, that provided an additional opportunity for the public to learn about the Proposed Plan and to provide comments (DON, 2017).

Following acceptance of the Proposed Plan, the Navy began preparing the Record of Decision (ROD) to document berm removal and munitions detection, removal, and destruction as the remedy that would be selected on issuance of the Final ROD (Navy, 2019). However, the Navy and stakeholders disagreed about soil sampling related to MC or underneath removed MPPEH discovered during berm removal, soil remedial goals, and whether a risk assessment was required. At the Draft Final ROD stage, the State of California requested that the Navy collect soil samples for analysis of Title 22 metals and appropriate explosives under any munitions items identified as part of the remedy process. If chemical samples were to be collected, then a remedial goal for those chemicals must be set in the ROD. During the RI stage, the Navy and regulators agreed that no risk assessment was required because MC concentrations were less than the RI screening levels. To set a remedial goal, a risk assessment is necessary to develop risk-based concentrations and inform a selection of site-specific remedial goals. Therefore, the Navy withdrew the Draft Final ROD in lieu of an NTCRA, whereby a removal action goal, consistent with numeric thresholds set forth in the Final RI Work Plan, could be set to allow for assessment of MC, if they were found during the NTCRA. It was agreed that following the NTCRA, barring any unforeseen discoveries of additional contamination, the Navy would reissue a Draft ROD with two alternatives, No Action and LUCs, because all detectable anomalies would be identified (by digital geophysical mapping [DGM] with a man-portable EM61 and/or advanced geophysical classification [AGC] with an UltraTEM operating in dynamic mode) and removed from the site, and no MC would be present in soil at concentrations exceeding the applicable human health and ecological screening levels. Therefore, this NTCRA is being conducted to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining detectable potential explosive hazards posed to human health and the environment at the Bermed Area.

ES.2 Removal Action Objectives

The following RAO was developed to address MPPEH/MEC contamination in soil at the Bermed Area:

- Protect human health and the environment by reducing/mitigating the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during ground-disturbing activities associated with current and future site use.

The RAO applies to the earthen berm only; the 2014 RI Report concluded that all known MPPEH and MDAS were removed from the remainder of the Bermed Area. As a result, the NTCRA only includes collection of soil samples for analysis of metals and explosives under any discovered munitions-related items, regardless of whether there is evidence of a release, or post-detonation of any MPPEH/MEC items found during the NTCRA. No remediation goals have been established for this site; however, the Navy will identify project screening levels in the Sampling and Analysis Plan (SAP). If MC are identified at concentrations exceeding the project screening levels, then a risk assessment would be performed. If the risk assessment results indicate that unacceptable risk is present, then impacted soil will be removed from the site and disposed of at a licensed facility.

ES.3 Identification and Analysis of Removal Alternatives

The following removal alternatives were developed and evaluated for the Bermed Area:

- **Alternative 1, No Action**—baseline for comparison with other alternatives. Under this alternative, any MPPEH/MEC items present within or beneath the berm would be left in place without implementing any containment, removal, treatment, or other reducing/mitigation actions. The no action alternative does not provide for access restrictions or other LUCs necessary to reduce the potential for contaminant exposure to the public or the environment

- **Alternative 2, LUCs**—institutional controls (ICs) will consist of administrative controls to reduce/mitigate explosive hazards and prevent exposure to MPPEH/MEC items in soil for public health. Specifically, LUCs include a prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and military munitions recognition and safety training for construction personnel are provided. These LUCs would be enforced by the Navy until a Final ROD is signed. For the LUC alternative, MPPEH/MEC items that may be present within or beneath the berm would remain at the site.

- **Alternative 3, Berm Removal, Post-Removal Verification Survey by DGM, and Destruction**—concurrently with removal of berm soil, anomalies within and beneath the berm would be identified and removed to eliminate the explosive hazards posed to humans and the environment; a post-removal verification survey by DGM (using a man-portable EM61) on the footprint of the berm to verify no explosive anomalies remain in the subsurface; MPPEH/MEC items would be inspected and classified as MEC or MDAS as appropriate. Items that cannot be classified due to an un-inspectable void would be treated as MEC. MEC would be destroyed via detonation (either destruction in place or consolidated shot). Munitions debris (after inspection and certification as MDAS) would be demilitarized using propane and oxygen torches and/or wet band saws to ensure it no longer resembled a munition item. The fragments would be placed into 55-gallon drums for subsequent transport to a certified recycling facility for final disposal by smelting. Non-munitions related scrap would be recycled at a licensed, offsite facility. Soil samples would be collected for analysis of metals and explosives if a munitions-related item is found or after detonation of any MPPEH/MEC items found. No remediation goals for MC have been established for this site; however, the Navy would identify project screening levels in the Sampling and Analysis Plan (SAP). If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment would be evaluated. If the risk assessment results indicate that unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility. At the conclusion of the NTCRA, the Navy would have removed all detectable munitions. However, given the limits of detection technology at this time, a risk of residual munitions would remain that would be addressed in a final remedy decision document.

- **Alternative 4, Berm Removal, Post-Removal Verification Survey by AGC, and Destruction**—concurrently with removal of berm soil, anomalies within and beneath the berm would be identified and removed to eliminate the explosive hazards posed to humans and the environment; a post-removal verification survey by AGC (using an UltraTEM operating in dynamic mode) on the footprint of the berm to verify no explosive anomalies remain in the subsurface; MPPEH/MEC items would be inspected and classified as MEC or MDAS as appropriate. Items that cannot be classified due to an un-inspectable void would be treated as MEC. MEC would be destroyed via detonation (either destruction in place or consolidated shot). Munitions debris (after inspection and certification as MDAS) would be demilitarized using propane and oxygen torches and/or wet band saws to ensure it no longer resembled a munition item. The fragments would be placed into 55-gallon

drums for subsequent transport to a certified recycling facility for final disposal by smelting. Non-munitions-related scrap would be recycled at a licensed offsite facility. Soil samples would be collected for analysis of metals and explosives if a munitions-related item is found or after detonation of any MPPEH/MEC items found. No remediation goals for MC have been established for this site; however, the Navy would identify project screening levels in the SAP. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment would be evaluated. If the results of a risk assessment indicate that unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility. At the conclusion of the NTCRA, the Navy would have removed all detectable munitions. However, given the limits of detection technology at this time, a risk of residual munitions would remain that would be addressed in a final remedy decision document.

Alternatives 1, 2, 3, and 4 were individually evaluated with respect to their effectiveness (i.e., ability to meet the RAO), implementability, and cost. The removal alternatives were then compared with one another using those three evaluation criteria. Table ES-1 summarizes the individual analysis of the alternatives for the Bermed Area.

A comparative analysis also was completed to aid in identifying and assessing relative strengths and weaknesses between the three removal alternatives. Table ES-2 summarizes the comparative analysis of Alternatives 1, 2, 3, and 4 against each other and the three evaluation criteria.

ES.4 Recommended Removal Alternative

Based on the comparative analysis of the removal alternatives, the Navy recommends Alternative 3, Berm Removal, Post-Removal Verification Survey by DGM, and Destruction. Alternative 3 is selected because it is the most-cost-effective alternative that would meet the RAO for the site by removing potential detectable MPPEH/MEC in and below the earthen berm. Implementation of Alternative 3 is estimated to require approximately 3 years for planning, site preparation, MPPEH and berm soil removal, post-removal verification survey of the berm footprint using DGM methodologies, MPPEH inspection and classification of MEC and MDAS, detonation of MPPEH/MEC, certification and demilitarization of MDAS, disposal of certified MDAS and non-munitions-related metal, soil sampling (if necessary), site restoration, and reporting.

The alternative selected by the Navy for an NTCRA at the Bermed Area will be documented in an Action Memorandum, which will be finalized after the public comment period on the final version of this EE/CA, and community acceptance will be addressed in the Action Memorandum.

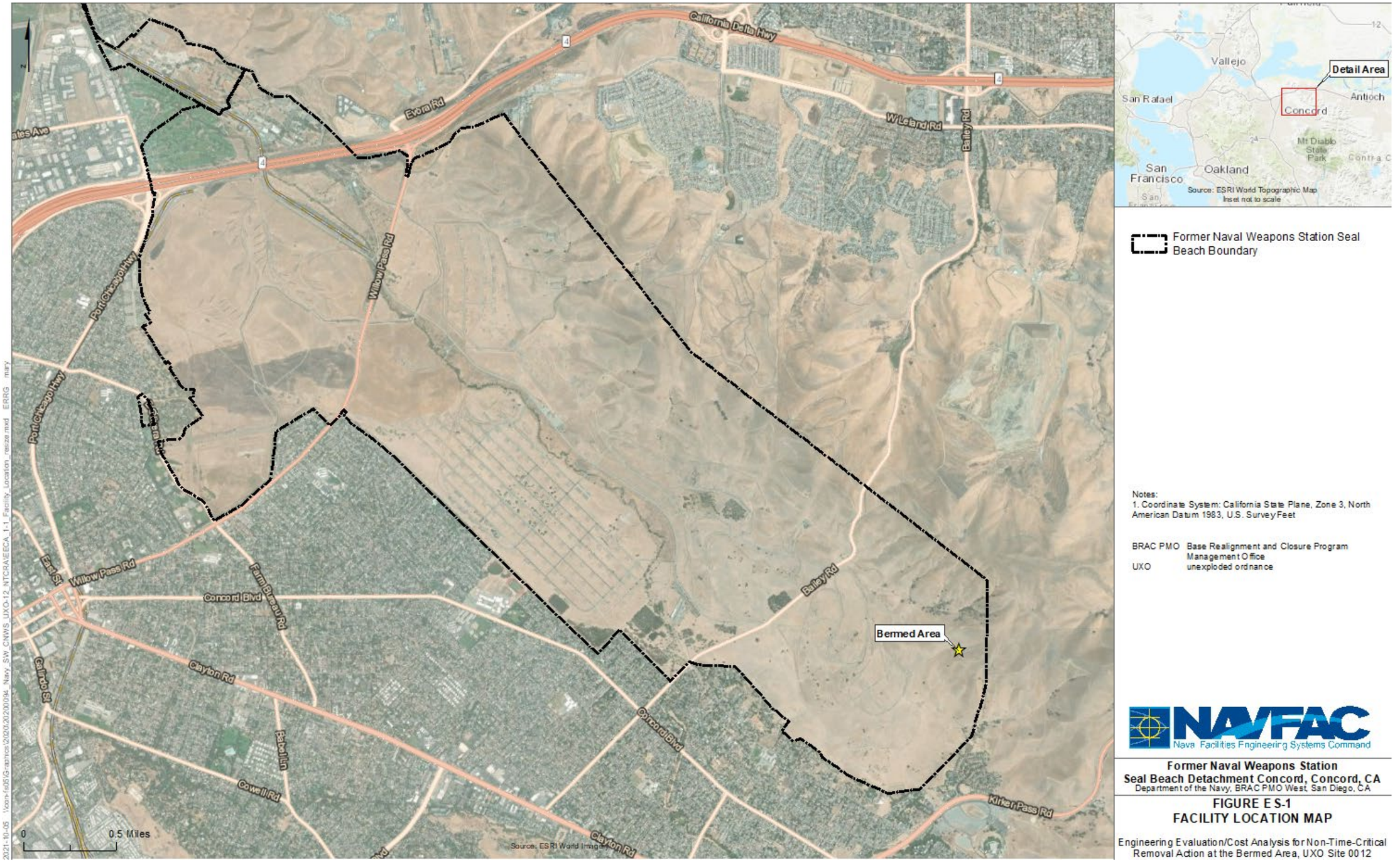
California Delta Hwy
Evora Rd
W Leland Rd
Bailey Rd
Port Chicago Hwy
Willow Pass Rd
Farm Bureau Rd
Concord Blvd
Clayton Rd
Galindo St
Cowell Rd
Kirker Pass Rd
Bermed Area
0
0.5 Miles
Sources: ESRI World Imagery
Detail Area
Vallejo
Antioch
San Rafael
Concord
Mt Diablo State Park
San Francisco
Oakland
Source: ESRI World Topographic Map
Inset not to scale
Former Naval Weapons Station Seal Beach Boundary
Notes:
1. Coordinate System: California State Plane, Zone 3, North American Datum 1983, U.S. Survey Feet
BRAC PMO Base Realignment and Closure Program Management Office
UXO unexploded ordnance
NAVFAC
Naval Facilities Engineering Systems Command
Former Naval Weapons Station
Seal Beach Detachment Concord, Concord, CA
Department of the Navy, BRAC PMO West, San Diego, CA
FIGURE E S-1
FACILITY LOCATION MAP
Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012

Table ES-1: Individual Analysis of Removal Alternatives

Criterion	Removal Alternatives			
	1—No Action	2—LUCs	3— Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	4— Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Effectiveness				
Overall Protection of Human Health and the Environment	Not protective because no action would be taken to reduce/mitigate the risk of exposure to MPPEH/MEC in subsurface soil.	Provides protection of human health by preventing exposure to MPPEH/MEC in berm soil via administrative policies (i.e., dig restrictions and safety training). There is no protection of the environment.	Protective of human health and the environment because all detectable MPPEH/MEC remaining in the berm soil and subsurface soil would be removed from the site thereby reducing/mitigating potential exposure to munitions-related items or explosive hazards posed to human health and the environment.	Protective of human health and the environment because all detectable MPPEH/MEC remaining in the berm soil and subsurface soil would be removed from the site thereby reducing/mitigating potential exposure to munitions-related items or explosive hazards posed to human health and the environment.
Compliance with ARARs	Does not meet any of the identified ARARs.	Complies with ARARs for mitigation of the soil exposure pathway by preventing soil disturbance through LUCs.	Removal action complies with all ARARs.	Removal action complies with all ARARs.
Long-Term Effectiveness and Permanence	Does not provide long-term effectiveness and permanence because MPPEH/MEC may remain in subsurface soil and could pose an explosive hazard if disturbed.	For the soil exposure pathway, this alternative would be effective in the long-term reduction of hazards to humans as long as the physical access restrictions to prohibit exposure to subsurface soil are implemented, inspected, and maintained. The administrative policies also require implementation and consistent enforcement. Long-term effectiveness relies on adherence to the administrative controls.	Provides long-term effectiveness and permanence because detectable MPPEH/MEC would be removed from the berm soil thereby reducing/mitigating the potential exposure to munitions-related items or explosive hazards posed to human health and the environment.	Provides long-term effectiveness and permanence because detectable MPPEH/MEC would be removed from the berm soil thereby reducing/mitigating the potential exposure to munitions-related items or explosive hazards posed to human health and the environment.
Effectiveness *(continued)*				
Reduction of Toxicity, Mobility, or Volume through Treatment	Does not include treatment (i.e., removal and detonation) that would reduce the mobility or volume of MPPEH/MEC in subsurface soil at the site.	Does not include any treatment (i.e., removal and detonation) that would reduce the mobility or volume of MPPEH/MEC in subsurface soil at the site.	All detectable MPPEH/MEC would be treated via detonation thereby reducing/mitigating the mobility and volume of MPPEH/MEC in soil at the site.	All detectable MPPEH/MEC would be treated via detonation thereby reducing/mitigating the mobility and volume of MPPEH/MEC in soil at the site.

Table ES-1: Individual Analysis of Removal Alternatives *(continued)*

Criterion	Removal Alternatives			
	1—No Action	**2—LUCs**	**3— Berm Removal, Post-Removal Verification Survey by DGM, and Destruction**	**4— Berm Removal, Post-Removal Verification Survey by AGC, and Destruction**
Short-Term Effectiveness	Would not achieve the RAO. No short-term hazards posed to workers or the public because no activities would be conducted under this alternative.	Would not achieve the RAO for protection of the environment. Would achieve the RAO of protecting human health from exposure to munitions-related items or explosive hazards (i.e., MPPEH/MEC). No short-term increased risks because munitions-related items or explosive hazards (i.e., MPPEH/MEC) in soil would not be disturbed during implementation of this alternative.	Anticipated to achieve the RAO in approximately 3 years, which is the time required for planning, site preparation, removal of MPPEH and the berm soil, post-removal verification survey using DGM, MPPEH inspection and classification of MEC and MDAS, detonation of MPPEH/MEC, certification and demilitarization of MDAS, disposal of certified MDAS and non-munitions-related metal, soil sampling, site restoration, and reporting. Increased short-term risk to workers or the public due to the soil disturbance activities; however, potential contact with MPPEH/MEC would be reduced/mitigated using PPE, best management practices, and other control measures.	Anticipated to achieve the RAO in approximately 3 years, which is the time required for planning, site preparation, removal of MPPEH and the berm soil, post-removal verification survey using AGC, MPPEH inspection and classification of MEC and MDAS, detonation of MPPEH/MEC, certification and demilitarization of MDAS, disposal of certified MDAS and non-munitions-related metal, soil sampling, site restoration, and reporting. Increased short-term risk to workers or the public due to the soil disturbance activities; however, potential contact with MPPEH/MEC would be reduced/mitigated using PPE, best management practices, and other control measures.
Implementability				
Technical Feasibility	No action would be taken.	No technical feasibility concerns.	No technical feasibility concerns.	No technical feasibility concerns.
Administrative Feasibility	No action would be taken.	Administratively feasible; however, LUCs have the potential to fail over time when administrative procedures are not followed.	No administrative feasibility concerns.	No administrative feasibility concerns.
Availability of Services and Materials	No action would be taken.	No concerns identified regarding availability of services or materials.	No concerns identified regarding availability of services or materials.	No concerns identified regarding availability of services or materials.
Implementability				
Regulatory Agency Acceptance	Not evaluated at this time pending comments from the regulatory agencies on the Draft EE/CA and Draft Action Memorandum.			
Community Acceptance	Not evaluated at this time pending comments from the community during the 30-day public comment period planned..			

Table ES-1: Individual Analysis of Removal Alternatives *(continued)*

Criterion	Removal Alternatives			
	1—No Action	2—LUCs	3— Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	4— Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Cost				
	Total Cost: $0 Capital: $0 O&M: $0 Present Value: $0	Total Cost: $70,000 Capital: $70,000 O&M: $0 Present Value: $70,000	Total Cost: $509,700 Capital: $509,700 O&M: $0 Present Value: $509,700	Total Cost: $576,900 Capital: $576,900 O&M: $0 Present Value: $576,900

Notes:
AGC = advanced geophysical classification
ARARs = applicable or relevant and appropriate requirement
DGM = digital geophysical mapping
EE/CA = Engineering Evaluation/Cost Analysis
LUCs = land use controls
MDAS = material documented as safe
MEC = munitions and explosives of concern
MPPEH = material potentially presenting an explosive hazard
O&M = operation and maintenance
PPE = personal protective equipment
RAO = removal action objective

Table ES-2: Comparative Analysis of Removal Alternatives

Evaluation Criteria	Alternative 1 No Action	Alternative 2 LUCs	Alternative 3 Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	Alternative 4 Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Effectiveness	**Qualitative Ranking**			
Protection of Human Health and Environment	Not protective	Moderate	High	High
Compliance with ARARs	None	Moderate	High	High
Long-Term Effectiveness	None	Moderate	High	High
Short-Term Effectiveness	None	Moderate	High	High
Achieve RAO	None	Moderate	High	High
Reduction of Toxicity, Mobility, and Volume through Treatment	None	Low	High	High
Implementability	**Qualitative Ranking**			
Technical Feasibility	None required	High	High	High
Administrative Feasibility	None required	Moderate	High	High
Availability of Services or Materials	None Required	High	High	High
Cost	**Removal Action Cost**			
Period of Analysis (Years)	30	30	30	30
Estimated Capital Cost	$0	$70,000	$509,700	$576,900
Estimated Annual/Period Cost	$0	$0	$0	$0
Estimated Total Cost	$0	$70,000	$509,700	$576,900

Table ES-2: Comparative Analysis of Removal Alternatives *(continued)*

Evaluation Criteria	Alternative 1 No Action	Alternative 2 LUCs	Alternative 3 Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	Alternative 4 Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Cost *(continued)*	**Removal Action Cost** *(continued)*			
Estimated Total Present Value of Alternative	$0	$70,000	$509,700	$576,900
EE/CA Range (-30% / +50%)	$0	$49,000 / $105,000	$356,790 / $764,550	$403,830 / $865,350

Notes:
AGC = advanced geophysical classification
ARARs = applicable or relevant and appropriate requirements
DGM = digital geophysical mapping
EE/CA = Engineering Evaluation/Cost Analysis
LUCs = land use controls
MPPEH = material potentially presenting an explosive hazard
RAO = removal action objective

Table of Contents

Table of Contents *(continued)*

List of Appendices

Table of Contents *(continued)*

List of Figures

List of Tables

Abbreviations and Acronyms

AAR ..... After Action Report

AGC ..... Advanced Geophysical Classification

APP ..... Accidental Prevention Plan

ARARs ..... applicable or relevant and appropriate requirements

bgs ..... below ground surface

BMPs ..... best management practices

CDFW ..... California Department of Fish and Wildlife

CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act

CFR ..... Code of Federal Regulations

CRLF ..... California red-legged frog

CSM ..... conceptual site model

CTS ..... California tiger salamander

Det ..... Detachment

DGM ..... digital geophysical mapping

DoD ..... U.S. Department of Defense

DTSC ..... Department of Toxic Substances Control

EBRPD ..... East Bay Regional Parks District

ECs ..... engineering controls

EE/CA ..... Engineering Evaluation/Cost Analysis

EOD ..... explosive ordnance disposal

EPA ..... U.S. Environmental Protection Agency

ESS ..... Explosives Safety Submission

FFS ..... focused feasibility study

Abbreviations and Acronyms *(continued)*

HA ..... Hazard Assessment

IAS ..... initial assessment study

ICs ..... institutional controls

IR ..... Installation Restoration

GPS ..... global positioning system

LUCs ..... land use controls

MC ..... munitions constituents

MDAS ..... material documented as safe

MDEH ..... material documented as an explosive hazard

MEC ..... munitions and explosives of concern

mm ..... millimeter

MOTCO ..... Military Ocean Terminal Concord

MPPEH ..... material potentially presenting an explosive hazard

MRP ..... Munitions Response Program

NAVWPNSTA ..... Naval Weapons Station

Navy ..... Department of the Navy

NCP ..... National Oil and Hazardous Substances Pollution Contingency Plan

NTCRA ..... non-time-critical removal action

O&M ..... operation and maintenance

OSPR ..... Office of Spill Prevention and Response

PA ..... preliminary assessment

RACSR ..... Removal Action Completion Summary Report

RAOs ..... removal action objectives

RD ..... Remedial Design

Abbreviations and Acronyms *(continued)*

RI.....remedial investigation

ROD ..... Record of Decision

RTK ..... real-time kinematic

SAP ..... Sampling and Analysis Plan

SI.....site inspection

SSHP .....Site Safety and Health Plan

SUXOS..... Senior Unexploded Ordnance Supervisor

Techs ..... Technicians

U.S.C..... United States Code

USFWS ..... U.S. Fish and Wildlife Service

UXO .....unexploded ordnance

UXOSO .....Unexploded Ordnance Safety Officer

Water Board .....San Francisco Bay Regional Water Quality Control Board

§ ..... Section

1.0 Introduction

This Engineering Evaluation/Cost Analysis (EE/CA) has been prepared to address material potentially presenting an explosive hazard (MPPEH) and munitions and explosives of concern (MEC) remaining in soil within and/or under the berm as part of a non-time-critical removal action (NTCRA) at the Bermed Area, within the former Naval Weapons Station (NAVWPNSTA) Seal Beach Detachment (Det) Concord, in Concord, California (Figure 1-1). Because the Department of the Navy (Navy) anticipates conducting an NTCRA to address MMPEH/MEC in soil within and/or under the berm at the Bermed Area that may pose an explosive hazard, this EE/CA has been prepared as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Section (§) 300.415(b)(4)(i).

This EE/CA was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended under the Superfund Amendments and Reauthorization Act (Title 42 United States Code [U.S.C.] § 9601); the NCP (Title 40 Code of Federal Regulations [CFR] Part 300), and the following federal guidance:

- "Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA" (U.S. Environmental Protection Agency [EPA], 1993)
- "A Guide to Development and Documenting Cost Estimates During the Feasibility Study (EPA, 2000)

Numerous investigations have been conducted at the Bermed Area between 2005 and 2013 to identify MPPEH/MEC and munitions constituents (MC) in soil within the Bermed Area (see Section 2.2). During those investigations, subsurface anomalies were identified throughout the Bermed Area. During the 2013 remedial investigation (RI), all previously identified and current (identified during the RI) subsurface anomalies were intrusively investigated and removed. The RI Report concluded that all detectable MPPEH and material documented as safe (MDAS), which were detected by digital geophysical methods, were removed from the Bermed Area, except for what may remain underneath or within the earthen berm. During the RI, one item was found at 5 feet below ground surface (bgs) below the berm (i.e., which correlates with the approximate ground surface elevation prior to construction of the berm). Additionally, no MC were present in soil at concentrations that posed an unacceptable risk to human health or the environment (TriEco-Tt, 2014). As a result, an NTCRA is recommended to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining detectable potential explosives hazards posed to humans and the environment at the Bermed Area. Soil samples will be collected for analysis of metals and explosives under any discovered

munitions items, regardless of whether there is evidence of a release, and if MPPEH/MEC are explosively treated (i.e., post-demolition shot). Engineering/Remediation Resources Group, Inc. prepared this EE/CA on behalf of the Navy under Contract No. N62742-17-D-1811, Task Order No. N6247320F5480.

1.1 Purpose

The purpose of this EE/CA is to (1) identify removal action objectives (RAOs); (2) develop and analyze the effectiveness, implementability, and cost of the removal alternatives that may satisfy the RAOs; and (3) recommend a removal alternative that is protective of human health and the environment and that complies with applicable or relevant and appropriate requirements (ARARs). Information obtained in preparing previous investigations and removal efforts was used during this EE/CA to evaluate the removal alternatives based on the current and anticipated future land use.

In accordance with EPA (1993) guidance, the EE/CA was prepared to meet the environmental review requirements for removal actions; to satisfy administrative record requirements for documentation of the selected removal alternative; and to identify the objectives of the selected removal alternative and analyze the effectiveness, implementability, and cost of various alternatives that may satisfy these objectives.

The NTCRA addressed in this EE/CA is an interim remedy for the site. Evaluation of a final remedy for the site will be documented in an EE/CA, Proposed Plan (PP), and Record of Decision prepared after completion of this NTCRA.

1.2 Regulatory Framework

The U.S. Department of Defense (DoD) has the authority to undertake CERCLA response actions, including removal actions, under Title 42 U.S.C. § 9604, Title 10 U.S.C. § 2705, and Federal Executive Order 12580, as amended.

On December 16, 1994, the former NAVWPNSTA Seal Beach Det Concord was included on the National Priorities List as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, under the Navy's Munitions Response Program (MRP). The identification number in the Comprehensive Environmental Response, Compensation, and Liability Information System for the former NAVWPNSTA Seal Beach Det Concord is CA7170024528. Groundwater, soil, and soil gas at the former NAVWPNSTA Concord were found to be impacted with organic and inorganic contaminants resulting from past site activities. Munitions items have been found on the surface and subsurface at the former NAVWPNSTA Seal Beach Det Concord resulting from past site activities. The Navy

has been conducting and implementing the Installation Restoration (IR) Program and MRP at the former NAVWPNSTA Concord since the early 1990s and early 2000s, respectively.

The Navy's cleanup efforts are being performed under the oversight of EPA Region 9, the California Department of Toxic Substances Control (DTSC), and the San Francisco Bay Regional Water Quality Control Board (Water Board) through a Federal Facility Agreement signed in 2001 (EPA, 2001).

A copy of the Draft EE/CA will be provided to the EPA, Water Board, and DTSC, as well as the California Department of Fish and Wildlife (CDFW), for review and comment.

1.3 Report Organization

After Section 1.0, this EE/CA is organized as follows:

- **Section 2.0 – Site Characterization,** describes the site background and summarizes previous investigations; the risk assessments, if applicable; and the source, nature, and extent of contamination.
- **Section 3.0 – Identification of Removal Action Objectives**, presents the proposed RAOs that, if met, will result in protection of human health and environment; the proposed scope and schedule for the NTCRA; and defines the ARARs that will guide the NTCRA.
- **Section 4.0 – Identification and Analysis of Removal Alternatives**, describes the development and selection of removal alternatives, summarizes the evaluation criteria, and presents the detailed analysis of the individual removal alternatives against the evaluation criteria.
- **Section 5.0** – **Comparative Analysis of Removal Alternatives,** summarizes the comparative analysis of alternatives against each other.
- **Section 6.0** – **Recommended Removal Alternative**, presents the recommended removal alternative to address MPPEH/MEC in soil at the Bermed Area.
- **Section 7.0 – References**, lists the documents and guidance used to develop this EE/CA.

Figures and tables are presented following Section 7.0. Appendix A presents the evaluation of ARARs. Appendix B provides the detailed cost analysis. Appendix C includes supporting information for environmental footprint analysis. Appendix D includes the Navy's responses to regulatory agency comments on the Draft EE/CA.

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2.0 Site Characterization

This section provides an overview of the site, previous investigations, prior risk assessments (as applicable), and the source, nature, and extent of contamination.

2.1 Site Location and Background

The former NAVWPNSTA Seal Beach Det Concord is located in north-central Contra Costa County, in Concord, California, about 30 miles northeast of San Francisco (Figure 1-1). NAVWPNSTA Seal Beach Det Concord is bounded by the Suisun Bay to the north, the city of Concord to the south and west, and Los Medanos Hills to the east. The facility comprises the Inland Area and the Tidal Area.

The Bermed Area is located in the southeastern portion of the former NAVWPNSTA Seal Beach Det Concord, east of Bailey Road (Figure 2-1). The Bermed Area consists of approximately 15.3 acres located within a valley encompassing approximately 30 acres. The Bermed Area is the same area identified as IR Site 23A in the Inland Area and is also known as Unexploded Ordnance (UXO) Site 0012.

The following sections describe historical operations at the former NAVWPNSTA Seal Beach Det Concord and the Bermed Area, as well as the physical setting and current and future land uses.

2.1.1 Historical Facility Operations

Formerly known as Port Chicago, NAVWPNSTA Seal Beach Det Concord was established in 1942 as an annex to the Mare Island Naval Shipyard with the mission of receiving, sorting, storing, and issuing ammunition to ships and Navy facilities in the San Francisco Bay Area. At the time, Port Chicago encompassed approximately 7,700 acres. By 1944, munitions passing through the Port Chicago waterfront exceeded the capacity of the new facility and the Navy acquired approximately 5,200 acres of land in the Diablo Creek Valley. This area is now known as the Inland Area and Port Chicago is now known as the Tidal Area (TriEco-Tt, 2014).

Throughout its history and into the 1990s, the Inland Area was used primarily for ammunition storage, but also included facilities for maintenance, administration, and housing. In 1999, the Inland Area was placed in a reduced operational status and, in November 2005, the Defense Base Realignment and Closure Commission recommended that the Inland Area be operationally closed and eventually transferred from federal ownership. Furthermore, the Tidal Area, along with a portion of the Inland Area (115 acres), was reassigned to the Department of the Army on September 30, 2008; this

property was renamed Military Ocean Terminal Concord (MOTCO) and the Army took over as lead agency for MOTCO. The Inland Area was declared surplus in March 2007 and was operationally closed in September 2008. Currently, no military operations are performed at the former NAVWPNSTA Seal Beach Det Concord, and the property is being prepared for transfer from federal ownership (TriEco-Tt, 2014).

2.1.2 Historical Operations at the Bermed Area

Historical documentation indicated that an explosive ordnance disposal (EOD) site was operated from the 1940s through 1959 at IR Site 23A, but the exact location was not known. Historical records also indicated that detonations limited to 50 pounds of high explosives were conducted at IR Site 23A. In 1959, EOD was reportedly discontinued at IR Site 23A after complaints about the high noise levels associated with detonation (TriEco-Tt, 2014 and 2017).

The Bermed Area was discovered during site walks and a review of historical aerial photographs during an attempt to locate IR Site 23A. The Bermed Area had a manmade berm and other topographical features that were similar to other known EOD sites at the facility. It was initially not clear if the Bermed Area was the same as IR Site 23A because the berm, originally thought to be part of EOD operations, appeared to have been installed after EOD operations ceased in 1959. However, munitions-related materials were recovered at the Bermed Area during the 2013 RI and no munitions-related items were discovered in nearby areas, including IR Site 23A. As a result, it was clearly indicated that the Bermed Area is the same EOD site that was previously referred to as IR Site 23A. The valley containing the berm is approximately 30 acres. Metal scraps, which may be munitions-related, were visually observed on the site during previous site walks, and MPPEH was discovered at the Bermed Area during the site inspection (SI) and RI (TriEco-Tt, 2014 and 2017).

The Bermed Area has been used for cattle grazing since EOD operations ceased. Aerial photograph reviews indicated the earthen berm on the site was installed in the 1960s after the reported discontinuation of EOD activities. Aerial photographs also showed the area behind the berm contained ponded water. Evidence suggests that the berm was likely installed across a natural drainage path to retain water for cattle. The berm protected a salt lick and water trough for cattle and was likely installed by ranchers who leased the property. No water has been present in this area during any onsite activities conducted since 2012 (TriEco-Tt, 2017).

2.1.3 Physical Setting

This section provides information on the regional and site-specific physical setting, including climate, topography, vegetation types, geology and soil, hydrology, hydrogeology, and ecology, as appropriate.

2.1.3.1 Climate

The climate in the area of the former NAVWPNSTA Seal Beach Det Concord is Mediterranean-like, ranging from warm, dry summers to cool, moist winters. The average annual monthly temperatures range from approximately 55°F to 81°F in the summer and approximately 40°F to 62°F in the winter. Prevailing winds are from the west, and the mean annual precipitation is approximately 16 inches per year. The rainy period is from October to May (U.S. Climate Data, 2020).

2.1.3.2 Topography

The topography of the Inland Area includes the steep hills of the coast range and the alluvial fans, terraces, and flat floodplains of the valleys. Surface elevations range from roughly 25 feet to more than 800 feet above mean sea level in the hills along the northeast boundary of the Inland Area. The Bermed Area is located in the southeastern portion of former NAVWPNSTA Seal Beach Det Concord, east of Bailey Road (TriEco Tt, 2014).

The Bermed Area is located within a sloped valley with rising topography in all directions but the west. The Bermed Area is accessed via one dirt road from the west leading to the earthen berm that previously surrounded a salt lick for cattle. The Bermed Area is not visible from outside of the base because of the surrounding hills (TriEco Tt, 2014).

2.1.3.3 Geology and Soil

The northwest-trending fault systems running through Contra Costa County have resulted in hills formed from the up-thrown blocks and valleys with thick, unconsolidated Pleistocene-age alluvial soil in the down-thrown blocks. The hills in the Inland Area consist of Tertiary rock formations that are exposed along the eastern edge of Los Medanos Hills. The valleys consist of basement rocks covered by alluvium. A north-plunging anticline runs through the middle of the Inland Area and is composed of older alluvium. The Clayton Fault has been classified as active or potentially active and is located near the southwestern base of Los Medanos Hills (TriEco-Tt, 2017).

Numerous soil types have been identified at the former NAVWPNSTA Seal Beach Det Concord. Soil at the Inland Area is predominantly of the Altamont Diablo-Fontana association. The degree of slope generally controls the proportion of Altamont clay to

Fontana silty clay loam. The steeper slopes typically contain a higher percentage of Fontana silty clay loam. Steeper slopes and areas without vegetation can be categorized as having medium to high runoff, and the erosion hazard on these steep, bare soil is moderate to high (TriEco-Tt, 2017).

No soil borings have been advanced at the Bermed Area (TriEco Tt, 2014).

2.1.3.4 Hydrology

The Bermed Area is situated within the Mount Diablo/Seal Creek watershed, which is bounded to the south by the northern peak of Mount Diablo, to the north by Suisun Bay, to the west by the city of Concord, and to the east by the Willow Creek and Kirker Creek Watersheds. Surface water flows overland from the Bermed Area to a small intermittent tributary to Mount Diablo Creek. Surface water from the tributary exits the former NAVWPNSTA Seal Beach Det Concord to the south, where surface water then migrates underground for approximately 1 mile before it reemerges as surface flow within the city of Concord. The nearest surface water to the Bermed Area is a pond located 1,970 feet from the southwestern boundary of the Bermed Area (TriEco-Tt, 2017).

2.1.3.5 Hydrogeology

The Bermed Area is situated on alluvium consisting of interbedded silt, silty clay, and clayey soil. Clays and silts are relatively impermeable to groundwater movement. Depth to groundwater at the Bermed Area has not been measured. Groundwater is most likely deeper than the measured depths (i.e., typically ranging from 35 to 118 feet bgs) in the rest of the Inland Area depending on ground surface elevation (TriEco-Tt, 2017).

2.1.3.6 Ecology

The vegetation in the Bermed Area is primarily valley and foothill grasslands. Dominant species of vegetation are primarily nonnative grass species, such as wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), Mediterranean barley (*Hordeum marinum* ssp. *Gussoneanum*), and Italian ryegrass (*Lolium multiflorum*). In addition, a nonnative forb species, yellow star thistle (*Centaurea solstitialis*), is established on many of the disturbed grassland areas (TriEco-Tt, 2017).

The nearby pond serves as a freshwater marshland habitat and supports birds, mammals, and amphibians. The grassland habitat at the site has been deemed suitable to support the following threatened species: the California tiger salamander (*Ambystoma californiense*) (CTS), the California red-legged frog (*Rana draytonii*) (CRLF), and the Alameda whipsnake (*Masticophis lateralis euryxanthus*). The Alameda whipsnake potentially occurs in the Bermed Area. The upper reaches of Rattlesnake Canyon in the Inland Area east of Bailey Road are within the area identified as potential

habitat for the Alameda whipsnake. The Bermed Area is approximately 1,000 feet south of suitable scrub habitat in the upper Rattlesnake Canyon, with no potential barriers that would exclude the Alameda whipsnake from the site. The biological fence installed around the area investigated during the SI was maintained until the field effort had been completed to prevent these species from reentering the work area. Seven CTFs were trapped within the fenced area and relocated outside of the fenced area during the 2012/2013 trapping season. New biological exclusion fencing was installed in 2017 and covers a smaller footprint than the 2010-2013 fencing. The current biological exclusion fence surrounds the earthen berm (DON, 2022).

2.1.4 Current and Future Land Use

The Navy currently leases out a portion of the Inland Area, including the Bermed Area, as grazing land for cattle. Cattle graze in the Inland Area of NAVWPNSTA Seal Beach Det Concord year-round and rotate among various areas, depending on the availability and condition of vegetation. Access to the Bermed Area is via the Bailey Road gate, which is owned, operated, and guarded by East Bay Regional Parks District (EBRPD). Public access to the Bermed Area is prevented by this gate, and access by EBRPD is pursuant to an agreement with the Navy that is enforced by the Navy caretaker (Navy, 2019).

The City of Concord's Reuse Project Area Plan designates the site as conservation open space. The planned property recipient's (i.e., the EBRPD) planned future use of the site is as a portion of the planned Concord Hills Regional Park (Concord, 2010). The Bermed Area is expected to be designated as open space for the purpose of outdoor recreation.

2.2 Previous Investigations

A series of investigations have been conducted at the Bermed Area between 1983 and 2013. The investigations included an initial assessment study (IAS), preliminary assessment (PA), supplemental PA, SI, RI, and focused feasibility study (FFS). Investigations at the Bermed Area included visual and geophysical surveys, soil sampling, trenching, and investigations and removal of individual subsurface anomalies. All information provided in this section is from the Final FFS for the Bermed Area, UXO Site 0012 (TriEco-Tt, 2017), unless indicated otherwise.

2.2.1 1983 IAS

The 1983 IAS identified IR Site 23A as reportedly being used for EOD operations from the 1940s until 1959, when it was shut down based on complaints about high noise levels associated with detonation. The IAS reported that "the EOD detachment

conducted blows limited to 50 pounds of high explosives." The report recommended no further investigation. The general area was described in the IAS, but the actual site location was not known. The area shown in the IAS as IR Site 23A was later investigated and was shown not to coincide with an EOD area because no munitions were discovered. The Bermed Area was not identified or investigated as part of the 1983 IAS (TriEco-Tt, 2017).

2.2.2 2007 MRP PA

The PA was performed to evaluate whether MEC and MC were present in the area thought to be IR Site 23A. The PA consisted of a visual survey and interviews with installation personnel. No evidence of MEC was found at IR Site 23A. However, the Navy discovered scrap metal on the ground surface near the earthen berm (in what is now the Bermed Area), as well as aircraft canopy ejection tubes and other possible munitions-related items on the surface at the Bermed Area during site walks to locate IR Site 23A. As a result, the PA recommended further evaluation of the area surrounding IR Site 23A (TriEco-Tt, 2017).

2.2.3 2008–2009 Supplemental MRP PA

A supplemental MRP PA was performed at the Bermed Area that consisted of a visual survey and interviews with installation personnel. The supplemental PA recommended an SI be conducted for the Bermed Area because of the presence of possible munitions-related items on the surface at the Bermed Area. The supplemental PA also recommended no further investigation was necessary of the 41-acrea area that was formerly presumed to be the EOD site at IR Site 23A because no munitions-related items were discovered during the site walks (TriEco-Tt, 2017).

2.2.4 2012–2013 MRP SI

The SI was performed to obtain site-specific information to verify whether munitions treatment occurred at the Bermed Area. Field activities included a surface sweep for MPPEH/MEC, a digital geophysical mapping (DGM) survey over 1.8 acres, exploratory trenching, and soil sampling and analysis of MC. The DGM survey identified 657 target anomalies at the Bermed Area. The distribution of anomalies did not appear similar to other open burn/open detonation at the installation. The geophysical survey did not detect any high anomaly density areas indicative of EOD trenches.

Based on the DGM survey results, five trenches were installed, and the spoils were investigated for munitions-related items and metallic debris. Three of the five trenches were installed adjacent to, or near the berm. No MPPEH was discovered during the SI, but three of the five trenches contained MDAS. Most MDAS items were found within

the upper 1 foot bgs, but one MDAS item was found at 5 feet bgs below the surface of the berm (i.e., which correlates to the approximate ground surface elevation prior to construction of the berm).

During trenching, 12 soil samples were collected and analyzed for explosives; sample locations were biased toward MDAS and other metallic debris. None of the samples contained explosives.

No evidence of an ordnance disposal pit was observed during the SI. However, based on the presence of MDAS items in the trenches and the potential for EOD pits to be present in adjacent areas surrounding the SI investigation area, the SI Report recommended that an RI be performed to further evaluate whether MPPEH or associated MC were present at the Bermed Area. The SI Report further recommended that the RI include additional DGM surveys outside of the area surveyed during the SI and intrusive investigations of the anomalies discovered (TriEco-Tt, 2017).

2.2.5 2013–2014 MRP RI

An RI was conducted to evaluate the nature and extent of MPPEH/MEC and MC in soil at the Bermed Area. The RI included additional DGM surveys of 13.5 acres outside the original 1.8-acre DGM survey performed during the SI; intrusive investigation of target anomalies; management and removal of all MPPEH, MDAS, and scrap metal encountered; soil sampling and analysis of explosives and nitroglycerin; and a MEC Hazard Assessment (HA).

In total, 1,794 additional target anomalies were detected at the Bermed Area during the RI DGM surveys. As a result, 2,451 target anomalies (RI anomalies plus 657 anomalies detected during the SI) were intrusively investigated and 2,392 metal items were removed. Of those items, 2,222 (92.9 percent) were scrap metal, 152 (6.4 percent) were MDAS, and 18 (0.7 percent) could not be determined to be MDAS and were thus handled as material documented as an explosive hazard (MDEH) and explosively disposed of on site. Fifty-nine of the targets on the SI and RI dig lists were “no finds” (2.4 percent). MDAS items included fuze components (ignitors and expended fuzes), expended smoke grenades, expended 40-millimeter (mm) cartridge, and tail booms from rocket-fired munitions. Items treated as MDEH included two tail booms, aircraft canopy ejection tubes, tracers, and one fuze component. Two items may have been MDAS, but were treated as MDEH because they were filled with dirt, preventing a visual inspection of the interior. The RI Report does not state if these items were confirmed as MPPEH during demolition. Approximately 200 pounds of MDAS and 587 pounds of scrap metal were removed from the site.

Explosives were detected in 1 of 18 soil samples collected. Detected concentrations were compared with the EPA residential regional screening levels for soil and ecological screening criteria. All soil sample results were less than human health and ecological screening criteria. Because no MC were detected in soil at the Bermed Area at concentrations exceeding human health and ecological screening criteria, no human health or ecological risk assessments of the site were required.

The RI Report concluded that all detectable MPPEH and MDAS were removed from the site, except for what may remain underneath or within the earthen berm, and established a 100-foot clearance buffer beyond any MPPEH item at the Bermed Area. The MEC HA calculated a hazard level of 4 for future use as open space, the lowest available for a munitions response site. Additionally, no MC were present in soil at concentrations that posed an unacceptable risk to human health or the environment (TriEco-Tt, 2014).

The RI Report recommended an FFS be performed to evaluate the appropriateness of a limited-action closure for the site, including land use controls (LUCs) and institutional controls (ICs) to provide notification in the property deed that the site had been used for EOD, and that all detected munitions had been cleared (TriEco-Tt, 2014).

2.2.6 2017 Focused Feasibility Study

An FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area. The RI concluded that all detectable explosive hazards had been removed from the site; however, a small area (approximately 5,250 square feet) under the berm could not be screened because of the thickness of the berm. Therefore, it is possible that detectable explosive hazards remain within or under the berm. Additionally, there remains a non-zero potential for the presence of munitions at the site beyond the limits of detection of current technologies.

The FFS evaluated three remedial alternatives against the nine NCP criteria and one another: Alternative 1, No Action; Alternative 2, LUCs; and Alternative 3, Berm Removal and Munitions Detection, Removal, and Destruction. Alternatives 2 (LUCs) and 3 (Berm Removal and Munitions Detection, Removal, and Destruction) were found to meet the threshold criteria of protection of human health and the environment and compliance with ARARs. The remedial alternatives were evaluated using the following five balancing criteria to weigh major trade-offs among them: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. Based on the comparative analysis, it was concluded that Alternative 3 (Berm Removal and Munitions Detection, Removal, and Destruction) was the highest-ranking alternative (TriEco-Tt, 2017).

2.2.7 2017 Proposed Plan

The PP presented the Navy's preferred alternative of berm removal and munitions clearance to address remaining low-level explosive hazards to human health at the Bermed Area. Based on the information in the RI and FFS, the Proposed Plan identified the earthen berm as the only area requiring a remedial action. The Proposed Plan invited the public to review and comment on the preferred alternative. A public meeting was held on November 15, 2017, that provided an additional opportunity for the public to learn about the Proposed Plan and to provide comments.

2.2.8 2019 Draft Final Record of Decision

Following acceptance of the Proposed Plan, the Navy began preparing the ROD to document their intention for berm removal as the selected remedy. However, at the Draft Final ROD stage, the State of California requested that the Navy collect soil samples for analysis of metals and explosives under any identified munitions items as part of the remedy process. If samples were collected for chemical analysis, then remedial goals for those chemicals must be set in the ROD. During the RI stage, the Navy and regulators agreed that no risk assessment was required because MC concentrations were less than the RI screening levels. To set a remedial goal, a risk assessment is necessary to develop risk-based concentrations and inform selection of site-specific remedial goals. Therefore, the Navy withdrew the Draft Final ROD in lieu of an NTCRA, whereby a removal action goal, consistent with numeric thresholds set forth in the Final RI Work Plan, could be set to allow for assessment of MC, if they were found during the NTCRA. It was agreed that following the NTCRA, barring any unforeseen discoveries of additional contamination, the Navy will reissue a Draft ROD with two alternatives, No Action and LUCs, because all detectable anomalies would be removed (by digital geophysical methods) from the site and no MC would be present in soil at concentrations exceeding the applicable human health and ecological screening levels.

2.3 MEC HA

A MEC HA was prepared to evaluate the explosive hazard posed by MEC/MPPEH items at the Bermed Area. A MEC HA evaluates current risks at a site posed by MEC/MPPEH items and estimates risk reductions by proposed remedial or removal alternatives. The MEC HA addresses the potential severity should a munitions item detonate, the likelihood that a receptor will be able to interact with a munitions item, and the likelihood that the item will detonate should a receptor interact with it. The MEC HA evaluates severity, accessibility, and sensitivity associated with MEC exposure

pathways for receptors at the site under current and anticipated future land use scenarios. Table 2-1 summarizes the results of the MEC HA (Navy, 2019).

The baseline MEC HA score developed for the current land use (grazing) with Navy access controls, prior to clearance activities during the RI, calculated an explosive hazard score of 770 (moderate potential explosive hazard). For the future open space land use scenario in the area containing the earthen berm, the highest risk score was for Alternative 1 (No Action), followed by a medium risk score of 545 for Alternative 2 (LUCs). The risk score for Alternative 3 (Berm Removal, MPPEH Detection, Removal, and Destruction) was 500, which is the lowest score that could reasonably be calculated for this type of land use. The score of 500 indicated that, with implementation of Alternative 3 at the Bermed Area, there would be a low potential for explosive hazard conditions under a future open space land use scenario.

2.4 Source, Nature, and Extent of Contamination

This section describes the conceptual site model (CSM), including source, nature, and extent of MPPEH/MEC contamination at the earthen berm within the Bermed Area based on information from previous investigations and the MEC HA. The CSM is a comprehensive representation of the earthen berm within the Bermed Area that documents the potential for exposure (under current and future land uses) to munitions-related items in berm soil based on the source of contamination, release and transport mechanisms, exposure pathways, and anticipated site receptors. The extent of contamination is discussed relative to the findings of previous investigations. Per the RI Report (TriEco-Tt, 2014), MC in soil do not pose an unacceptable risk to human health and the environment. Also, because no soil contamination was discovered, a release and impacts to groundwater are unlikely. Thus, MC in berm soil are not included in the current CSM. Figure 2-2 provides a graphical representation of the current CSM for MPPEH/MEC.

Although no MC contamination is expected, soil sampling will be done underneath any discovered munitions items, regardless of whether there was evidence of a release, and at post-demolition shot locations where detonation in place or consolidated MPPEH/MEC detonation occurs, if applicable. If MC are identified at concentrations exceeding project screening levels established in the SAP, then the need for a risk assessment will be evaluated.

2.4.1 Sources of Contamination

Although detected munitions have been removed from the Bermed Area, the thickness of soil comprising the berm prevented effective screening of the area under the berm

(i.e., detection methods cannot confirm the presence or absence of MPPEH/MEC under the berm until the berm is removed). Therefore, it is possible that detectable MPPEH/MEC may be present in soil within or under the berm. Additionally, there remains a non-zero potential for the presence of munitions at the site beyond the limits of detection of current technologies.

2.4.2 Release and Transport Mechanisms

Munition-related items may be present within and beneath the earthen berm within the Bermed Area. MEC could be released from berm soil if disturbed during intrusive activities. Natural erosion mechanisms, such as stormwater runoff or frost heave, can also potentially bring buried MEC or MPPEH to the surface; however, these mechanisms are unlikely to occur at the Bermed Area based on current and anticipated future site conditions. Specifically, the topography around the berm is relatively flat and does not generally promote runoff and there is no potential for frost heave to occur at the Bermed Area because there is currently no frost line in Concord, California, and climate change models do not predict temperature changes for the Concord area that would result in frost heave.

2.4.3 Exposure Pathways and Receptors

Based on the current and anticipated land use (see Section 2.1.4), the primary human receptors are future and current commercial/industrial workers (i.e., ranchers and Navy personnel), future and current construction workers, and future recreational users. Potentially complete exposure pathways were identified for these receptors from contact with MEC/MPPEH in soil. Although the Navy currently restricts public access to the Inland Area (including the Bermed Area), a portion of the site is leased as cattle grazing land and future use is intended as open recreational space.

2.4.4 Nature and Extent of Soil Contamination

The 1983 IAS identified IR Site 23A as reportedly being used for EOD operations from the 1940s until 1959, when it was shut down based on complaints about high noise levels associated with detonation. The area shown in the IAS as IR Site 23A was investigated during the 2007 PA and was shown not to coincide with an EOD area because no munitions were discovered. During the PA, scrap metal was discovered on the ground surface near the earthen berm (in what is now the Bermed Area) during walking surveys intended to identify the location of the reputed EOD site. Items found at the earthen berm included aircraft canopy ejection tubes and other possible munitions-related items on the ground surface. As a result, the area around the earthen berm was investigated during a subsequent SI and RI. Although munitions-related debris has been found in the area, the site is atypical for an EOD site because the

amount of munitions-related debris has been very limited, no live munitions items have been found, and no evidence of EOD pits have been discovered. In addition, most of the munitions-related debris has been found on the surface or in the shallow subsurface (less than 1 foot depth). One MDAS item was found at 5 feet bgs in the berm during the RI in 2014. That depth correlates to the approximate ground surface prior to the creation of the berm (TriEco-Tt, 2014).

The site has been used for cattle grazing since reported EOD operations ceased. The berm itself was installed in the 1960s after the reported discontinuation of EOD activities. It appears that the berm was likely installed across a natural drainage path to retain water for cattle (TriEco-Tt, 2017).

Given this historical data, there is no indication that the berm has any association with EOD or open detonation activities.

3.0 Identification of Removal Action Objective

This section describes the RAO to address MPPEH/MEC in soil at the Bermed Area, and summarizes the NTCRA scope and planned activities, schedule, and the ARARs that need to be met to achieve the RAO.

3.1 Removal Action Objective

The overall goal of the NTCRA is to reduce hazards posed to human health and the environment from munitions-related items and explosive hazards (i.e., MPPEH/MEC) remaining in soil within and beneath the berm. As such, the following preliminary RAO was developed:

- Protect human health and the environment by reducing/mitigating the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during ground-disturbing activities associated with current and future site use.

The RAO for this NTCRA may be altered after this EE/CA report is submitted if additional information becomes available from stakeholders or other interested parties that requires reevaluation of the RAO. Any alterations and refinements to the preliminary RAO will be reflected in the final RAO established in the Action Memorandum.

3.2 NTCRA Scope and Planned Activities

The scope of the NTCRA is to address the potential exposure to munitions-related items or explosive hazards to humans from MPPEH/MEC at the site. The following activities are planned to be performed during the NTCRA to meet the RAO.

- Detector-aided surface clearance of berm soil in 6-inch lifts
- Removal of cleared berm soil in 6-inch soil lifts
- Post-removal verification survey using DGM of the berm footprint to verify all anomalies have been removed
- Reacquisition of identified anomalies (if any)
- Excavation and anomaly removal (if required)
- Management of all discovered MPPEH/MEC

Additionally, soil samples will be collected for analysis of metals and explosives under any discovered munitions items, regardless of whether there is evidence of a release, and if MPPEH/MEC are explosively treated (i.e., post-demolition shot). MC results will be used to confirm no contamination remains in soil post-demolition or following

removal of MPPEH/MEC items. No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If the risk assessment results indicate that unacceptable risk is present, then impacted soil will be removed from the site and disposed of at a licensed facility. Per the RI Report (TriEco-Tt, 2014), for the Bermed Area, MC in soil likely does not pose unacceptable risks to human health and the environment.

Because the planned future land use of the site is open space, this EE/CA incorporates a goal to reduce/mitigate explosive hazards at the Bermed Area pending a final remedy determination in a future decision document.

3.3 NTCRA Schedule

The tentative schedule for the NTCRA at the Bermed Area is summarized below.

Activity	Dates
EE/CA Public Notice and 30-Day Comment Period	September/October 2022
Signed Action Memorandum	July 2023
Final Combined NTCRA Work Plan/Sampling and Analysis Plan (SAP)	August 2023
Perform NTCRA Field Activities*	September through October 2023
Final Removal Action Completion Summary Report	September 2024
After Action Report	September 2024

Notes:
* = Biological constraints limit the fieldwork season to between April 1 and October 15.

These dates may be adjusted based on completion of the regulatory agency and public review and comment process.

3.4 Applicable or Relevant and Appropriate Requirements

ARARs include site-specific standards, requirements, criteria, or limitations established under federal environmental law or any more stringent standards, requirements, criteria, or limitations promulgated in accordance with a state environmental statute. The identification of ARARs is related to contaminants, specific site characteristics, and the particular removal action proposed for the site. The NCP (Title 40 CFR Part 300) states, “Removal actions... shall to the extent practicable considering the exigencies of

the situation, attain ARARs under federal environmental or state environmental or facility siting laws" (Title 40 CFR § 300.415[j]).

The NCP (Title 40 CFR § 300.5) defines "applicable requirements" as:

> *…those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.*

The NCP (Title 40 CFR § 300.5) defines "relevant and appropriate requirements" as:

> *…those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.*

State requirements identified in a timely manner and that are more stringent than corresponding federal requirements may be applicable or relevant and appropriate.

The three types of ARARs—chemical-, location-, and action-specific—are described below.

- **Chemical-Specific ARARs** are usually health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, result in the establishment of numeric values (i.e., cleanup levels). These values establish the acceptable amount or concentration of a chemical that may remain in or be discharged to the environment.
- **Location-Specific ARARs** restrict the concentrations of hazardous substances that may remain at a site or the types of response activities that may be performed at a site solely due to its location (e.g., presence of wetlands, habitat for sensitive species, floodplains).
- **Action-Specific ARARs** are requirements for, or limitations on, actions taken to clean up hazardous substances or pollutants. They are identified in relation to the particular activities that are selected as part of the remedy and address the design, construction, and operation of the remedy.

Because CERCLA onsite response actions do not require permitting, only substantive requirements are considered as potential ARARs. Administrative requirements such as approval of or consultation with administrative bodies, issuance of permits, documentation, reporting, recordkeeping, and enforcement are not ARARs for CERCLA actions confined to the site.

ARARs must be identified on a site-specific basis from information about specific chemicals at the site, the site location and specific features of the site, and actions that are being considered as part of the response action. Appendix A identifies and evaluates, on a site-specific basis, information about specific chemicals at the site, the site location and specific features of the site, and actions under consideration as part of the response action, and sets forth the Navy determinations regarding those potential ARARs for each response alternative retained for detailed analysis in this EE/CA. In addition, non-promulgated advisories or guidance issued by federal or state governments, while not legally binding and therefore not ARARs, may be useful and are evaluated in Appendix A as potential “to be considered” requirements that may complement but not override ARARs.

4.0 Identification and Analysis of Removal Alternatives

Potential removal alternatives to address MPPEH/MEC remaining in soil within the earthen berm at the Bermed Area were selected based on the RAO, ARARs, and EPA (1993) guidance. The technologies and process options specific to the response actions are screened, and the retained technologies and process options of each general response action are assembled into potential removal alternatives. Technologies are combined, if applicable, to create alternatives that will meet the RAO that is appropriate for the site conditions and have been shown to be effective at similar sites. The potential removal alternatives are then evaluated with respect to their effectiveness, implementability, and cost.

Based on the guidelines presented in the "Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA" (EPA, 1993), only the most qualified technologies that apply to the media or source of contamination should be discussed in the EE/CA. Limiting the number of alternatives to those that have been selected in the past at similar sites or for similar contaminants provides an immediate focus to the discussion and selection of alternatives. The remainder of this section summarizes the general response actions, presents the evaluation criteria, identifies the potential removal alternatives, and summarizes the analysis of alternatives with respect to the evaluation criteria.

4.1 General Response Actions

This section identifies general response action categories that include:

1. **No Action:** No response actions would be taken. Potential MPPEH would be left in place without implementing any LUCs or active remediation.

2. **LUCs:** LUCs are physical, legal, or administrative mechanisms to implement restrictions on land use and access to limit exposure of landowners or users of the property to potential MPPEH (i.e., ICs and or engineering controls [ECs]). LUCs also can be used to maintain the integrity of a response action. Monitoring and inspections occur to ensure effectiveness of and compliance with restrictions.

3. **Berm Removal, Post-Removal Verification Survey by DGM, and Destruction:** The berm would be cleared and removed in 6-inch lifts to mitigate/reduce the potential for direct contact with explosives and treated by detonation to eliminate the explosive hazard. A post-removal verification survey using DGM methodologies would be performed to verify no detectable explosive anomalies remain in the subsurface within the former berm footprint. Residual

MDAS would be demilitarized and recycled off site. Soil samples would be collected for analysis of MC if a munitions-related item is found or on the footprint of the former munitions item post-detonation. ICs would be included as de-facto restrictions controlled by the Navy to reduce/mitigate explosive hazards and risk of residual munitions in soil.

4. **Berm Removal, Post-Removal Verification Survey by Advanced Geophysical Classification (AGC), and Destruction:** The berm would be cleared and removed in 6-inch lifts to mitigate/reduce the potential for direct contact with explosives and treated by detonation to eliminate the explosive hazard. A post-removal verification survey using AGC methodologies would be performed to verify no detectable explosive anomalies remain in the subsurface within the former berm footprint. Residual MDAS would be demilitarized and recycled off site. Soil samples would be collected for analysis of MC if a munitions-related item is found or on the footprint of the former munitions item post-detonation. ICs would be similar to that described in Alternative 3.

The no-action alternative is retained throughout the evaluation process as required by the NCP to provide a baseline for comparison with other alternatives. Table 4-1 summarizes the screening of technologies and processes associated with the general response actions. The removal alternatives discussed in Section 4.2 were selected based on the general response actions.

4.2 Description of Removal Alternatives

The following alternatives were identified to address MPPEH/MEC remaining in soil at the Bermed Area based on the general response actions screening discussed in Section 4.1:

- Alternative 1, No Action
- Alternative 2, LUCs
- Alternative 3, Berm Removal, Post-Removal Verification Survey by DGM, and Destruction
- Alternative 4, Berm Removal, Post-Removal Verification Survey by AGC, and Destruction

Sections 4.3.1, 4.3.2, and 4.3.3 describe the components of each alternative. Specifically, the alternatives are analyzed for effectiveness, implementability, and cost. Following the individual analysis of alternatives (see Section 4.4), each alternative is compared against the others to identify the recommended alternative (see Sections 5.0 and 6.0).

4.2.1 Alternative 1 – No Action

Under Alternative 1, no action would be taken at the site under current or future land use scenarios and berm soil and potential munitions-related items would be left in place. The no-action alternative is evaluated as required by the NCP to provide a baseline for comparison with other removal alternatives.

4.2.2 Alternative 2 – Land Use Controls

Under Alternative 2, LUCs would be implemented to address the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during intrusive or ground-disturbing activities. The LUCs alternative consists of a prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and military munitions recognition and safety training for construction personnel are provided. These LUCs would be enforced by the Navy until a Final ROD is signed.

UXO construction support may be required in the short-term at the Bermed Area for activities relating to facility maintenance and for licensed activities under Navy oversight. Discovery of any munitions-related item(s) shall be reported to the Navy. For most licensed activities, subsurface disturbance is prohibited. In rare cases when subsurface activities are authorized, UXO construction support is required by and overseen by the Navy caretaker.

The authorization of subsurface activities with UXO construction support under Navy oversight also requires military munitions recognition and safety training to increase awareness of and ability to recognize when a munition is encountered. Prior to planned intrusive activities, a qualified UXO technician shall provide military munitions recognition and safety training to every worker who will perform or be present in the immediate vicinity of intrusive activities. These licensed activities are not expected to be performed close to the base boundary where the surrounding community would be able to meaningfully see, hear, or be impacted by those activities. Should these activities impact the community, the Navy may, in coordination with the City of Concord, provide educational awareness materials and community outreach to mitigate the risks of an uncontrolled encounter by the general public, as appropriate.

For on-call construction support, UXO-qualified technician must be contacted prior to the start of intrusive activities to ensure their availability, be advised about the project, and placed “on call” to assist if munitions-related items are encountered. If munitions-related items are encountered, intrusive and ground-disturbing work at the Bermed Area will immediately cease, and the on-call UXO-qualified technician will be notified to come to the RDA. If a munitions item is discovered, the UXO-qualified technician shall clear the site of all people and notify the Navy immediately. Response to the suspected

munition may be in the form of the Navy's EOD or the municipality bomb squad through 911.

For onsite construction support, the implementation of construction support is similar to the on-call support in the identification and notification of potential munitions. The principal difference is the length of presence at the site. The UXO-qualified technician must be contacted prior to the start of intrusive activities, be advised about the project, and scheduled to be present on the site during all intrusive construction activities.

4.2.3 Alternative 3 – Berm Removal, Post-Removal Verification Survey by DGM, and Destruction

Alternative 3 involves detector-aided surface clearance of berm soil in 6-inch lifts; removal of cleared berm soil in 6-inch soil lifts; post-removal verification survey using DGM methodologies of the berm footprint to verify all anomalies have been removed; reacquisition of identified anomalies, if any; intrusive investigation and anomaly removal, if required; and management of all discovered MPPEH/MEC.

Berm soil would be screened in 6-inch lifts using detector-aided equipment to identify and remove MPPEH/MEC, MDAS, and non-munitions-related metal from the berm. Once all berm soil is removed, a post-removal verification survey would be performed on the subsurface of the former berm footprint. The post-removal verification survey would be performed using a man-portable EM61. If anomalies are found during the post-removal verification survey, they would be reacquired, intrusively investigated, and removed. The post-removal verification survey would be re-performed in those areas to verify all anomalies have been removed from the berm footprint.

Each MPPEH/MEC item found would be properly documented, inspected, and classified. Items that cannot be classified as MDAS due to an un-inspectable void would be treated as MEC. MEC would be destroyed via detonation (either destruction in place or consolidated shot). Munitions debris (after inspection and certification as MDAS) would be demilitarized using propane and oxygen torches and/or wet band saws to ensure it no longer resembled a munition item. These fragments would be placed into 55-gallon drums for subsequent transport to a certified facility for final disposal by smelting. Non-munitions related scrap would be recycled at a licensed offsite facility.

Additionally, soil samples would be collected for analysis of MC (metals and explosives) if munitions-related items are discovered during the intrusive investigation or MPPEH/MEC are explosively treated (i.e., post-demolition shot). MC results would only be used to confirm no contamination remains in soil following removal of munitions-related items or post-demolition. No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. If MC are

identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If the risk assessment results indicate that unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility.

Excavated areas would be restored to match the existing grade. Vegetation reseeding may be applicable in the project staging areas.

Section 4.2.5 discusses the general project approach developed to assist with the analysis of Alternative 3, including the development of rough order of magnitude pricing.

4.2.4 Alternative 4 – Berm Removal, Post-Removal Verification Survey by AGC, and Destruction

Alternative 4 involves detector-aided surface clearance of berm soil in 6-inch lifts; removal of cleared berm soil in 6-inch soil lifts; post-removal verification survey with AGC methodologies of the berm footprint to verify all anomalies have been removed; reacquisition of identified anomalies, if any; intrusive investigation and anomaly removal, if required; and management of all discovered MPPEH/MEC.

Berm soil would be screened in 6-inch lifts using detector-aided equipment to identify and remove MPPEH/MEC, MDAS, and non-munitions-related metal from the berm. Once all berm soil is removed, a post-removal verification survey would be performed on the subsurface of the former berm footprint. The post-removal verification survey would be performed using an UltraTEM operating in dynamic mode. If anomalies are found during the post-removal verification survey that meet the target threshold for potential munitions (as developed by a geophysicist and agreed upon by project stakeholders), they would be reacquired, intrusively investigated, and removed. The post-removal verification survey would be re-performed in those areas to verify all anomalies exceeding the target threshold have been removed from the berm footprint.

All recovered MPPEH items would be inspected and classified as MEC or MDAS. MEC items would be explosively treated at the site. MDAS (after demilitarization) and other metal debris would be recycled or landfilled off site as appropriate.

Additionally, soil samples would be collected for analysis of MC (metals and explosives) if munitions-related items are discovered during the intrusive investigation or MPPEH/MEC are explosively treated (i.e., post-demolition shot). MC results would only be used to confirm no contamination remains in soil following removal of munitions-related items or post-demolition. No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment would be evaluated. If the results of a risk assessment indicate that

unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility.

Excavated areas would be restored to match the existing grade. Vegetation reseeding may be applicable in the project staging areas.

Section 4.2.5 discusses the general project approach developed to assist with the analysis of Alternative 4, including the development of rough order of magnitude pricing.

4.2.5 General Project Approach

Sections 4.2.5.1 through 4.2.5.6 discuss the general project approach for Alternatives 3 and 4.

4.2.5.1 Work Plans/Reporting

Prior to excavation activities, a Work Plan, MC SAP, and Munitions Response Quality Assurance Project Plan would be combined into an NTCRA Work Plan/SAP to describe the goals, methods, and procedures for the NTCRA activities that the three documents would have required. The combined NTCRA Work Plan/SAP would describe the field and data quality methods and procedures to be performed and would include the following appendices: Contractor Quality Control Plan, Community Relations Plan, and an Environmental Protection Plan. Additionally, an Accident Prevention Plan (APP), including Site Safety and Health Plan (SSHP), and Explosives Safety Submission (ESS) would be prepared under separate cover.

Planning and execution would take into consideration green remediation metrics in accordance with EPA's "Methodology for Understanding and Reducing a Project's Environmental Footprint" (EPA, 2012). Sections 4.3.1 and 4.4 present additional information on the evaluation of green remediation metrics for a removal action.

After the NTCRA has been completed, an After Action Report (AAR) would be prepared. The AAR would summarize the actions that occurred (or did not occur), the MPPEH/MEC items recovered, and the relative effectiveness or any limitations of the technologies used to complete the NTCRA.

A Removal Action Completion Summary Report (RACSR) also would be completed after fieldwork is completed for the NTCRA. The RACSR would document all field activities completed to date and would include an updated vertical CSM, any survey data, validated laboratory data, waste manifests, and other pertinent documentation of the NTCRA. The information in the RACSR would be sufficient to demonstrate successful completion of the NTCRA and attainment of the RAO.

The combined NTCRA Work Plan/SAP and RACSR would be submitted for regulatory review and comment, which would be incorporated in the final documents. The APP/SSHP would be submitted to the Navy and Marine Corps Public Health Center for review and approval. The ESS and AAR would be submitted to the Naval Ordnance Safety and Security Activity for review and approval. The ESS would then be submitted to the DoD Explosives Safety Board for final approval.

4.2.5.2 Berm Soil Clearance and Removal

To achieve the NTCRA objective for MPPEH/MEC items, a detector-aided (all-metals detector, MineLab, or similar) subsurface clearance of the berm would be performed in 6-inch lifts with earth-moving machinery removing the cleared lifts (Figure 4-1). This process would be repeated until the berm has been completely removed. Once the berm is removed, the UXO team would perform a post-removal verification survey of the berm footprint using a man-portable EM61 as described in Section 4.2.5.3.

Following each 6-inch lift, the heavy equipment operator would deposit the cleared excavated soil in a specified location on top of 6-mm reinforced polyfilm plastic sheeting. At that point, the soil would be considered free of MPPEH/MEC, MD, and MC.

If a munitions item is identified during clearance activities, soil from a 3-foot by 3-foot area centered on the item, and including soil 1- foot above and 1- foot below the munitions item, would be excavated and stockpiled separately pending laboratory analysis (see Section 4.2.5.5). At that point, the soil would be considered free of MPPEH/MEC and MD; however, determination of MC contamination would be pending receipt of laboratory results.

Excavations would be backfilled with clean excavated soil (i.e., no munitions items found in the soil or laboratory results indicate MC concentrations are less than the project screening levels established in the SAP [see Section 4.2.5.1]) , and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes. The disturbed areas would be reseeded using a seed mix composed of plants native to the area if needed.

4.2.5.3 Post-Removal Verification Survey

After the berm has been removed, a 100 percent post-removal verification survey (i.e., over 100 percent of the berm footprint) would be performed using either a man-portable EM61 (Alternative 3 – DGM) or an UltraTEM operating in dynamic mode (Alternative 4 – AGC) to verify no anomalies remain in subsurface soil within the berm footprint. The use of AGC in dynamic mode is being considered because it focuses the team on the removal of targets of interest while avoiding the excavation of non-explosive anomalies. Geophysical data would be reviewed daily to ensure the equipment is passing quality

control requirements. A California-licensed geophysicist would then process the data to determine if any anomalies remain.

If remaining anomalies are identified during post-removal verification activities, the geophysicist would create a target list. Reacquisition of subsurface targets would be performed by two-person UXO teams (comprising UXO Technicians [Techs] II and I). The team will use a real-time-kinematic (RTK)-global positioning system (GPS) to locate each target location based on of the preloaded data collected during the post-removal verification survey. UXO Techs would then intrusively investigate the location.

Once the remaining anomaly is intrusively investigated, the man-portable EM61 (Alternative 3) would be used to verify the location is clear of anomalies or an UltraTEM in dynamic mode (Alternative 4) would be used to check for targets of interest while avoiding the excavation of non-explosive anomalies. Geophysical data would be recorded over the location and reprocessed to confirm the anomaly is removed. Clean excavated soil (see Section 4.2.5.2) would be used as backfill to the excavation).

4.2.5.4 Management of MPPEH/MEC

All MPPEH would undergo a 100 percent inspection by a UXO Tech III, followed by 100 percent inspection by the SUXOS. Items that cannot be classified as MDAS due to an un-inspectable void would be treated as MEC. MEC would be destroyed via detonation (either destruction in place or consolidated shot). Items classified as MEC and unacceptable to move would be explosively treated at the site. If the MPPEH/MEC is acceptable to move, it may be transported to a consolidated shot location within the footprint of the former berm location. All MEC items will be guarded until demolition is performed. A UXO Tech would perform demolition operations on a periodic as-needed basis. If required, a licensed commercial carrier would deliver explosives to the site the same day of demolition activities. No donor explosives would be stored at the site.

Consolidated demolition shots would be used to the extent possible. Destruction in place would occur on items deemed unacceptable to move by the Senior UXO Supervisor (SUXOS) and UXO Safety Officer (UXOSO).

Items classified as MDAS would be stored separately. The UXOSO would then perform an independent inspection and 100 percent reinspection of the items prior to their final certification as MDAS. All certified MDAS, prior to release to the public and after a 100 percent inspection by the SUXOS, will be demilitarized, as needed, until it no longer resembles military munitions. Munitions debris (after inspection and certification as MDAS) would be demilitarized by ERRG using propane and oxygen torches and or wet band saw in accordance with DoD Manual 4160.21, “Defense Materiel Disposition, Volumes 1 through 4” (DoD, 2019b) and DoD Manual 4160.28, “Defense Demilitarization, Volumes 1 through 3” (DoD, 2019a). Demilitarized fragments would be placed into 55-

gallon drums for subsequent transport to an MDAS certified recycling facility for final disposal by smelting. MDAS would be transported in locked containers, under chain-of-custody, and with an accompanying DD 1348-1A form to the designated final disposal facility for recycling. Non-munitions related scrap would be recycled at a licensed offsite facility.

4.2.5.5 Soil Sampling

Discrete soil samples would only be collected underneath any discovered munitions items, regardless of whether there was evidence of a release, and at post-demolition shot locations where detonation in place or consolidated MPPEH/MEC detonation occurs, if applicable. Sample locations will be surveyed and documented using an RTK-GPS. All soil samples would be analyzed for metals by EPA Methods 6020 and 7471 and explosives by EPA Method 8330.

No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment would be evaluated. If the risk assessment results indicate that unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility.

4.2.5.6 Monitoring and Avoidance

Because wildlife species, including the CTS and CRLF, may be present at the Bermed Area, biological monitoring and avoidance would be performed under Alternatives 3 and 4. Biological education training would be provided to the field personnel. A USFWS-qualified biologist (reviewed by CDFW-OSPR) would be present during all ground-disturbing field activities. Sensitive species are not expected to affect the implementation of Alternatives 3 and 4, but the biologist would confirm that sensitive species continue to be absent from the site. Appropriate avoidance and minimization measures would be implemented in accordance with the "Biological Opinion for the Environmental Investigations on the Former Naval Weapons Station Seal Beach, Detachment Concord, Contra Costa County, California" (USFWS, 2012). The CDFW Provisions will be considered in the development of protective measures to reduce/prevent impacts to the ecosystem, particularly for threatened, endangered, or protected species (CDFW, 2012).

4.3 Evaluation Criteria

The analysis of alternatives is qualitative in nature and is based on the following three evaluation criteria as recommended by EPA (1993): effectiveness, implementability, and relative cost. The following subsections summarize each criterion.

4.3.1 Effectiveness

Alternatives are evaluated for effectiveness based on the criteria summarized below.

- Overall Protection of Human Health and the Environment: This criterion assesses the ability of the alternative to be protective of human health and the environment under present and future land use conditions.
- Compliance with ARARs: Identifies whether implementation of the alternative would comply with all chemical-specific, action-specific, and location-specific ARARs.
- Long-Term Effectiveness: This criterion addresses the magnitude of residual risk remaining after implementation of the alternative. It addresses the adequacy and reliability of controls established by an alternative to maintain reliable protection of human health and the environment over time.
- Reduction of Toxicity, Mobility, and Volume through Treatment: Identifies whether implementation of the alternative would reduce the toxicity, mobility, or volume of contaminants in soil.
- Short-Term Effectiveness: This criterion addresses the effects of an alternative during the construction and implementation phase until the RAO is met. This criterion includes the time it takes for the remedy to achieve protectiveness and the potential to create adverse impacts on human health and the environment during construction and implementation. Environmental impacts are provided in this EE/CA for overall consideration of the NTCRA alternatives. The potential impacts to the environment that could occur during implementation of the alternatives were considered and include land and species impacts, power and water consumption, use of natural resources, air emissions, and production of waste materials (Appendix C).

4.3.2 Implementability

Alternatives are evaluated for implementability based on the criteria summarized below.

- Technical Feasibility: Evaluates constructability and operational considerations, as well as demonstrated performance/useful life.
- Administrative Feasibility: Evaluates those activities such as statutory limits, permitting requirements, easements and rights of way, and impacts on adjoining property.
- Availability of Services and Materials: Evaluates the availability of qualified vendors and/or contractors to provide the services and/or materials needed to complete the tasks required by the alternative. For the Bermed Area, this could include site preparation, design, equipment, personnel, services and

materials, transportation times, and availability of disposal facilities that are licensed to accept nonhazardous solid waste.

- State Acceptance: The concurrence of the State of California with the proposed alternatives.
- Community Acceptance: The acceptance of the proposed alternatives by stakeholders.

4.3.3 Cost

Alternatives are evaluated for cost based on the following criteria:

- Capital Costs and Operation and Maintenance (O&M) Costs
- Post-Removal Site Control Costs
- Present Value

For the purposes of the cost estimate summaries (Appendix B), selected contingency and technical service percentages are based on "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study" (EPA, 2000). A typical construction contingency typically ranges from 10 to 20 percent. Technical service percentages are based on capital cost expenditures associated with each alternative. The present values were calculated using a 1.9 percent real discount rate.

Appendix B presents total capital cost, total periodic cost (30 year period), total cost (i.e., total capital cost + total periodic cost), and present-value cost (i.e., cost if all work [capital + periodic] were performed today) for each alternative. The general cost components for each alternative are described below.

- **Alternative 1:** No costs are included under this alternative.
- **Alternative 2:** Preparation of a LUC RD and Site Management Plan.
- **Alternative 3:** Preparation of removal action planning documents, berm removal and MPPEH demolition and disposal, post-removal verification survey by DGM, MC soil sampling, LUC RD and Site Management Plan. Assumes no target anomalies will be identified during the post-removal verification survey requiring intrusive investigation.
- **Alternative 4:** Preparation of removal action planning documents, berm removal and MPPEH demolition and disposal, post-removal verification survey by AGC, MC soil sampling, LUC RD and Site Management Plan. Assumes no target anomalies will be identified during the post-removal verification survey requiring intrusive investigation.

4.4 Individual Analysis of Alternatives

This section presents the detailed individual analysis of Alternatives 1, 2, 3, and 4 based on their effectiveness, implementability, and cost. Table 4-2 summarizes the analysis of each alternative and the rough order of magnitude costs developed for each alternative. Appendix B includes supporting information for the rough order of magnitude costs. Following the individual analysis of alternatives presented below, each alternative will be compared against the others to select the recommended alternative (see Sections 5.0 and 6.0).

The qualitative descriptions for each removal alternative are described below.

Alternative 1 (No Action): Section 4.2.1 describes Alternative 1.

- Effectiveness: Alternative 1 would not provide short-term or long-term protection of human health because explosive hazards contributing risks to human receptors would not be removed from the Bermed Area. This alternative would not involve any action, so a comparison with ARARs is not applicable. The time required to achieve the RAO would be indefinite, and risks to current and future receptors would remain indefinitely because munitions items and explosive hazards do not readily degrade in the environment. The toxicity, mobility, or volume of contamination at the site would not be reduced through treatment, and potential exposure pathways would remain for current and future receptors. Alternative 1 would not have any adverse short-term effects because it would not involve remediation activities that might pose risks to the community, workers, or the environment.

- Implementability: No resources, services, or materials would be required to implement Alternative 1, and no known administrative considerations would affect its overall implementability. As a result, Alternative 1 would be technically and administratively feasible. State and community acceptance for Alternative 1 will be assessed following comment on this EE/CA.

- Costs: The total present value cost for Alternative 1 is $0 (Appendix B). No capital or site control costs, contingencies, or professional or technical services are associated with this alternative.

Alternative 2 (LUCs): Section 4.2.2 describes Alternative 2.

- Effectiveness: This alternative is protective of human health and generally meets the RAO. LUCs would limit potential exposure to MPPEH/MEC through prohibitions on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and

military munitions recognition and safety training for construction personnel are provided. LUCs would be enforced by the Navy until a Final ROD is signed. However, protection of human health would depend on the reliability of implementation of these controls. Alternative 2 complies with the identified ARARs (see Table 4-2). Its long-term effectiveness is moderate because it depends on the reliability of monitoring and enforcement of prohibitions on intrusive activities. The toxicity, mobility, or volume of contamination at the site would not be reduced through treatment. There are no short-term increased risks because MPPEH/MEC would not be disturbed during implementation of this alterative.

- Implementability: Alternative 2 would be technically and administratively feasible, and services or materials necessary to implement the LUCs would be readily available in the local community. State and community acceptance for Alternative 2 will be assessed following comment on this EE/CA.

- Costs: Alternative 2 includes capital costs for developing and implementing LUCs. There are no periodic costs (e.g., annual O&M or 5-year review activities) or contingency costs associated with this alternative. The total present-value cost for Alternative 2 is $70,000 (Appendix B). The estimated total cost for Alternative 2 is $70,000 (ranges from $49,000 to $105,000).

Alternative 3 (Berm Removal, Post-Removal Verification Survey [DGM], and Destruction): Section 4.2.3 describes Alternative 3.

- Effectiveness: Alternative 3 would provide short-term and long-term protection of human health. Implementation of this alternative would comply with the ARARs (see Table 4-2). The RAO, which is to reduce/mitigate exposure to munitions items and explosive hazards in the subsurface, would be achieved through removal activities. The toxicity and/or mobility and volume of contamination at the site would not be reduced through chemical treatment; however, it would be reduced through removal and/or destruction. Once the anomalies are intrusively investigated, the EM61 would be used to verify the location is clear of anomalies. Alternative 3 is considered to be reliable based on accepted industry standards for similar projects. Removal activities could be implemented in such a way that short-term impacts to human health and the environment would be minimized. Public and worker protection would be provided during implementation through strict adherence to an APP/SSHP. An exclusion zone and a support zone would be established at the site where equipment is being operated and there is a potential for site personnel to be exposed to MPPEH. The exclusion zone would encompass the areas of intrusive activities; any persons entering this

zone must be authorized to be present during MPPEH clearance or disposal activities. The support zone is where equipment and material storage areas, employee break areas, safety information and supplies, etc. are located and would be considered open access for site personnel. Items recovered during detector-aided clearance of berm soil and intrusive investigation of subsurface geophysical anomalies would go through an inspection process. Items identified as MEC would be explosively destroyed. Demilitarized fragments would be placed into 55-gallon drums for subsequent transport to an MDAS recycling facility for smelting. Non-munitions-related debris may be transported to a recycling center. MDAS would be transported in locked containers, under chain-of-custody, and with an accompanying DD 1348-1A form to the designated final disposal facility. Excavations would be backfilled with clean excavated soil (see Section 4.2.5.2), and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes. If needed to restore impacted habitat and prevent erosion, the disturbed areas would be reseeded using a seed mix composed of plants native to the area and watered to ensure successful seeding (e.g., 70% vegetative cover within 2 years).

- Implementability: Alternative 3 would be technically and administratively feasible, and most services and materials would be readily available in the local community or could be easily brought to the site. Excavation and destruction are a proven method for achieving long-term reduction of anomalies. Alternative 3 would not affect future use of the site and could be implemented in a way that would minimize environmental impacts. Field activities for Alternative 3 could be completed within 2 months. The terrain of the anomaly areas within the site is relatively flat and would not pose any additional concerns. A possible constraint to implementing Alternative 3 would be weather conditions causing a schedule delay. Alternative 3 is considered administratively feasible.

- Costs: Alternative 3 includes capital costs for removing anomalies from the berm. Following excavation and the post-removal verification survey using DGM methodologies, the anomaly excavations would be backfilled with clean excavated soil and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes. There are no periodic costs (e.g., annual O&M or 5-year review activities) associated with this alternative. For this cost estimate, the design contingency was estimated at 10 percent and the construction contingency was estimated at 10 percent. Technical services for projects with costs between $400,000 and $1,000,000 include project management (10 percent), remedial design (12 percent), and

construction management (10 percent). The total present-value cost for Alternative 3 is $509,700 (Appendix B). The estimated total cost for Alternative 3 is $509,700 (ranges from $356,790 to $764,550).

Alternative 4 (Berm Removal, Post-Removal Verification Survey [AGC], and Destruction): Section 4.2.4 describes Alternative 4.

- Effectiveness: Alternative 4 would provide short-term and long-term protection of human health. Implementation of this alternative would comply with ARARs (see Table 4-2). The RAO, which is to reduce/mitigate exposure to munitions items and explosive hazards in the subsurface, would be achieved through removal activities. The toxicity and/or mobility and volume of contamination at the site would not be reduced through chemical treatment; however, it would be reduced through removal and/or destruction. Once the anomalies are intrusively investigated, the UltraTEM in dynamic mode would be used to verify the location is clear of anomalies. Alternative 4 is considered to be reliable based on accepted industry standards for similar projects. Removal activities could be implemented in such a way that short-term impacts to human health and the environment would be minimized. Public and worker protection would be provided during implementation through strict adherence to an APP/SSHP. An exclusion zone and a support zone would be established at the site where equipment is being operated and there is a potential for site personnel to be exposed to MPPEH. The exclusion zone would encompass the areas of intrusive activities; any persons entering this zone must be authorized to be present during MPPEH clearance or disposal activities. The support zone is where equipment and material storage areas, employee break areas, safety information and supplies, etc. are located and would be considered open access for site personnel. Items recovered during detector-aided clearance of berm soil and intrusive investigation of subsurface geophysical anomalies would go through an inspection process. Items identified as MEC would be explosively destroyed. Demilitarized fragments would be placed into 55-gallon drums for subsequent transport to an MDAS recycling facility for smelting. Non-munitions-related debris may be transported to a recycling center. MDAS would be transported in locked containers, under chain-of-custody, and with an accompanying DD 1348-1A form to the designated final disposal facility. Excavations would be backfilled with clean excavated soil (see Section 4.2.5.2), and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes. If needed to restore impacted habitat and prevent erosion, the disturbed areas would be reseeded using a seed mix composed of plants

native to the area and watered to ensure successful seeding (e.g., 70% vegetative cover within 2 years).

- Implementability: Alternative 4 would be technically and administratively feasible, and most services and materials would be readily available in the local community or could be easily brought to the site. Excavation and destruction are a proven method for achieving long-term reduction of anomalies. Alternative 4 would not affect future use of the site and could be implemented in a way that would minimize environmental impacts. Field activities for Alternative 4 could be completed within 2 months. The terrain of the anomaly areas within the site is relatively flat and would not pose any additional concerns. A possible constraint to implementing Alternative 4 would be weather conditions causing a schedule delay. Alternative 4 is considered administratively feasible.

- Costs: Alternative 4 includes capital costs for removing anomalies from the berm. There are no periodic costs (e.g., annual O&M or 5-year review activities) associated with this alternative. For this cost estimate, the design contingency was estimated at 10 percent and the construction contingency was estimated at 10 percent. Technical services for projects with costs between $400,000 and $1,000,000 include project management (10 percent), remedial design (12 percent), and construction management (10 percent). The total present-value cost for Alternative 4 is $576,900 (Appendix B). The estimated total cost for Alternative 4 is $576,900 (ranges from $403,830 to $865,350).

Table 4-2 summarizes the analysis for each alternative and the rough order of magnitude costs developed for each alternative. Appendix B includes supporting information for the rough order of magnitude costs.

Table 4-3 summarizes the estimated values for the green remediation metrics for materials, waste, water, energy, and air. The green remediation metrics were calculated using the level of detail and assumptions discussed in Section 4.2 and Appendix C includes supporting information for the green remediation metric values. As part of the NTCRA planning, including development of the combined NTCRA Work Plan/SAP, green remediation best management practices (BMPs) will be evaluated and selected as appropriate to minimize the environmental footprint of the NTCRA. The guidance in “Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites” (EPA, 2008) and “Methodology for Understanding and Reducing a Project’s Environmental Footprint” (EPA, 2012) would be considered to facilitate selection of green remediation BMPs for the NTCRA.

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5.0 Comparative Analysis of Removal Alternatives

The removal alternatives identified in Section 4.2 were compared with one another using the evaluation criteria described in Section 4.3. This section describes the results of the comparative analysis. Table 5-1 presents the comparative analysis of the alternatives for munitions-related items within or beneath the earthen berm at the Bermed Area. Appendix A presents the detailed ARARs analysis for each alternative.

5.1 Effectiveness

Alternative 1 is considered the least effective alternative to protect human health and the environment because risks to current and future receptors would remain indefinitely and the toxicity, mobility, and volume of munitions-related items through treatment at the site would not be reduced.

Alternative 2 is considered to be a moderately effective alternative to protect public health and the environment because LUCs are as effective as removal for protecting human health, although not the environment. However, LUCs would require long-term maintenance of administrative controls (as identified in Section 4.2.2) to ensure risks to current and future receptors continue to be mitigated/reduced, and toxicity, mobility, and volume through treatment of munitions-related items at the site would not be reduced. Alternative 2 meets identified ARARs.

Alternative 3 is considered very effective for protection of human health and the environment because any anomalies identified within or beneath the berm would be removed, thus eliminating the explosive hazard posed by detectable munitions to current and future receptors. Alternative 3 meets identified ARARs.

Alternative 4 is considered very effective for protection of human health and the environment because all targets of interest would be removed. Alternative 4 differs from Alternative 3 in that it would verify all anomalies have been removed from the site using AGC methodologies instead of DGM methodologies. Alternative 4 meets identified ARARs.

Based on a comparative analysis of effectiveness, Alternatives 3 and 4 are equally effective at reducing the potential exposure to munitions-related items or explosive hazards posed to current and future receptors.

5.2 Implementability

Implementability is not an issue with Alternative 1 because no technical or administrative feasibility is required and no services or materials are needed.

Alternative 2 is technically and administratively feasible and the services and materials necessary to implement the alternative are readily available. However, LUCs have the potential to fail over time when administrative requirements are not followed and is therefore rated slightly lower than the other alternatives for implementability.

Alternatives 3 and 4 are both technically and administratively feasible, and the services and materials necessary to implement the alternatives are readily available. Alternatives 3 and 4 are considered equal in terms of implementability; however, depending on the method of execution and the number of targets identified, Alternative 4 could possibly require some extra time to execute (i.e., on the order of a couple weeks).

5.3 Cost

The costs for each alternative are summarized below and detailed in Appendix B. Cost components for each alternative are identified in Section 4.3.3.

- The estimated total cost for Alternative 1 is $0.
- The estimated total cost for Alternative 2 is $70,000 (ranges from $49,000 to $105,000). The estimated capital cost is $70,000, with an annual/period cost of $0. The estimated total present-value cost is $70,000.
- The estimated total cost for Alternative 3 is approximately $509,700 (ranges from $356,790 to $764,550). The estimated capital cost is $509,700, with an annual/period cost of $0. The estimated total present-value cost is $509,700.
- The estimated total cost for Alternative 4 is $576,900 (ranges from $403,830 to $865,350). The estimated capital cost is $576,900, with an annual/period cost of $0. The estimated total present-value cost is $576,900.

Alternatives 3 and 4 would remove all detectable anomalies from the Bermed Area. Alternative 3 is considered the most cost-effective alternative. At the conclusion of the NTCRA, the Navy will have removed all detectable MPPEH/MEC in and below the earthen berm. Given the limits of the detection technology at this time, a risk of residual munitions remains that will be addressed in a final remedy decision document.

6.0 Recommended Removal Alternative

Based on the comparative analysis of the removal alternatives, the Navy recommends **Alternative 3, Berm Removal, Post-Removal Verification Survey by DGM, and Destruction**. Alternative 3 was selected because it is the most-cost-effective alternative that would meet the RAO for the site by removing detectable potential MPPEH/MEC in and below the earthen berm, thereby reducing/mitigating the explosive hazard to human health and the environment.

Implementation of Alternative 3 is estimated to require approximately 3 years for planning, site preparation, MPPEH and berm soil removal, MC soil sampling, post-removal verification survey using a man-portable EM-61 of the berm footprint, MPPEH inspection and classification of MEC and MDAS, detonation of MPPEH/MEC, certification and demilitarization of MDAS, disposal of certified MDAS and non-munitions-related metal, soil sampling (if necessary), site restoration, and reporting.

The alternative selected by the Navy for an NTCRA at the Bermed Area will be documented in an Action Memorandum, which will be finalized after the public comment period on the final version of this EE/CA, and community acceptance will be addressed in the Action Memorandum.

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7.0 References

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FIGURES

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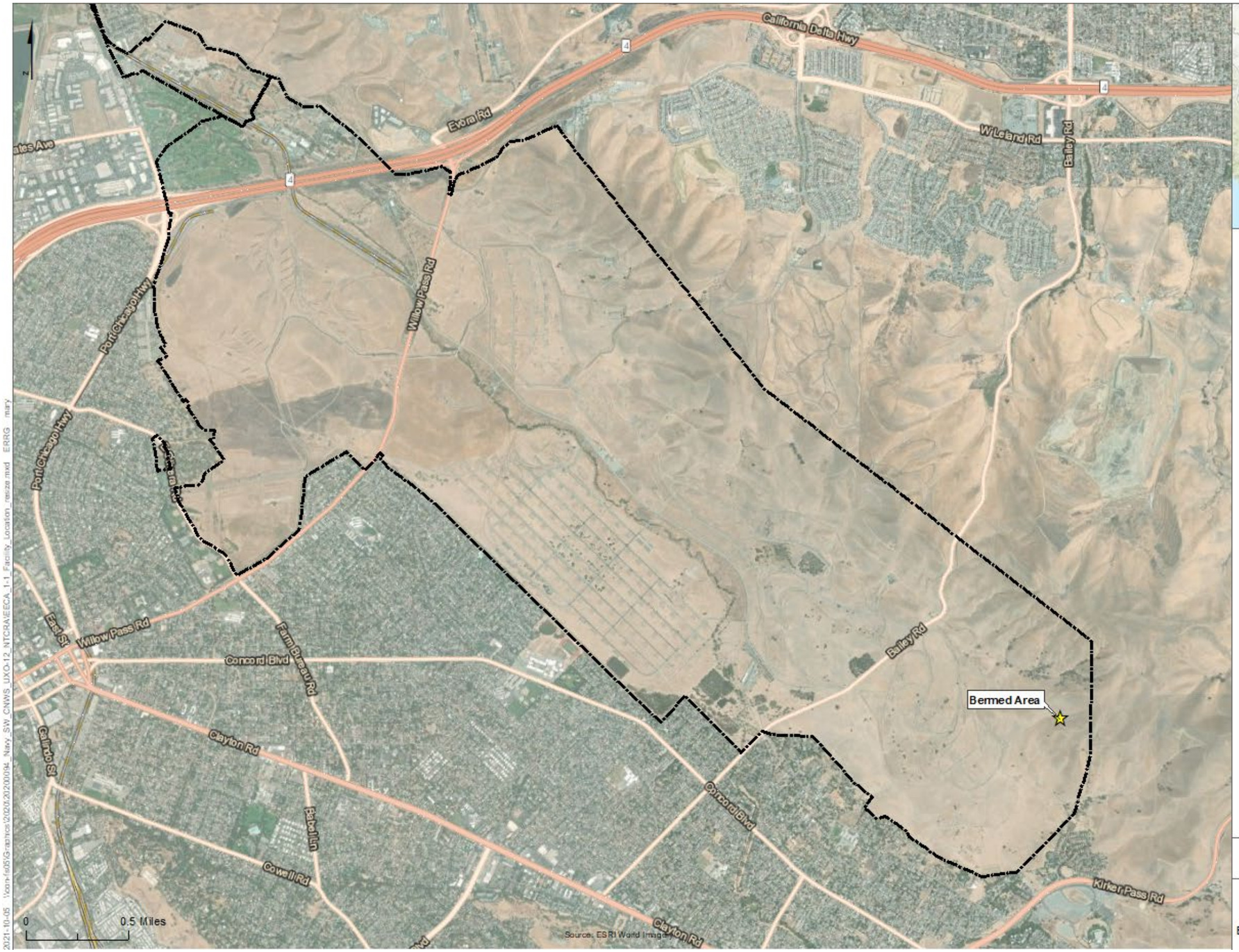


Former Naval Weapons Station Seal Beach Boundary

Notes:
1. Coordinate System: California State Plane, Zone 3, North American Datum 1983, U.S. Survey Feet

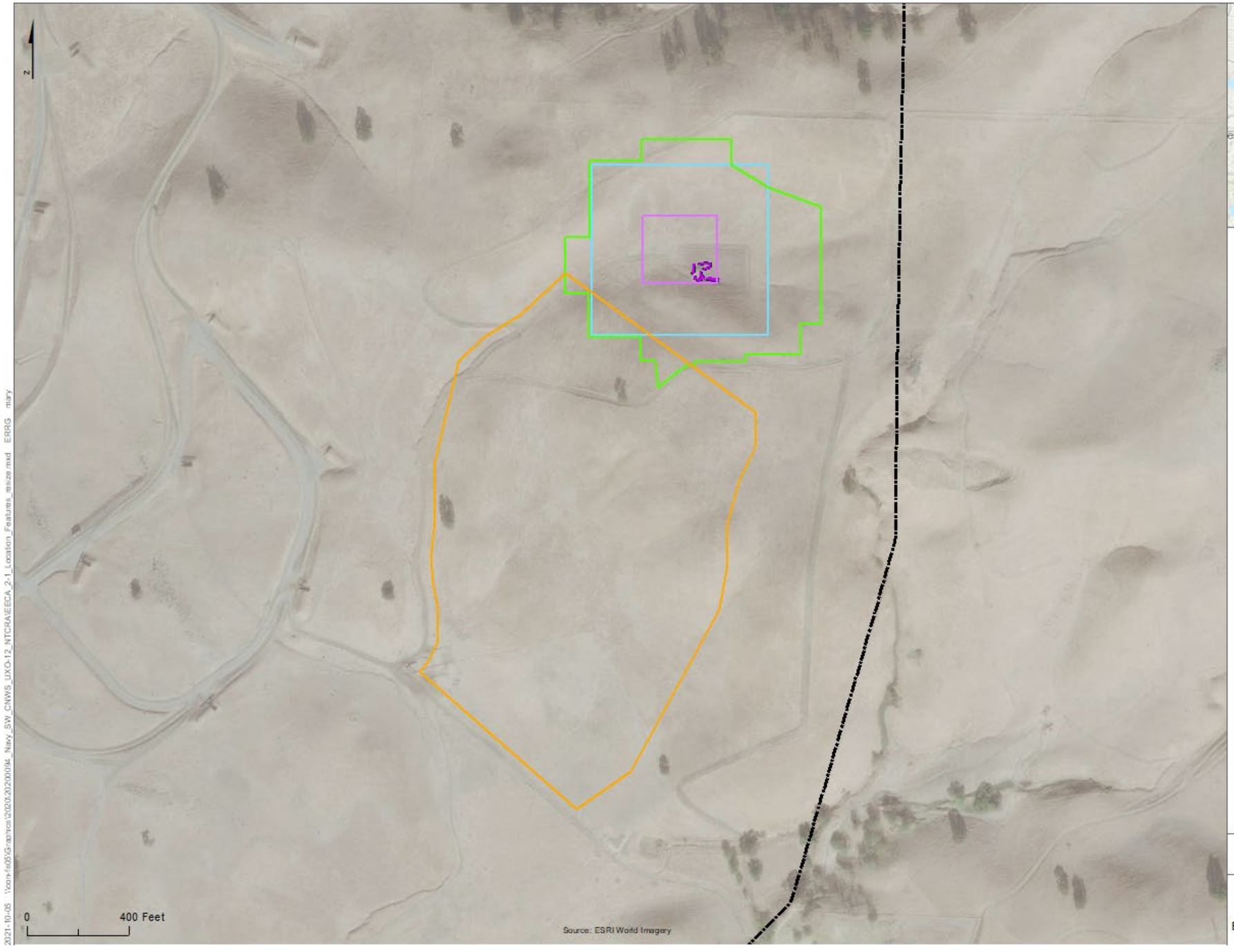
BRAC PMO Base Realignment and Closure Program Management Office
UXO unexploded ordnance

NAVFAC Naval Facilities Engineering Systems Command

Former Naval Weapons Station
Seal Beach Detachment Concord, Concord, CA
Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 1-1
FACILITY LOCATION MAP

Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012



- Bermed Area
- Extent of RI DGM Survey and Intrusive Investigation
- Initial 200-Foot Step-Out RI DGM Survey Area
- Previously Assumed Location of IR Site 23A
- Previous Bermed Area SI Boundary
- Former Naval Weapons Station Seal Beach Detachment Concord Boundary

Notes:
1. Coordinate System: California State Plane, Zone 3, North American Datum 1983, U.S. Survey Feet

BRAC PMO	Base Realignment and Closure Program Management Office
DGM	digital geophysical mapping
IR	Installation Restoration
RI	remedial investigation
SI	site inspection
UXO	unexploded ordnance

Former Naval Weapons Station
Seal Beach Detachment Concord, Concord, CA
Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 2-1
SITE LOCATION AND FEATURE S MAP

Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012

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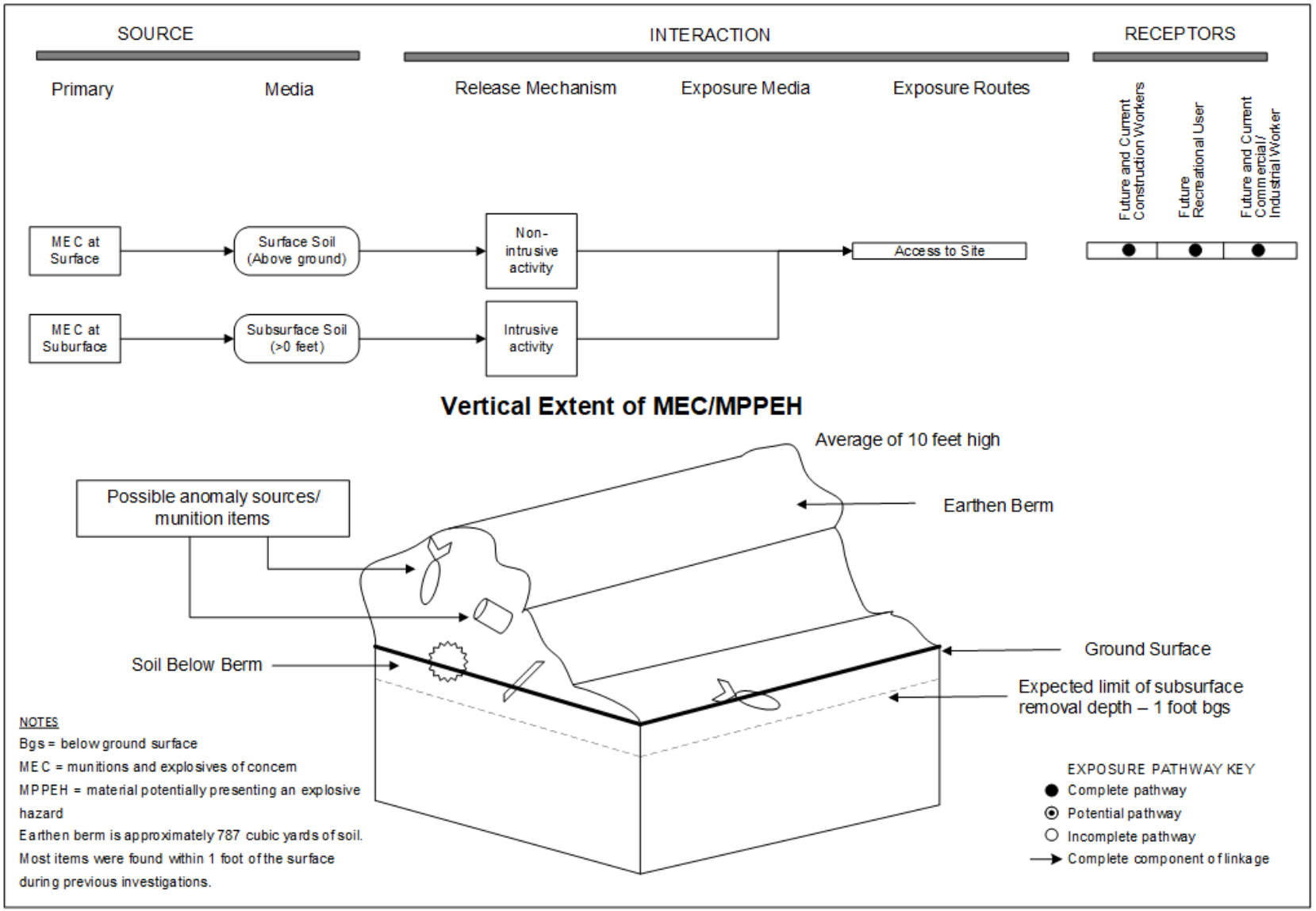

Figure 2-2. Conceptual Site Model

Engineering Evaluation/Cost Analysis for the Non-Time Critical Remedial Action at the Bermed Area, UXO Site 0012
Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA

Existing Exclusion Fence

Limits of Berm to be Removed

Former Naval Weapons Station Seal Beach Detachment Concord Boundary

Notes:
1. Coordinate System: California State Plane, Zone 3, North American Datum 1983, U.S. Survey Feet

BRAC PMO Base Realignment and Closure Program Management Office
UXO unexploded ordnance

NAVFAC Naval Facilities Engineering Systems Command

Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA
Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 4-1
REMOVAL ACTION AREA

Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012

2021-10-05 \\corp-fs05\Graphics\2020\20200094_Navy_SW_CNWS_UXO-12_NTCRA\EECA_4-1_Removal_Action_Area_resized_ERRG_mary

TABLES

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Table 2-1: 2019 MEC Hazard Assessment Summary

Bermed Area Land Use and Removal Alternative	Current Use for Cattle Grazing	Future Use as Open Space		
	No Action (Conditions prior to RI)	Alternative 1: No Action (Current Conditions)	Alternative 2: LUCs (Berm Stays in Place)	Alternatives 3/4: Berm Removal and MPPEH Detection, Removal, and Destruction
Site Total Score	770	875	545	500
Site Hazard Level	2	1	3	4

Notes:
LUCs = land use controls
MEC = munitions and explosives of concern
MPPEH = material potential presenting an explosive hazard
RI = remedial investigation

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Table 4-1: Screening of General Response Actions, Technologies, and Process Options

Response Action	Technology and Process	Description	Screening Summary
1. No Action	None	No active remediation	• Not protective of human health; does not meet the RAO. • Not effective or permanent in long-term. Because no action is taken, workers would not be adversely affected in the short-term. • No reduction of toxicity, mobility, or volume through treatment. • No technical or administrative feasibility concerns, and no availability concerns. • No costs.
2. LUCs	Institutional Controls (prohibition on intrusive activities)	Internal Navy prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and military munitions recognition and safety training for construction personnel are provided. These LUCs would be enforced by the Navy until a Final ROD is signed.	• Administrative controls (i.e., dig restrictions and safety training requirements) would be somewhat effective in meeting RAOs through restrictions on excavation activities and safety training for construction personnel, readily implementable, and low cost.
3. Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	Remove source materials (i.e., MEC/MPPEH, MDAS, non-munitions-related metal debris) by performing a detector aided surface clearance of berm soil in 6-inch lifts and using earthmoving equipment to remove the cleared soil in 6-inch lifts	Remove all detectable MEC/MPPEH items and collect soil samples, if required, to determine whether soil can be used to backfill the site or requires offsite disposal.	• Detector-aided clearance and mechanized excavation is effective in removing MPPEH/MEC and berm soil, is readily implementable, and is low cost.
	Post-geophysical confirmation	Use DGM survey equipment to identify varying electromagnetic fields in soil. Reacquire anomalies, intrusively investigate, and collect soil samples, if required.	• Effective in identifying potential anomalies and removing MPPEH and readily implementable. • The costs for DGM are lower than the costs for AGC in dynamic mode.
	Physical Treatment (BIP and Consolidated Shot)	Destruction of MPPEH by explosive detonation in place when the risk of movement beyond the immediate vicinity of discovery is not considered acceptable. Collection, configuration, and subsequent destruction by explosive detonation of MPPEH for which the risk of movement has been determined to be acceptable either within a current working sector or at an established demolition ground.	• BIP is effective because munitions are individually or collectively destroyed with the destruction verified. Also, it is readily implementable because it uses field-proven techniques, transportable tools, and equipment and is low cost. • Consolidated shot is effective by generally using the same techniques, tools, and equipment as BIP, except it is limited in use to munitions that are “acceptable to move.” Also, readily implementable but requires larger area and greater controls than BIP. It is low cost but manpower intensive.

Table 4-1: Screening of General Response Actions, Technologies, and Process Options *(continued)*

Response Action	Technology and Process	Description	Screening Summary
4. Berm Removal, Post-Removal Verification Survey by AGC, and Destruction	Remove source materials (i.e., MEC/MPPEH, MDAS, non-munitions-related metal debris) by performing a detector aided surface clearance of berm soil in 6-inch lifts and using earthmoving equipment to remove the cleared soil in 6-inch lifts	Remove all detectable MEC/MPPEH items and collect soil samples, if required, to determine whether soil can be used to backfill the site or requires offsite disposal.	• Detector-aided clearance and mechanized excavation is effective in removing MPPEH/MEC and berm soil, is readily implementable, and is low cost.
	Post-geophysical confirmation	Use AGC survey equipment in dynamic mode to identify varying electromagnetic fields in soil from multiple aspects to assign likelihood of the buried item being MEC/MPPEH based on classification algorithms. Reacquire anomalies, intrusively investigate, and collect soil samples, if required.	• Effective in identifying potential and removing MPPEH and readily implementable. • The costs for AGC in dynamic mode are higher than the costs for DGM.
	Physical Treatment (BIP and Consolidated Shot)	Destruction of MPPEH by explosive detonation in place when the risk of movement beyond the immediate vicinity of discovery is not considered acceptable. Collection, configuration, and subsequent destruction by explosive detonation of MPPEH for which the risk of movement has been determined to be acceptable either within a current working sector or at an established demolition ground.	• BIP is effective because munitions are individually or collectively destroyed with the destruction verified. Also, it is readily implementable because it uses field-proven techniques, transportable tools, and equipment and is low cost. • Consolidated shot is effective by generally using the same techniques, tools, and equipment as BIP, except it is limited in use to munitions that are “acceptable to move.” Also readily implementable but requires larger area and greater controls than BIP. It is low cost but manpower intensive. The lower cost favors consolidated shots whenever possible.

Notes:
AGC = advanced geophysical classification
BIP = blow in place
DGM = digital geophysical mapping
LUCs = land use controls
MDAS = material documented as safe
MEC = munitions and explosives of control
MPPEH = material potentially presenting an explosive hazard
RAOs = removal action objectives
UXO = unexploded ordnance

Table 4-2: Individual Analysis of Removal Alternatives

Criterion	Removal Alternatives			
	1—No Action	2—LUCs	3— Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	4— Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Effectiveness				
Overall Protection of Human Health and the Environment	Not protective because no action would be taken to reduce/mitigate the risk of exposure to MPPEH/MEC in subsurface soil.	Provides protection of human health by preventing exposure to MPPEH/MEC in berm soil via administrative policies (i.e., dig restrictions and safety training). There is no protection of the environment.	Protective of human health and the environment because all detectable MPPEH/MEC remaining in the berm soil and subsurface soil would be removed from the site thereby reducing/mitigating potential exposure to munitions-related items or explosive hazards posed to human health and the environment.	Protective of human health and the environment because all detectable MPPEH/MEC remaining in the berm soil and subsurface soil would be removed from the site thereby reducing/mitigating potential exposure to munitions-related items or explosive hazards posed to human health and the environment.
Compliance with ARARs	Does not meet any of the identified ARARs.	Complies with ARARs for mitigation of the soil exposure pathway by preventing soil disturbance through LUCs.	Removal action complies with all ARARs.	Removal action complies with all ARARs.
Long-Term Effectiveness and Permanence	Does not provide long-term effectiveness and permanence because MPPEH/MEC may remain in subsurface soil and could pose an explosive hazard if disturbed.	For the soil exposure pathway, this alternative would be effective in the long-term reduction of hazards to humans as long as the administrative policies prohibit exposure to subsurface soil are implemented, inspected, and maintained. The administrative policies also require implementation and consistent enforcement. Long-term effectiveness relies on adherence to the administrative controls.	Provides long-term effectiveness and permanence because detectable MPPEH/MEC would be removed from the berm soil thereby reducing/mitigating the potential exposure to munitions-related items or explosive hazards posed to human health and the environment.	Provides long-term effectiveness and permanence because detectable MPPEH/MEC would be removed from the berm soil thereby reducing/mitigating the potential exposure to munitions-related items or explosive hazards posed to human health and the environment.
Reduction of Toxicity, Mobility, or Volume through Treatment	Does not include treatment (i.e., removal and detonation) that would reduce the mobility or volume of MPPEH/MEC in subsurface soil at the site.	Does not include any treatment (i.e., removal and detonation) that would reduce the toxicity, mobility, or volume of MPPEH/MEC in subsurface soil at the site.	All detectable MPPEH/MEC would be treated via detonation thereby reducing/mitigating the mobility and volume of MPPEH/MEC in soil at the site.	All detectable MPPEH/MEC would be treated via detonation thereby reducing/mitigating the mobility and volume of MPPEH/MEC in soil at the site.
Short-Term Effectiveness	Would not achieve the RAO. No short-term hazards posed to workers or the public because no activities would be conducted under this alternative.	No short-term increased risks because munitions-related items or explosive hazards (i.e., MPPEH/MEC) in soil would not be disturbed during implementation of this alternative.	Increased short-term risk to workers or the public due to the soil disturbance activities; however, potential contact with MPPEH/MEC would be reduced/mitigated using PPE, best management practices, and other control measures.	Increased short-term risk to workers or the public due to the soil disturbance activities; however, potential contact with MPPEH/MEC would be reduced/mitigated using PPE, best management practices, and other control measures.

Table 4-2: Individual Analysis of Removal Alternatives *(continued)*

Criterion	Removal Alternatives			
	1—No Action	2—LUCs	3— Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	4— Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Implementability				
Technical Feasibility	No action would be taken.	No technical feasibility concerns.	No technical feasibility concerns.	No technical feasibility concerns.
Administrative Feasibility	No action would be taken.	Administratively feasible; however, LUCs have the potential to fail over time when administrative procedures are not followed.	No administrative feasibility concerns.	No administrative feasibility concerns.
Availability of Services and Materials	No action would be taken.	No concerns identified regarding availability of services or materials.	No concerns identified regarding availability of services or materials.	No concerns identified regarding availability of services or materials.
Regulatory Agency Acceptance	Not evaluated at this time pending comments from the regulatory agencies on the Draft EE/CA and Draft Action Memorandum.			
Community Acceptance	Not evaluated at this time pending comments from the community during the 30-day public comment period planned..			
Cost				
	Total Cost: $0 Capital: $0 O&M: $0 Present Value: $0	Total Cost: $70,000 Capital: $70,000 O&M: $0 Present Value: $70,000	Total Cost: $509,700 Capital: $509,700 O&M: $0 Present Value: $509,700	Total Cost: $576,900 Capital: $576,900 O&M: $0 Present Value: $576,900

Notes:
AGC = advanced geophysical classification
ARARs = applicable or relevant and appropriate requirement
DGM = digital geophysical mapping
EE/CA = Engineering Evaluation/Cost Analysis
LUCs = Land Use Controls
MDAS = material documented as safe
MEC = munitions and explosives of concern
MPPEH = material potentially presenting an explosive hazard
O&M = operation and maintenance
PPE = personal protective equipment
RAO = removal action objective

Table 4-3: Environmental Footprint Analysis Results for the Removal Alternatives

Core Element	Metric	Unit of Measure	Metric Value			
			Alt. 1	Alt. 2	Alt. 3	Alt. 4
Materials and Waste						
Materials and Waste	Refined materials used on site	Tons	0	0	Negligible	Negligible
	% of refined materials from recycled or reused material	%	0	0	0	0
	Unrefined materials used on site	Tons	0	0	0	0
	% of unrefined materials from recycled or reused material	%	0	0	0	0
	On-site hazardous waste disposed of off site	Tons	0	0	0	0
	On-site non-hazardous waste disposed of off site	Tons	0	0	0	0
	% of total potential waste recycled or reused	%	0	0	0	0
Water	Public water supply, equipment decontamination, disposed of off site as liquid nonhazardous waste	MG	0	0	Negligible	Negligible
	Public water supply, dust control, evaporate from site	MG	0	0	0.03	0.03
Energy	Total energy used (on site and off site)	MMBtu	0	0	159.4	159.4
	Energy voluntarily derived from renewable resources	--	--	--	--	--
	Onsite generation or use and biodiesel use	MMBtu	0	0	0	0
	Voluntary purchase of renewable electricity	MWh	0	0	0	0
	Voluntary purchase of Renewable Energy Certificates	MWh	0	0	0	0
Air	Onsite NOx, Sox, and PM10 emissions	Pounds	0	0	160.9	160.9
	Onsite HAP emissions	Pounds	0	0	0	0
	Total Nox, Sox, and PM10 emissions	Pounds	0	0	181.4	181.4
	Total HAP emissions	Pounds	0	0	1.8	1.8
	Total greenhouse gas emissions	Tons CO_2e*	0	0	12.9	12.9

Table 4-3: Environmental Footprint Analysis Results for the Removal Alternatives *(continued)*

Core Element	Metric	Unit of Measure	Metric Value			
			Alt. 1	Alt. 2	Alt. 3	Alt. 4
Land and Eco Systems	Qualitative Description – see Section 4.4					

Notes:

Alternative 1 is no action; Alternative 2 is LUCs; Alternative 3 is berm removal, post-removal verification survey by DGM, and destruction; and Alternative 4 is berm removal, post-removal verification survey by AGC, and destruction.

The environmental footprint analysis of Alternatives 1 through 4 will not be used as a basis of decision logic but is provided for informational purposes for overall consideration of the alternatives.

The green remediation metrics are zero for Alternative 1, No Action, because no action (i.e., removal, treatment, monitoring, restrictions, LUCs, reviews, or any other mitigating actions) would be performed under the current or future land use scenarios. This alternative was included in the EE/CA as a baseline for comparison to the other alternatives.

The green remediation metrics are zero for Alternative 2, LUCs, because no action (i.e., removal, treatment, monitoring, restrictions, onsite LUCs [i.e., engineering controls], reviews, or any other mitigating actions) would be performed under the current or future land use scenarios. This alternative was included in the EE/CA as a baseline for comparison to the other alternatives.

The following are not anticipated for any of the NTCRA alternatives: onsite generation of renewable energy, onsite or offsite use of biodiesel fuel, voluntary purchase of renewable electricity from an electricity provider in the form of a "green pricing" or "green marketing" product, or voluntary direct purchase of Renewable Energy Certificates.

Total greenhouse gases emissions (in CO_2e) include consideration of carbon dioxide, methane, and nitrous oxide emissions.

AGC = advance geophysical classification

Alt. = alternative

CO_2e = carbon dioxide equivalents of global warming potential

DGM = digital geophysical mapping

EE/CA = Engineering Evaluation/Cost Analysis

HAP = hazardous air pollutant

LUCs = land use controls

MG = millions of gallons

MMBtu = million British thermal unit

MWh = megawatt hours (i.e., thousands of kilowatt-hours or millions of watt-hours)

NOx = nitrogen oxide

NTCRA = non-time-critical removal action

PM10 = particulate matter less than 10 microns in size

SOx = sulfur oxide

-- = not applicable

Table 5-1: Comparative Analysis of Removal Alternatives

Evaluation Criteria	Alternative 1 No Action	Alternative 2 LUCs	Alternative 3 Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	Alternative 4 Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Effectiveness	**Qualitative Ranking**			
Protection of Human Health and Environment	Not protective	Moderate	High	High
Compliance with ARARs	None	Moderate	High	High
Long-Term Effectiveness	None	Moderate	High	High
Short-Term Effectiveness	None	Moderate	High	High
Achieve RAO	None	Moderate	High	High
Reduction of Toxicity, Mobility, and Volume through Treatment	None	Low	High	High
Implementability	**Qualitative Ranking**			
Technical Feasibility	None required	High	High	High
Administrative Feasibility	None required	Moderate	High	High
Availability of Services or Materials	None Required	High	High	High
Cost	**Removal Action Cost**			
Period of Analysis (Years)	30	30	30	30
Estimated Capital Cost	$0	$70,000	$509,700	$501,000
Estimatepd Annual/Period Cost	$0	$0	$0	$0
Estimated Total Cost	$0	$70,000	$509,700	$576,900

Table 5-1: Comparative Analysis of Removal Alternatives *(continued)*

Evaluation Criteria	Alternative 1 No Action	Alternative 2 LUCs	Alternative 3 Berm Removal, Post-Removal Verification Survey by DGM, and Destruction	Alternative 4 Berm Removal, Post-Removal Verification Survey by AGC, and Destruction
Cost *(continued)*	**Removal Action Cost** *(continued)*			
Estimated Total Present Value of Alternative	$0	$70,000	$509,700	$576,900
EE/CA Range (-30% / +50%)	$0	$49,000 / $105,000	$356,790 / $764,550	$403,830 / $865,350

Notes:

AGC = advanced geophysical classification

ARARs = applicable or relevant and appropriate requirements

DGM = digital geophysical mapping

EE/CA = Engineering Evaluation/Cost Analysis

LUCs = land use controls

MPPEH = material potentially presenting an explosive hazard

RAO = removal action objective

APPENDIX A
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS EVALUATION

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Table of Contents

Table of Contents *(continued)*

List of Tables

Acronyms and Abbreviations

AGC .....advanced geophysical classification

ARARs ..... applicable or relevant and appropriate requirements

Cal. ..... California

C.C.R. .....California Code of Regulations

CDFW ..... California Department of Fish and Wildlife

CDFWPs .....California Department of Fish and Wildlife Provisions

CERCLA..... Comprehensive Environmental Response, Compensation, and Liability Act

C.F.R. .....Code of Federal Regulations

ch. .....Chapter

Civ. Civil

CRLF .....California red-legged frog

CRUP ..... Covenant to Restrict the Use of Property

CTS .....California tiger salamander

C.W.C. ..... California Water Code

Det. .....Detachment

DGM..... digital geophysical mapping

div. .....Division

DoD ..... U.S. Department of Defense

DTSC .....Department of Toxic Substances Control

EE/CA .....Engineering Evaluation/Cost Analysis

EOD ..... explosive ordnance disposal

EP .....extraction procedure

EPA..... U.S. Environmental Protection Agency

ESA.....Endangered Species Act

Fed. Reg. ..... Federal Register

F.G.C. ..... Fish and Game Code

IR ..... Installation Restoration

LDRs ..... land disposal restrictions

LUCs ..... land use controls

MBTA ..... Migratory Bird Treaty Act

MC ..... munitions constituents

MDAS ..... material documented as safe

MDEH ..... material documented as an explosive hazard

MEC ..... munitions and explosives of concern

MPPEH ..... material potentially presenting an explosive hazard

NAVSEA ..... Naval Sea Systems Command

NAVWPNSTA ..... Naval Weapons Station

Navy ..... Department of the Navy

NCP ..... National Oil and Hazardous Substances Pollution Contingency Plan

NTCRA ..... non-time-critical removal action

OSPR ..... Office of Spill Prevention and Response

RAO ..... removal action objectives

RCRA ..... Resource Conservation and Recovery Act

RI ..... remedial investigation

STLCs ..... soluble threshold limit concentrations

SWRCB ..... State Water Resources Control Board San Francisco Bay

TBC ..... to be considered

TCLP ..... toxicity characteristic leaching procedure

TTLCs ..... total threshold limit concentrations

U.S.C. ..... United States Code

UXO ..... unexploded ordnance

Water Board ..... San Francisco Bay Regional Water Quality Control Board

WET ..... Waste Extraction Test

WQOs ..... water quality objectives

§ ..... Section

§§ ..... Sections

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Section A.1 Introduction

This appendix identifies and evaluates potential federal and State of California applicable or relevant and appropriate requirements (ARARs) from the universe of regulations, requirements, and guidance and sets forth the Department of the Navy (Navy) determinations regarding those potential ARARs for each response action alternative retained for detailed analysis in this Engineering Evaluation/Cost Analysis (EE/CA).

This evaluation includes an initial determination of whether the potential ARARs actually qualify as ARARs and a comparison for stringency between the federal and state regulations to identify the controlling ARARs. The identification of ARARs is an iterative process. The final determination of ARARs (no longer "potential" ARARs) will be made by the Navy in the action memorandum, after public review, as part of the response action selection process.

A.1.1 Summary of CERCLA and NCP Requirements

Section (§) 121(d) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Title 42 United States Code [U.S.C.] § 9621[d]), as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although § 121 of CERCLA does not itself expressly require that CERCLA remedial actions comply with ARARs, the U.S. Environmental Protection Agency (EPA) has promulgated a requirement in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) mandating that CERCLA removal actions "...shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws" (Title 40 Code of Federal Regulations [C.F.R.] § 300.415[j]). It is Navy policy to follow that requirement. Certain specified waivers may be used for removal actions, as is the case with remedial actions.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address circumstances at a CERCLA site. The requirement is applicable if the jurisdictional prerequisites of the standard show a direct correspondence when objectively compared to the conditions at the site. An applicable federal requirement is an ARAR. An applicable state requirement is an ARAR only if it is more stringent than federal ARARs.

If the requirement is not legally applicable, then the requirement is evaluated to determine whether it is relevant and appropriate. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable, address problems or situations similar to the circumstances of the proposed response action and are well suited to the conditions of the site (EPA, 1988a). A requirement must be determined to be both relevant and appropriate to be considered an ARAR.

The criteria for determining relevance and appropriateness are listed in 40 C.F.R. § 300.400(g)(2) and include the following:

- the purpose of both the requirement and the CERCLA action;
- the medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site;
- the substances regulated by the requirement and the substances found at the CERCLA site;
- the actions or activities regulated by the requirement and the response action contemplated at the CERCLA site;
- any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site;
- the type of place regulated and the type of place affected by the release or CERCLA action;
- the type and size of structure or facility regulated and the type and size of structure or facility affected by the release or proposed in the CERCLA action; and
- any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resources at the CERCLA site.

According to CERCLA ARARs guidance (EPA, 1988a), a requirement may be “applicable” or “relevant and appropriate,” but not both. ARARs must be identified on a site-specific basis and involve a two-part analysis: first, a determination whether a given requirement is applicable; then, if it is not applicable, a determination whether it is both relevant and appropriate. It is important to explain that some regulations may be applicable or, if not applicable, may still be relevant and appropriate. When the analysis determines that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable (EPA, 1988a).

Tables A2-1, A3-1, and A4-1 included in this appendix present each potential ARAR with an initial determination of ARAR status (i.e., applicable, relevant and appropriate, or not an ARAR). For the determination of relevance and appropriateness, the pertinent criteria were examined to determine whether the requirements address problems or

situations sufficiently similar to the circumstances of the release or response action contemplated, and whether the requirement is well suited to the site. A negative determination of relevance and appropriateness indicates that the requirement does not meet the pertinent criteria. Negative determinations are documented in the tables of this appendix and are discussed in the text only for specific cases.

To qualify as a state ARAR under CERCLA and the NCP, a state requirement must be:

- a state law or regulation,
- an environmental or facility siting law or regulation,
- promulgated (of general applicability and legally enforceable),
- substantive (not procedural or administrative),
- more stringent than federal requirements,
- identified in a timely manner, and
- consistently applied.

To constitute an ARAR, a requirement must be substantive. Therefore, only the substantive provisions of requirements identified as ARARs in this analysis are considered to be ARARs. Permits are considered to be procedural or administrative requirements. Provisions of generally relevant federal and state statutes and regulations that were determined to be procedural or non-environmental, including permit requirements, are not considered to be ARARs. CERCLA § 121(e)(1), Title 42 U.S.C. § 9621(e)(1), states, “No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site, where such remedial action is selected and carried out in compliance with this section.” The term on-site is defined for purposes of this ARARs discussion as “the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action” (40 C.F.R. § 300.5).

Nonpromulgated advisories or guidance issued by federal or state governments are not legally binding and do not have the status of ARARs. Such requirements may, however, be useful and are “to be considered” (TBC). TBC requirements (40 C.F.R. § 300.400[g][3]) complement ARARs but do not override them. They are useful for guiding decisions regarding cleanup levels or methodologies when regulatory standards are not available.

Pursuant to EPA guidance (EPA, 1988a), ARARs are generally divided into three categories: chemical-, location-, and action-specific requirements. This classification was developed to aid in the identification of ARARs; some ARARs do not fall precisely into one group or another. ARARs are identified on a site-specific basis for response actions where CERCLA authority is the basis for cleanup.

As the lead federal agency, the Navy has primary responsibility for identifying federal ARARs at the former Naval Weapons Station (NAVWPNSTA) Seal Beach Detachment (Det) Concord, Concord, California. Section A.1.2.2 discusses the potential federal ARARs that have been identified in the Engineering Evaluation/Cost Analysis (EE/CA) for the Bermed Area, Unexploded Ordnance (UXO) Site 0012. Pursuant to the definition of the term on-site in 40 C.F.R. § 300.5, the on-station areas that comprise the Bermed Area may contain material potentially presenting an explosive hazard (MPPEH) and munitions and explosives of concern (MEC) in soil within and/or under the berm. Regulatory requirements that apply to offsite actions are not ARARs. Offsite actions (i.e., offsite disposal) are required to comply with applicable requirements only and are not required to comply with relevant and appropriate requirements identified as ARARs for onsite actions. However, requirements for offsite activities may not be waived.

Identification of potential state ARARs was initiated through Navy requests that the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) identify potential state ARARs, an action described in more detail in Section A.1.2.3. Potential state ARARs that have been identified for the Bermed Area are discussed below.

A.1.2 Methodology Description

This subsection describes the process of identifying and evaluating potential federal and state ARARs.

A.1.2.1 General

As the lead federal agency, the Navy has primary responsibility for identification of potential ARARs for the Bermed Area. In preparing this ARARs analysis, the Navy undertook the following measures, consistent with CERCLA and the NCP:

- Identified federal ARARs for each response action alternative addressed in the EE/CA, taking into account site-specific information for the Bermed Area
- Reviewed potential ARARs identified by the state to determine whether they satisfy CERCLA and NCP criteria that must be met in order to constitute state ARARs
- Evaluated and compared federal ARARs and their state counterparts to determine whether state ARARs are more stringent than the federal ARARs or are in addition to the federally required actions
- Reached a conclusion as to which federal and state ARARs are the most stringent and/or “controlling” ARARs for each alternative

As outlined in Section 3.1 of the EE/CA, the response action objective (RAO) for the Bermed Area is to:

- Protect human health and the environment by reducing/mitigating the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during ground disturbing activities associated with current and future site use.

Removal action alternatives retained for detailed analysis in the EE/CA are designed to accomplish this RAO. The alternatives for the site use similar technologies to accomplish the goals but differ in the conceptual approach to their implementation.

The removal action alternatives for the Bermed Area considered for detailed analysis, and for which an ARARs analysis is presented in this appendix, are as follows:

- Alternative 1 – No Action
- Alternative 2 – Land Use Controls (LUCs)
- Alternative 3 – Berm Removal, Post-Removal Survey (Digital Geophysical Mapping [DGM]), and Destruction
- Alternative 4 – Berm Removal, Post-Removal Survey (Advanced Geophysical Classification [AGC]), and Destruction

A.1.2.2 Identifying and Evaluating Federal ARARs

The Navy is responsible for identifying federal ARARs as the lead federal agency under CERCLA and the NCP. The final determination of federal ARARs will be made when the Navy issues the Action Memorandum. The federal government implements a number of federal environmental statutes that are the source of potential federal ARARs, either in the form of the statutes or regulations promulgated thereunder. Examples include the Resource Conservation and Recovery Act (RCRA), the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and their implementing regulations. See NCP preamble at 55 Federal Register (Fed. Reg.) 8764–8765 (1990) for a more complete listing.

The Navy reviewed the proposed removal action and alternatives against all potential federal ARARs, including but not limited to those set forth at 55 Fed. Reg. 8764–8765 (1990) to determine whether they were applicable or relevant and appropriate using the CERCLA and NCP criteria and procedures for ARARs identification by lead federal agencies.

A.1.2.3 Identifying and Evaluating State ARARs

This subsection describes the process of identifying and evaluating potential state ARARs by the state and the Navy.

A.1.2.3.1 Solicitation of State ARARs under NCP

EPA guidance recommends that the lead federal agency consult with the state when identifying state ARARs for response actions (EPA, 1988b). In essence, the CERCLA/NCP requirements at 40 C.F.R. § 300.515 for response actions provide that the lead federal agency request that the state identify chemical- and location-specific state ARARs upon completion of site characterization. The requirements also provide that the lead federal agency request identification of all categories of state ARARs (chemical-, location-, and action-specific) upon completion of identification of remedial alternatives for detailed analysis. The state must respond within 30 days of receipt of the lead federal agency requests. The remainder of this subsection documents the Navy's efforts to date to identify and evaluate state ARARs.

The Navy followed the procedures of the process set forth in 40 C.F.R. § 300.515 in seeking state assistance in identifying state ARARs.

A.1.2.3.2 Chronology of Efforts to Identify State ARARs

The following chronology summarizes the Navy's efforts to obtain state assistance with identification of state ARARs for the response action at the former NAVWPNSTA Seal Beach Det Concord, Concord, California. Key correspondence between the Navy and the state agencies relating to this effort has been included in the Administrative Record for the EE/CA.

The Navy formally requested state chemical-, location-, and action-specific ARARs for the Bermed Area in December 2020. Letters were sent to the DTSC and San Francisco Bay Regional Water Quality Control Board (Water Board) soliciting ARARs based on preliminary response technologies and process options detailed to the agencies by the Navy.

Following the Navy solicitation for ARARs from DTSC, DTSC requested action-specific ARARs from other state and local agencies. The DTSC request only stipulated location- and action-specific ARARs be provided. The Navy received a letter from DTSC providing its location- and action-specific ARARs on February 1, 2021.

The Navy received a letter from the Water Board providing its chemical-, location-, and action-specific ARARs on February 5, 2021.

This ARARs analysis addresses the potential state ARARs identified in the above-mentioned correspondence from DTSC and Water Board and in codes and regulations

from the California Department of Fish and Wildlife (CDFW) (correspondence dated January 27, 2021).

A.1.3 Other General Issues

This subsection discusses general issues identified during the evaluation of ARARs for the Bermed Area.

A.1.3.1 General Approach to Requirements of the Federal Resource Conservation and Recovery Act

RCRA is a federal statute passed in 1976 to meet four goals: protection of human health and the environment, reduction of waste, conservation of energy and natural resources, and elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions (LDRs), and technical requirements. RCRA, as amended, contains several provisions that are potential ARARs for CERCLA sites.

Substantive RCRA requirements are applicable to response actions on CERCLA sites if the waste is a RCRA hazardous waste, and either:

- the waste was initially treated, stored, or disposed after the effective date of the particular RCRA requirement; or
- the activity at the CERCLA site constitutes treatment, storage, or disposal as defined by RCRA (EPA, 1988a).

The preamble to the NCP indicates that state regulations that are components of a federally authorized or delegated state program are generally considered federal requirements and potential federal ARARs for the purposes of ARARs analysis (55 Fed. Reg. 8666, 8742 [1990]). The State of California received approval for its base RCRA hazardous waste management program on 23 July 1992 (57 Fed. Reg. 32726 [1992]). The State of California “Environmental Health Standards for the Management of Hazardous Waste,” set forth in Title 22 California Code of Regulations (C.C.R.), Division (div.) 4.5, were approved by EPA as a component of the federally authorized State of California RCRA program. On 26 September 2001, California received final authorization of its revised State Hazardous Waste Management Program from EPA (63 Fed. Reg. 49118 [2001]).

The regulations of 22 C.C.R., div. 4.5 are therefore a source of potential federal ARARs for CERCLA response actions. The exception is when a state regulation is “broader in scope” than the corresponding federal RCRA regulations. In that case, such regulations

are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

The EPA notice of 23 July 1992, approving the State of California RCRA program (57 Fed. Reg. 32726 [1992]), specifically indicated that the state regulations addressed certain non-RCRA, state-regulated hazardous wastes that fell outside the scope of federal RCRA requirements. As such, 22 C.C.R., div. 4.5 requirements would be potential state ARARs for such non-RCRA, state-regulated wastes.

A key threshold question for the ARARs analysis is whether the military munitions at the Bermed Area constitute federal hazardous waste as defined under RCRA and the state's authorized program or qualify as non-RCRA state-regulated hazardous waste. Section A.1.4 A discusses waste characterization.

A.1.3.2 California Toxicity Criterial Rule

The Navy does not accept the California Toxicity Criteria Rule (TCR) at 22 C.C.R., Division 4.5, Chapter 51, Article 2 as ARARs for purposes of risk assessments, screening levels, or remediation goals. With respect to conducting risk assessments or identifying screening levels, under CERCLA, the lead agency conducts human health risk assessments during the initial, investigative stage of the process, whereas state-based requirements that the State has identified and proposed as potential ARARs are evaluated as part of the EE/CA, with final selection of any ARARs (both federal and state) made in the Action Memorandum. Accordingly, there is no requirement to attain or to evaluate ARARs for purposes of risk assessments or screening levels.

With respect to cleanup goals, as the EPA has explained, "[c]hemical-specific ARARs are usually health-or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may remain in, or be discharged to, the ambient environment." The EPA has further stated, "Levels or standards of control are basic performance objectives for (a) remedial action (e.g., acceptable exposure levels after the remedial action is completed)." (See NCP Preamble, Proposed Rule, 53 Fed. Reg. at 51437, 51443.) While the values referenced by the TCR for particular chemicals may potentially be "applied to site-specific conditions," they do not in themselves establish "the acceptable amount or concentration of a chemical that may remain in, or be discharged to, the ambient environment," nor do they represent "basic performance objectives for (a) remedial action (e.g., acceptable exposure levels after the remedial action is completed)."

Moreover, it does not appear that the State itself intended the TCR values to be viewed as ARARs. As stated in the responses to comments during administrative rulemaking for the TCR (and in keeping with the TCR stated connection to human health risk-based

remediation RGs), "[r]egarding the request to have the rule state that it is not intended to require remediation goals to be set at 1×10^{-6} incremental risk or a HQ of 1, the rule only requires that (risk-based) remediation goals be based on the toxicity criteria in accordance with § 69021. The rule does not set remediation goals at any particular point in the risk management range and is intentionally silent on that issue to defer to the regular NCP risk-management process and the flexibility provided within that process. The rule neither requires nor prohibits risk managers from setting remediation goals at 1×10^{-6} incremental risk (or HQ of 1), or at any other point within the risk management range. The remediation goal-setting decision is made for each individual site based on site-specific facts and conditions." (See https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/07/Revised-Toxicity-Criteria-Rule-RTCs.pdf at bottom of pg. 33 of 64.)

The Navy notes that the above response addresses only potential ARARs status and that the Navy will take into consideration the toxicity values associated with the TCR in conducting risk assessments and identifying screening levels for munitions constituents detected at the Bermed Area. No removal action goals are being set for this EE/CA, so the TCR is not being used.

A.1.4 Waste Characterization

This subsection describes the selection of ARARs involving characterization of wastes.

A.1.4.1 RCRA Hazardous Waste Determination

Federal RCRA hazardous waste determination is necessary to determine whether a waste is subject to RCRA requirements at 22 C.C.R., div. 4.5 and other state requirements at 23 C.C.R., div. 3, Chapter (ch.) 15. The first step in the RCRA hazardous waste characterization process is to evaluate contaminated media at the site(s) and determine whether the contaminant constitutes a "listed" RCRA waste. The preamble to the NCP states that "...it is often necessary to know the origin of the waste to determine whether it is a listed waste and that, if such documentation is lacking, the lead agency may assume it is not a listed waste" (59 Fed. Reg. 47384 [1994]).

This approach is confirmed in EPA guidance for CERCLA compliance with other laws (EPA, 1988a) as follows.

> *To determine whether a waste is a listed waste under RCRA, it is often necessary to know the source. However, at many Superfund sites, no information exists on the source of wastes. The lead agency should use available site information, manifests, storage records, and vouchers in an effort to ascertain the nature of these contaminants. When this documentation is not available, the lead agency may assume that the wastes are not listed RCRA hazardous wastes,*

unless further analysis or information becomes available that allows the lead agency to determine that the wastes are listed RCRA hazardous wastes.

RCRA hazardous wastes that have been assigned EPA hazardous waste numbers (or codes) are listed in 22 C.C.R., § 66261.30–66261.33. The lists include hazardous waste codes beginning with the letters "F," "K," "P," and "U."

Knowledge of the exact source of a waste is required for source-specific listed wastes (K waste codes). Some knowledge of the nature or source of the waste is required even for listed wastes from nonspecific sources, such as spent solvents (F waste codes) or commercial chemical products (P and U waste codes). These listed RCRA hazardous wastes are restricted to commercially pure chemicals used in particular processes such as degreasing.

P and U wastes cover only unused and unmixed commercial chemical products, particularly spilled or off-specification products (EPA, 1991a). Not every waste containing a P or U chemical is a hazardous waste. To determine whether a CERCLA investigation-derived waste contains a P or U waste, there must be direct evidence of product use. In particular, all the following criteria must be met. The chemicals must be:

- discarded (as described in 40 C.F.R. § 261.2[a][2]),
- either off-specification commercial products or a commercially sold grade,
- not used (i.e., soil contaminated with spilled unused wastes is a P or U waste), and
- the sole active ingredient in a formulation.

The second step in the RCRA hazardous waste characterization process is to evaluate potential hazardous characteristics of the waste. The evaluation of characteristic waste is described in EPA guidance as follows (EPA, 1988a).

Under certain circumstances, although no historical information exists about the waste, it may be possible to identify the waste as RCRA characteristic waste. This is important in the event that (1) remedial alternatives under consideration at the site involve on-site treatment, storage, or disposal, in which case RCRA may be triggered as discussed in this section; or (2) a remedial alternative involves off-site shipment. Since the generator (in this case, the agency or responsible party conducting the Superfund action) is responsible for determining whether the wastes exhibit any of these characteristics (defined in 40 C.F.R. § 261.21–261.24), testing may be required. The lead agency must use best professional judgment to determine, on a site-specific basis, if testing for hazardous characteristics is necessary.

> *In determining whether to test for the toxicity characteristic using the extraction procedure (EP) toxicity test, it may be possible to assume that certain low concentrations of waste are not toxic. For example, if the total waste concentration in soil is 20 times or less the EP toxicity concentration, the waste cannot be characteristic hazardous waste. In such a case, RCRA requirements would not be applicable. In other instances, where it appears that the substances may be a characteristic hazardous waste (ignitable, corrosive, reactive, or EP toxic), testing should be performed.*

Hazardous waste characteristics, as defined in 40 C.F.R. § 261.21–261.24, are commonly referred to as ignitability, corrosivity, reactivity, and toxicity. California environmental health standards for the management of hazardous waste set forth in 22 C.C.R., div. 4.5 were approved by EPA as a component of the federally authorized California RCRA program. Therefore, the characterization of RCRA waste is based on the state requirements.

The characteristics of ignitability, corrosivity, reactivity, and toxicity are defined in 22 C.C.R., § 66261.21–66261.24. According to 22 C.C.R., § 66261.24(a)(1)(A), "A waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the EPA Hazardous Waste Number specified in Table I of this section which corresponds to the toxic contaminant causing it to be hazardous." Table 1 in 22 CCR, § 66261.24 assigns hazardous waste codes beginning with the letter "D" to wastes that exhibit the characteristic of toxicity; D waste codes are limited to "characteristic" hazardous wastes.

According to 22 C.C.R., § 66261.10, waste characteristics can be measured by an available standardized test method or be reasonably classified by generators of waste based on their knowledge of the waste, provided that the waste has already been reliably tested or there is documentation of chemicals used.

The requirements at 22 C.C.R. § 66261.24 list the toxic contaminant concentrations that determine the characteristic of toxicity. The concentration limits are in milligrams per liter. These units are directly comparable to total concentrations in waste groundwater and surface water. For waste soil, these concentrations apply to the extract or leachate produced by the toxicity characteristic leaching procedure (TCLP).

A waste is considered hazardous if the contaminant concentrations in the wastewater or soil TCLP extract equal or exceed the TCLP limits. TCLP testing is required only if total contaminant concentrations in soil equal or exceed 20 times the TCLP limits because the TCLP uses a 20-to-1 dilution for the extract (EPA, 1988a).

A.1.4.2 California-Regulated, Non-RCRA Hazardous Waste

A waste determined not to be a RCRA hazardous waste may still be considered a California-regulated non-RCRA hazardous waste. The state's RCRA program is broader in scope in its hazardous waste determination. 22 C.C.R., § 66261.24(a)(2) lists the total threshold limit concentrations (TTLCs) and the soluble threshold limit concentrations (STLCs) for non-RCRA hazardous waste. The state applies its own leaching procedure, the Waste Extraction Test (WET), which uses a different acid reagent and has a different dilution factor (tenfold). There are other state requirements that may be broader in scope than federal ARARs for identifying non-RCRA wastes regulated by the state. Those may be potential ARARs for wastes not covered under federal ARARs. See additional subsections of 22 C.C.R. § 66261.24. A waste is considered hazardous if its total concentrations exceed the TTLCs or if the extract concentrations from the WET exceed the STLCs. A WET is required when the total concentrations exceed the STLC but are less than the TTLCs (22 C.C.R., div. 4.5, ch. 11, Appendix II [b]).

A.1.4.3 Other California Waste Classifications

For waste discharged after 18 July 1997, solid waste classifications at 27 C.C.R., Sections (§§) 20210, 20220, and 20230 are used to determine applicability of waste management requirements. These are summarized below.

- A "designated waste" under 27 C.C.R., § 20210 is defined at C.W.C. § 13173. Under C.W.C. § 13173, designated waste is hazardous waste that has been granted a variance from hazardous waste management requirements or nonhazardous waste that consists of or contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives (WQOs) or that could reasonably be expected to affect beneficial uses of the waters of the state.
- A "nonhazardous solid waste" under 27 C.C.R., § 20220 is all putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded waste (whether of solid or semisolid consistency), provided that such wastes do not contain wastes that must be managed as hazardous wastes or wastes that contain soluble pollutants in concentrations that exceed applicable WQOs or could cause degradation of waters of the state.

Under 27 C.C.R., § 20230, inert waste is that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable WQOs and does not contain significant quantities of decomposable waste.

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Section A.2 Chemical-Specific ARARs

Chemical-specific ARARs are generally health- or risk-based numerical values or methodologies applied to site-specific conditions that result in the establishment of a cleanup level. Many potential ARARs associated with particular response action alternatives (such as closure or discharge) can be characterized as action-specific but include numerical values or methodologies to establish them; therefore, they fit into both categories (chemical- and action-specific). To simplify the comparison of numerical values, most action-specific requirements that include numerical values are included in this chemical-specific section and, if repeated in the action-specific section, the discussion refers back to this section.

This section presents the conclusions of the ARARs determination that address numerical values for soil and summarizes the potential ARARs, followed by a more detailed discussion of the ARARs for soil. Table A2-1, included at the end of this appendix, summarizes potential federal and state chemical-specific ARARs.

A.2.1 Summary of ARARs Conclusions by Medium

Section 2.1 of the EE/CA provides detailed historical information on the former NAVWPNSTA Seal Beach Det Concord.

Historical documentation indicated that an explosive ordnance disposal (EOD) site was operated from the 1940s through 1959 at Installation Restoration (IR) Site 23A, but the exact location was not known. Historical records also indicated that detonations limited to 50 pounds of high explosives were conducted at IR Site 23A. In 1959, EOD was reportedly discontinued at IR Site 23A after complaints about the high noise levels associated with detonation (TriEco-Tt, 2014 and 2017). The Bermed Area is the same EOD site that was previously referred to as IR Site 23A.

The nearest surface water to the Bermed Area is a pond located 1,970 feet from the southwestern boundary of the Bermed Area (TriEco-Tt, 2017). Groundwater is most likely deeper than the measured depths (i.e., typically ranging from 35 to 188 feet below ground surface) in the rest of the Inland Area depending on ground surface elevation (TriEco-Tt, 2017).

Soil is the only environmental medium of concern for this NTCRA because the potential MPPEH/MEC is in subsurface soil. The following sections present the conclusions for ARARs pertaining to this medium.

A.2.1.1 Soil ARARs Conclusions

The Navy has identified the following potential chemical-specific ARARs for Alternatives 3 and 4, which would generate waste, including waste MPPEH/MEC and possibly waste soil if soil is excavated as part of the MPPEH/MEC removal. The Navy would determine if the waste is RCRA hazardous or state-regulated, non-RCRA hazardous waste, according to the following potential chemical-specific ARARs:

- 22 C.C.R. §§ 66261.21(a)(2) and (4), 66261.22(a)(1), 66261.23(a), 66261.24(a)(1), and 66261.100 – defining a RCRA hazardous waste
- 22 C.C.R., §§ 66261.22(a)(3) and (4), 66261.24(a)(2)–(a)(8), 66261.101(a)(1), (2), and (3) – defining a non-RCRA state-regulated hazardous waste

The Navy has also identified the following provisions of the Military Munitions Rule as potential ARARs because of the potential for MEC/MPPEH to be at the site:

- Military Munitions Rule at 40 C.F.R. § 266.202(b) and (c) for determining when a military munition is a solid waste

The MPPEH/MEC remaining at the site meet the definition of solid waste. MPPEH/MEC may meet the definition of ignitability or reactivity according to the RCRA hazardous waste definitions at 22 C.C.R. §§ 66261.21 and 66261.23.

Alternatives 3 and 4 would generate waste, including waste MPPEH/MEC. In addition, MPPEH/MEC may meet the definition of ignitability or reactivity. Therefore, the RCRA hazardous waste definitions at 22 C.C.R. § 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100 are potential federal ARARs for determining whether the waste soil and waste MPPEH/MEC exhibits the characteristics of RCRA hazardous waste. Additionally, the non-RCRA, state-regulated waste definition requirements at 22 C.C.R. § 66261.3(a)(2)(C) 66261.3(a)(2)(F), 66261.22(a)(3) and (4), 66261.24(a)(2)–(a)(8), 66261.101(a)(1) and (a)(2) are potential state ARARs for determining whether the waste soil and waste MPPEH/MEC is California-regulated, non-RCRA hazardous waste.

The Navy has identified the Military Munitions Rule at 40 C.F.R. § 266.202(b) and (c), which specify when unused and used military munitions become solid waste as potential ARARs for determining when munitions from the Bermed Area constitute solid wastes. The munitions at the Bermed Area meet the definition of solid waste. The Navy then would determine if the military munition meets the definition of RCRA characteristic waste using the potential RCRA ARARs identified in the previous paragraph by determining if it is a live munition. If it is live, the munition meets the definition of RCRA characteristic waste. Once the characteristic is removed, the munition is no longer a RCRA hazardous waste.

A.2.2 Detailed Discussion of ARARs by Medium

This section provides a detailed discussion of potential federal and state ARARs by medium. Pertinent and substantive provisions of the potential ARARs listed and described below were reviewed to determine whether they are potential federal or state ARARs for the EE/CA and MPPEH/MEC within or underneath the berm in the Bermed Area.

Table A2-1 at the end of this appendix identifies the requirements that are determined to be ARARs or TBCs. ARARs determinations are presented in the column with the heading "ARAR Determination." The following subsections discuss specific issues concerning some of the requirements.

A.2.2.1 Soil ARARs

The key threshold question for soil ARARs is whether potential waste soil at the Bermed Area would be classified as hazardous waste. The soil may be classified as federal hazardous waste as defined by RCRA and the state-authorized program or as non-RCRA, state-regulated hazardous waste. If the soil is determined to be hazardous waste, the appropriate requirements will apply.

A.2.2.1.1 Federal ARARs

The subsections below discusses the federal requirements evaluated as potential ARARs for soil.

RCRA

The federal RCRA requirements at 40 C.F.R. Part 261 do not apply in California because the state RCRA program is authorized, so the authorized state RCRA requirements are considered federal ARARs. The applicability of RCRA requirements depends on whether the waste is a RCRA hazardous waste; whether the waste was initially treated, stored, or disposed of after the effective date of the particular RCRA requirement; and whether the activity at the site constitutes treatment, storage, or disposal as defined by RCRA. RCRA requirements may be relevant and appropriate even if they are not applicable. Examples include activities that are similar to the definition of RCRA treatment, storage, or disposal for waste similar to RCRA hazardous waste.

The determination of whether a waste is a RCRA hazardous waste can be made by comparing the site waste with the definition of RCRA hazardous waste. The RCRA requirements at 22 C.C.R., §§ 66261.21(a)(2) and (4), 66261.22(a)(1), 66261.23(a), 66261.24(a)(1), and 66261.100 are potential ARARs because they define RCRA hazardous waste. These requirements are potential ARARs for soil and for any other

waste generated in performance of the NTCRA. A waste can meet the definition of hazardous waste if it meets any of the characteristic waste definitions.

If the Navy determines that the waste is RCRA hazardous waste, the Navy will comply with all independently applicable requirements for proper offsite disposal, such as packaging, manifesting, and land disposal restrictions. The CERCLA Off-Site Rule requires that CERCLA wastes may only be placed in a facility operating in compliance with the RCRA or other applicable federal or state requirements (CERCLA § 121(d)(3) [42 U.S.C. § 9621(d)(3)] and 40 C.F.R. § 300.440). The Navy has not identified these requirements as ARARs because the disposal of the waste will take place off site and regulatory requirements that apply to offsite actions are not ARARs.

A.2.2.1.2 State ARARs

The subsections below discuss the state requirements evaluated as potential ARARs for soil.

RCRA Requirements

State RCRA requirements included within the EPA-authorized RCRA program for California are considered to be potential federal ARARs and are discussed in the previous section. The exception is when a state regulation is broader in scope than the corresponding federal RCRA regulations. In that case, such regulations are not considered part of the federally authorized program or potential federal ARARs. Instead, they are purely state law requirements and potential state ARARs.

State requirements such as the non-RCRA, state-regulated hazardous waste requirements may be potential state ARARs because they are not within the scope of the federal ARARs (57 Fed. Reg. 60848). The 22 C.C.R., div. 4.5 requirements that are part of the state-approved RCRA program would be potential state ARARs for non-RCRA, state-regulated hazardous wastes.

The Navy accepts the following potential state ARARs for characterizing waste that may be generated in Alternatives 3 and 4:

- Cal. Code Regs. tit. 22, §§ 66261.3(a)(2)(F), 66261.22(a)(3) and (4), 66261.24(a)(2)–(a)(8), 66261.101(a)(1), (2), and (3) – defining a non-RCRA state-regulated hazardous waste

A.2.2.2 Military Munitions and MEC ARARs

Neither military munitions nor MPPEH/MEC is, as a class, designated as CERCLA hazardous substances. However, the Navy is addressing munitions items at the Bermed Area through the CERCLA framework, which is consistent with U.S. Department of Defense (DoD) policy.

Addressing the unique problems associated with MPPEH/MEC on military installations requires an approach that modifies the one taken under the CERCLA response and RCRA corrective action programs. The most significant reason for this difference is the absolute need to minimize explosives safety risks in planning, conducting, and implementing response actions. This is because the acute hazards associated with military munitions (especially MPPEH/MEC) are the primary factors driving the scope, sequence, and types of actions that are possible on the impacted sites. These concerns are unique to military installations in that most actions on CERCLA response or RCRA corrective action sites do not need to consider an explosion hazard posed by the presence of munitions or explosives. Response actions to address potentially live munitions items require a different approach to balance the risks and impacts of addressing the military munitions and/or MPPEH/MEC with the risks of inaction. Minimizing explosive safety risks while achieving the proper balance between these competing concerns is the goal of this response action. Therefore, prior to commencement of the NTCRA activities, an explosives safety remediation plan will be prepared in accordance with the DoD Explosives Safety Board's (DDESB) guidance titled "Defense Explosives Safety Regulations 6055.09, Edition 1," dated January 13, 2019.

At the Bermed Area, the munitions items, including potential MPPEH/MEC, MD/MDAS, and non-munitions-related scrap are waste. Therefore, certain substantive requirements of RCRA are potential ARARs for handling the waste material from the Bermed Area.

A.2.2.2.1 Federal

Ammunition products produced or owned by the DoD are regulated under the Military Munitions Rule (62 Fed. Reg. 6621, 12 February 1997). The Military Munitions Rule identifies when conventional and chemical military munitions become a hazardous waste under RCRA. It also provides for safe storage and transport of such waste. Munitions are defined under 40 C.F.R. § 260.10, and the definition includes items such as explosive rounds and small arms rounds. A military munition is classified as hazardous waste if it is either a listed waste or exhibits a hazardous characteristic. The DoD has tested small arms ammunition (less than .50 caliber) and these items were found to not exhibit a reactive characteristic with respect to 40 C.F.R. § 261.23(a)(6). Munitions rounds of .50 caliber or greater may be reactive, and the individual items may constitute a hazardous waste due to reactivity. Hazardous waste classification analysis of military munitions also must consider other hazardous waste characteristics such as toxicity and ignitability.

The requirements for military munitions have been consolidated into 40 C.F.R. Part 266, subpart M with appropriate references to other requirements (such as treatment and disposal). .

The definition of solid waste is further defined in the Military Munitions Rule at 40 CFR § 266.202. A military munition is not a solid waste when it is used for its intended purpose. An unused military munition is a solid waste when abandoned, removed from storage for treatment or disposal, or is deteriorated or damaged to the point that it is not serviceable. A used or fired military munition is a solid waste when transported offsite for disposal or if collected and disposed by burying or landfilling. A used or fired military munition is a solid waste if it lands off range and is not promptly rendered safe or retrieved. These criteria must be evaluated to determine whether the MPPEH/MEC could be a hazardous waste because to be a hazardous waste, the military munitions would have to be a solid waste. Therefore, the substantive provisions of 40 CFR § 266.202(b) and (c) are potential ARARs for determining that MEC/MPPEH is a solid waste.

Comparing MPPEH/MEC to the definition of RCRA hazardous waste aids in making the determination that a solid waste also meets the definition of RCRA hazardous waste. The RCRA requirements at Cal. Code Regs. tit. 22, § 66261.21, 66261.22(a)(I), 66261.23, 66261.24(a)(I), and 66261.100 are applicable ARARs because they define RCRA hazardous waste. Available information regarding the Bermed Area indicates that waste munitions on the site are not considered a RCRA listed waste. However, MEC/MPPEH may be considered a RCRA characteristic hazardous waste. The Navy would determine if the military munition meets the definition of RCRA characteristic waste using the potential RCRA ARARs by determining if it is a live munition. If it is live, the munition meets the definition of RCRA characteristic waste. Once the characteristic is removed, the munition is no longer a RCRA hazardous waste.

If scrap metal is found in the excavation, it will be recycled. The scrap metal is not expected to meet the definition of RCRA characteristic waste and therefore is exempted from regulation under California hazardous waste laws.

A.2.2.2.2 State

California has not yet adopted the federal RCRA Military Munitions Rule and continues to regulate ordnance items that meet the definition of “hazardous waste” under the Cal. Code of Regs. tit. 22, Division 4.5, hazardous waste regulations that are evaluated as potential federal ARARs.

Section A.3 Location Specific ARARs

This section identifies and discusses potential location-specific ARARs. The discussions are presented based on various attributes of the site location, such as whether it is within a floodplain. Additional surveys will be performed in connection with the response action design and implementation to confirm location-specific ARARs where inadequate siting information currently exists, or in the event of changes to planned facility locations.

A.3.1 Summary of Location-Specific ARARs

Seven general resource categories are associated with evaluating and identifying location-specific ARARs. Those resource categories are cultural resources, wetland protection and floodplain management, hydrologic resources, biological resources, coastal resources, and geologic characteristics. Biological resources are the only resource category relating to location-specific requirements potentially affected by the response action at the Bermed Area. The following subsections present conclusions for ARARs pertaining to the identified resources.

A.3.1.1 Biological Resources Conclusions

The grassland habitat at the site has been deemed suitable to support the following federal threatened and endangered animals: California red-legged frog (CRLF), a federal threatened species and a State species of special concern, and the California tiger salamander (CTS), a federal endangered and a State threatened species. In addition, migratory birds may be present at the site. The Navy has identified the following as potential ARARs for the protection of these biological resources:

- Federal Endangered Species Act at 16 U.S.C §§1536(a)(2) and (3) and1538(a)(1) – prohibiting federal agency action from jeopardizing the continued existence of listed species and prohibiting the take of endangered species
- Migratory Bird Treaty Act at 16 U.S.C. § 703 – prohibiting unregulated taking of migratory birds

Botanical surveys were completed at the site in April 2011, May 2012, and March 2014. No special-status plants (including federal or state threatened or endangered plants) were present at the site. See also the 2018 amendment to the Biological Opinion that concluded the CERCLA activities had no effect on endangered plants due to their absence from the project area (USFWS, 2018).

The Navy also accepts the following as potential State ARARs because the Swainson's hawk, a State threatened species (but not a federal listed species), and the Golden eagle and the White-tailed kite, both State fully protected birds, are present or potentially present at the Bermed Area:

- California Endangered Species Act at California Fish and Game Code § 2080 – prohibiting the take of State threatened or endangered species
- California Fish and Game Code § 3511(a)(1) and (b)(7) and (12) – prohibiting the taking of fully protected birds
- California Fish and Game Code § 5650(a)(6) – prohibiting the placement of enumerated substances or materials into waters of the State that are deleterious to fish, plant life, mammals, or bird life.

Alternatives 2, 3, and 4 would comply with the conservation measures, including biological monitoring by an onsite U.S. Fish and Wildlife Service [USFWS]-qualified biologist (reviewed by CDFW), during all ground-disturbing field activities identified in the 2018 amendment to the "Biological Opinion for the Environmental Investigations on the Former Naval Weapons Station Seal Beach, Detachment Concord, Contra Costa County, California" (USFWS, 2012 and 2018). The CDFW Provisions (CDFWPs) (CDFW, 2012), will be considered in the development of protective measures for State protected species, including the Swainson's hawk, Golden eagle, and White-tailed kite.

A.3.2 Detailed Discussion of ARARs

This section provides a detailed discussion of potential federal and state ARARs by location-specific resources. Pertinent and substantive provisions of the potential ARARs listed and described below were reviewed to determine whether they are potential federal or state ARARs for the NTCRA to address MPPEH/MEC at Bermed and this EE/CA.

Table A3-1 at the end of this appendix identifies the requirements that are determined to be potential ARARs. ARARs determinations are presented in the column with the heading "ARAR Determination." Determinations of status for location-specific ARARs were generally based on maps or lists included in the regulation or prepared by the administering agency. References to the document or agency consulted are provided in the "Comments" column and may be provided in footnotes to the table. The following subsections discuss specific issues concerning some of the requirements.

A.3.2.1 Biological Resources ARARs

The following regulated biological resources may be found at the Bermed Area:

- CRLF, a federal threatened species and a State species of special concern

- CTS (Central California distinct population segment), a federal and a State threatened species
- Swainson's hawk, a State threatened species (but not a federal listed species)
- Golden eagle, a State fully protected bird
- White-tailed kite, a State fully protected bird
- Migratory birds

The Navy identified the substantive provisions of the Endangered Species Act (ESA) at 16 U.S.C. §§ 1536(a)(2) and (3) and 1538(a)(1) and the Migratory Bird Treaty Act (MBTA) at 16 U.S.C. § 703 as potential federal ARARs. The Navy accepts the following sections of the California Fish and Game Code as potential state ARARs: California Fish and Game Code §§ 2080, 3511, and 5650(a)(6).

A.3.2.4.1 Federal

The subsections below discuss the federal requirements evaluated as potential ARARs for biological resources.

Endangered Species Act of 1973

The ESA of 1973 (16 U.S.C. §§ 1531–1543) provides a means for conserving various species of fish, wildlife, and plants that are threatened with extinction. The ESA defines endangered and threatened species and provides for the designation of critical habitats. Critical habitat is a specific geographical area that is deemed essential for the conservation of a listed species, as designated by the Secretary of Interior or Secretary of Commerce under the ESA. Under Section 7(a) of the ESA (16 U.S.C., ch. 35, § 1536[a][2]), Federal agencies shall carry out conservation programs for threatened and endangered species. Federal agencies may not fund, authorize, or carry out any action that is likely to jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat. Also, it is unlawful under Section 9 of the ESA for any person, including federal agencies, to "take" any listed fish or wildlife species (16 U.S.C. § 1538[a][1][B]) or remove, maliciously damage, or destroy any listed plant species (16 U.S.C. § 1538[a][2][B]). "Take" is defined broadly and includes, but is not limited to, harassing, harming, or killing (16 U.S.C. § 1532[19]). Incidental take may be authorized for the limited circumstances outlined in 16 U.S.C. § 1536(b)(4) and only when not associated with a finding of jeopardy or adverse modification. The Endangered Species Committee may grant an exemption for agency action when there are no reasonable and prudent alternatives to agency action and reasonable mitigation and enhancement measures such as propagation, transplantation, and habitat acquisition and improvement are not sufficient to avoid a finding of jeopardy or adverse modification (16 U.S.C. § 1536[h]). The substantive requirements at 16 U.S.C. §§ 1536(a)(2) and (3) and 1538(a)(1) are potentially ARARs for CERCLA sites that have listed species or designated critical habitats. The administrative requirements of ESA, including the

Section 7 consultation process and the associated production of Biological Assessment and Biological Opinion documents and the Section 10 permit requirements, are not ARARs (EPA, 1989).

Compliance with the substantive requirements of the ESA requires the Navy to determine whether listed species and designated critical habitat are present at the CERCLA site and to identify reasonable and prudent mitigation measures to avoid "takes" of listed species and allow the response action to be undertaken without jeopardizing the continued existence of a listed species or resulting in the destruction or adverse modification of designated critical habitat. If the Navy determines that endangered species or critical habitat are not present or will clearly not be affected by the proposed response actions (without having to implement mitigation measures), then no further action is required.

Although consulting with and obtaining a Biological Opinion is a procedural requirement that is not necessary for onsite CERCLA actions, the Navy has obtained Biological Opinions for CERCLA investigation, identification, and removal of hazardous substances in its installation and munitions response program for sites at the base, which include the Bermed Area. The most recent Biological Opinion was an amendment obtained in 2018 (USFWS, 2018) and makes (and reiterates) determinations regarding endangered plants, Alameda whipsnake, CTS, and CRLF. In the 2018 Biological Opinion amendment, a no effect determination on endangered plants was made (based on the absence of endangered plants from the project area) and may affect, but not likely to adversely affect determinations were made for the Alameda whipsnake, CTS, and CRLF. The Alameda whipsnake determination is based on negative survey results, lack of observations, and conservation measures that require the presence of biological monitors (USFWS, 2018).

The 2018 amendment to the Biological Opinion identified conservation measures including requiring a USFWS-qualified biologist (reviewed by CDFW) to be present during all ground-disturbing field activities in Alternatives 2, 3, and 4. Although the Alameda whipsnake is not a basis for the identification of the Endangered Species Act as a potential ARAR because it has not been identified on the Bermed Area, the Navy would have a biological monitor on site while the ground-disturbing activities occur to monitor for the Alameda whipsnake in compliance with the basis for the determinations made in the 2018 Biological Opinion amendment (USFWS, 2018). Sensitive species are not expected be at the site, but the biologist would confirm that sensitive species continue to be absent from the site. The other conservation measures identified in the 2018 Biological Opinion amendment also would be implemented (USFWS, 2018)

Migratory Bird Treaty Act of 1972

The MBTA (16 U.S.C. §§ 703–712) protects migratory bird species. The substantive provisions at 16 U.S.C. § 703 prohibit at any time, using any means or manner, the pursuit, hunting, capturing, and killing or the attempt to take, capture, or kill any migratory bird. The MBTA also prohibits the possession, sale, export, and import of any migratory bird or any part of a migratory bird, as well as nests and eggs. A list of migratory birds for which this requirement applies is found at 50 C.F.R. § 10.13. It is the Navy's position that this act is not legally applicable to Navy actions; however, the DoD signed (September 2014) a Memorandum of Understanding with the USFWS. The MBTA will continue to be evaluated as a potentially relevant and appropriate requirement for Navy CERCLA response actions.

Because the response action may potentially affect migratory birds as prohibited by the MBTA, substantive provisions at 16 U.S.C. § 703 are potentially relevant and appropriate for the EE/CA. None of the alternatives are expected to adversely impact migratory birds. The Navy will complete an ecological survey of the Bermed Area before ground disturbing field activities in Alternatives 2, 3, and 4 to determine if migratory birds are present at the site and will be adversely affected by the removal action. If so, the Navy would develop appropriate measures to protect migratory birds.

A.3.2.4.2 State

The State of California has identified the following sections of the California Fish and Game Code that have been accepted as potential State ARARs.

- California Fish and Game Code §§ 2080 and 3511 – for threatened or endangered species and fully protected birds
- California Fish and Game Code § 5650(a)(6)

California Fish and Game Code §§ 2080 and 3511

The California ESA is set forth in the California Fish and Game Code §§ 2050–2116. The substantive provisions in California Fish and Game Code § 2080 prohibit the "take" of California endangered or threatened species. "Take" is defined in California Fish and Game Code § 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

California Fish and Game Code § 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time.

California Fish and Game Code §§ 2080 and 3511 are not applicable because the United States of America has not waived sovereign immunity in the federal ESA for this State of California requirement. The CTS and Swainson's hawk, state threatened species, are present or potentially present at the Bermed Area. Fully protected birds

that are potentially present at the Bermed Area include the Golden eagle and the White-tailed kite. These species are protected under California Fish and Game Code §§ 2080 and 3511. The substantive provisions of California Fish and Game Code §§ 2080 and 3511 meet the pertinent NCP criteria under 40 C.F.R. § 300.400(g)(2)(vii) and are "relevant and appropriate" because the CTS, Swainson's hawk, Golden eagle, and White-tailed kite are present or potentially present at the site and protection of these vulnerable resources allows them to be "used" in the sense that they continue to provide their unique value to the State of California.

The Navy accepts California Fish and Game Code §§ 2080 and 3511(a)(1) and (b)(7) and (12)as potential state ARARs for Alternatives 2, 3, and 4 subject to the following conditions. The State of California, through CDFW, concurs that this statute addresses prohibited conduct but does not provide for or prescribe affirmative measures to avoid a "taking." Notwithstanding the absence of specific affirmative measures in the statute, the Navy will implement reasonable measures to ensure adequate protection of ecological receptors during response action construction following issuance of a CERCLA decision document pursuant to the Navy's obligations under CERCLA to select removal or remedial actions that are protective of human health and the environment [see CERCLA § 121(b)(1)]. The Navy will coordinate with the State, through CDFW-OSPR, prior to implementation of such reasonable measures. Reasonable measures may include the following: biological monitoring and avoidance, biological education training for field personnel, presence of USFWS-qualified biologist (reviewed by CDFW) during all ground-disturbing field activities, and implementation of the other conservation measures in accordance with the 2018 amendment to the Biological Opinion (USFWS, 2018). Additionally, the CDFWPs (CDFW, 2012) will be considered in the development of protective measures to reduce/prevent impacts to the ecosystem, particularly for State threatened or endangered and fully protected birds. The Navy understands that the State reserves the right to conduct periodic site visits during removal activities to confirm implementation of avoidance measures.

The Navy does not accept California Fish and Game Code § 1908 because no endangered native or rare plants have been observed on the Bermed Area (USFWS, 2018).

California Fish and Game Code §§ 3503.5 and 3513

California Fish and Game Code § 3503.5 prohibits the take, possession, or destruction of any birds in the orders of Falconiformes or Strigiformes (birds-of-prey) or to take possess or destroy the nests or eggs of such birds. California Fish and Game Code § 3513 requires action to be taken to prevent the take of migratory nongame birds (as designated in the MBTA). The State has withdrawn its previous identification of these

requirements as State ARARs in light of the Navy's identification of the substantive provisions of the MBTA as a relevant and appropriate federal ARAR for this action.

California Fish and Game Code §§ 3005 and 3503

California Fish and Game Code § 3005 makes it is unlawful to take birds or mammals with any net, pound, cage, trap, set line or wire, or poisonous substance, or to possess birds or mammals so taken, whether taken within or without this state.

California Fish and Game Code § 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

The Navy is not going to take any bird or mammal with a net, pound, cage, trap, set line or wire. Further, this NTCRA is addressing potential MEC/MPPEH remaining in subsurface soil at the Bermed Area. The potential MEC/MPPEH does not poison birds or mammals as prohibited in California Fish and Game Code § 3005. Chemical contamination could be considered similar to poisoning for chemicals that present ecological risk. Based on the RI, no munitions constituents (MC) are present in soil at concentrations that present risk to the environment. Under Alternatives 3 and 4 soil samples would be collected and analyzed for MC and contaminated hot spots would be excavated. Therefore, the Navy does not accept California Fish and Game Code § 3005 as a potential ARAR.

The Navy has determined that California Fish and Game Code § 3503 is not applicable or relevant and appropriate. The State of California, through CDFW, asserts that § 3503 is a state ARAR because it is relevant and appropriate. Whereas the Navy and the State have not agreed upon whether California Fish and Game Code § 3503 is an ARAR, this EE/CA documents each party's position on the statute but does not attempt to resolve the issue. Nonetheless, the Navy agrees that it will undertake the following measures in order to generally avoid harm to nests and eggs when there is the potential that they may be impacted by response action construction: survey the area for nests or eggs prior to removing munitions to see if the removal would affect a nest or eggs; to the extent practicable, try to avoid affecting nests or eggs; and have biological monitors during the removal action. The State will not dispute the selected removal action for failure to identify California Fish and Game Code § 3503 as an ARAR because the State has determined that the mutually agreed-upon measures to generally avoid harm will result in substantive compliance with the State requirement.

California Fish and Game Code § 5650(a), (b) and (c)

California Fish and Game Code§ 5650(a), (b) and (c) prohibits depositing or placing, where it can pass into waters of the state, any petroleum products, factory refuse, sawdust, shavings, slabs or edgings, and any substance deleterious to fish, plant life, or

bird life. California Fish and Game Code § 5650(b) states that this section does not apply to a discharge or a release that is expressly authorized pursuant to, and in compliance with, the terms and conditions of a waste discharge requirement pursuant to California Water Code (C.W.C.) § 13263 or a waiver issued pursuant to C.W.C. § 13269, subdivision (a), issued by the State Water Resources Control Board (SWRCB) or Water Board after a public hearing, or that is expressly authorized pursuant to, and in compliance with, the terms and conditions of a federal permit for which the SWRCB or Water Board has, after a public hearing, issued a water quality certification pursuant to C.W.C. § 13160.

The Navy accepts California Fish and Game Code § 5650(a)(6) as a potential state ARAR for Alternatives 3 and 4. Alternatives 3 and 4 are the only alternatives that include significant response action construction. The potential for discharge associated with Alternatives 3 and 4 construction is very low because the nearest surface water to the Bermed Area is a seasonal pond located 1,970 feet from the southwestern boundary of the Bermed Area (TriEco-Tt, 2017) and the construction would occur in the summer. However, the Navy will determine if the earthmoving activities could result in the placement of prohibited materials in the waters of the state in the removal action planning documents. If there is the potential for discharge, the Navy will develop appropriate measures, such as stormwater controls, to prevent the discharge to the seasonal pond.

Fish and Game Commission Wetlands Policy

There are no wetlands on the Bermed Area Site and none of the alternatives would affect a wetland.

Section A.4 Action-Specific ARARs

The EE/CA evaluates response action alternatives for the Bermed Area at the former NAVWPNSTA Seal Beach Det Concord. This ARARs analysis is based on four alternatives:

- Alternative 1: No Action
- Alternative 2: LUCs
- Alternative 3: Berm Removal, Post-Removal Survey by DGM, and Destruction
- Alternative 4: Berm Removal, Post-Removal Survey by AGC, and Destruction

Section 4.2 of the EE/CA provides detailed descriptions of the removal action alternatives.

Table A4-1 at the end of this appendix presents federal and state potential action-specific ARARs for the Bermed Area. This section discusses the requirements determined to be pertinent to each alternative being evaluated for the Bermed Area. A discussion of how the alternative complies with each identified ARAR also is provided.

A.4.1 Alternative 1 – No Action

There is no need to identify action-specific ARARs for the no action alternative because ARARs apply to “any removal or remedial action conducted entirely on-site” and “no action” is not a removal or remedial action ((EPA, 1991b). Therefore, a discussion of action-specific ARARs is not appropriate for this alternative.

A.4.2 Alternative 2 –Land Use Controls

Alternative 2 include implementation of LUCs, specifically a prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and military munitions recognition and safety training for construction personnel are provided, to reduce/mitigate exposure of receptors to MEC/MPPEH under the berm at the Bermed Area Site. Alternative 2 does not include treating or removing any MEC/MPPEH from the site. LUCs are required to maintain the integrity of the site by preventing unacceptable risk to human health due to explosive hazards while still allowing access to the site. Please see Section 4.2.2 of the main text of the EE/CA for specific details on Alternative 2.

The following are potential action-specific ARARs for Alternative 2.

A.4.2.1 Federal ARARs

There are no potential federal ARARs for the land use controls. The Navy has identified the following requirements as potential ARARs for the military munitions that may remain at the site. The requirements for military munitions have been consolidated into 40 CFR 266, Subpart M, with appropriate reference to other requirements (e.g., treatment and disposal).

The Navy has identified the following federal requirements as potential action-specific ARARs for the military munitions that may remain in the subsurface at the site:

- The requirement that the treatment and disposal of military munitions comply with the treatment and disposal requirements of RCRA at 40 CFR § 266.206

The Navy has also identified the following as potential federal action-specific ARARs for munitions that remain in place:

- The requirement that owners and operators of RCRA hazardous waste facilities that store ignitable or reactive waste protect the facility from sources of ignition or reaction at 22 C.C.R. tit. 22, §66264.17(a) and (b)

The potential military munitions remaining on site are under the berm, which would function as an engineering control to prevent exposure and the institutional controls evaluated in Alternative 2 would ensure compliance with this potential ARAR.

A.4.2.2 State ARARs

No State ARARs were identified for the Bermed Area.

A.4.3 Alternative 3 – Berm Removal, Post-Removal Survey by DGM, and Destruction

Alternative 3 includes the removal of the soil berm followed by anomaly reacquisition, removal, and destruction by detonation to reduce/mitigate munitions-related items and the explosive hazard posed by MPPEH/MEC that may remain under the berm. UXO teams would intrusively investigate and remove the reacquired anomalies. If MPPEH/MEC is found that is unacceptable to move, it would be detonated in place. If the MPPEH/MEC is acceptable to move, it may be transported to a consolidated shot location within the footprint of the former berm location. All MEC items will be guarded until demolition is performed.. A post-removal DGM survey would be performed to confirm no subsurface anomalies remain. If anomalies are found, they would be reacquired, intrusively investigated, and removed and a post-removal verification survey using DGM methodologies would be re-performed to verify all anomalies have been removed. Additionally, soil samples would be collected for analysis of MC (metals and

explosives) if munitions-related items are discovered during the intrusive investigation or MPPEH/MEC are explosively treated (i.e., post-demolition shot). MC results would only be used to confirm no contamination remains following removal of MPPEH/MEC items or post-demolition. Please see Section 4.2.3 of the EE/CA for specific details on Alternative 3.

The following are potential action-specific ARARs for Alternative 3. However, actions associated with Alternative 3 trigger potential location-specific ARARs. Please see Section A.3 for the discussion of potential location-specific ARARs.

A.4.3.1 Federal ARARs

Federal ARARs were identified under RCRA and the Military Munitions Rule, as discussed below.

RCRA

The Navy may generate waste soil from hot spot excavations. The Navy will determine if the waste soil is hazardous at the time it is generated. The waste soil would then be disposed of off site. Potential ARARs for the identification and management of hazardous waste are listed below.

- RCRA hazardous waste identification requirements at 22 C.C.R. § 66262.11
- The requirement to analyze generated waste to determine if it is hazardous at 22 C.C.R. § 66264.13(a)
- If, based on the hazardous waste determination described under the federal chemical-specific ARARs discussion, wastes are determined to be hazardous, substantive requirements of 22 C.C.R., § 66262.34 (pertaining to hazardous waste accumulation) will be applicable
- Container storage (22 C.C.R., § 66264.171–66264.174, and .176-.178) are potential ARARs
- The requirement for the initial generator of waste to determine the applicable EPA hazardous waste number at 22 C.C.R. § 66268.9(a)

In addition, the Navy has identified the following temporary staging pile requirements as potential ARARs for managing soil that is removed from the berm:

- Allows generators to accumulate solid remediation waste in an EPA-designated pile for storage up to 2 years during remedial operations without triggering LDRs 40 C.F.R. § 264.554(a), (b), (d), (e), (g), (h), and (k)
- Requirements for closing the staging pile including the need to minimize or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous constituents, leachate, contaminated rainfall or

runoff, or waste decomposition products to groundwater or surface water or to the atmosphere at 22 C.C.R. § 66264.111(a) and (b)
- Requirements for closing the staging pile including the removal or decontamination of waste and contaminated containment systems, subsoil, and structures and equipment and manage them as hazardous waste and if hazardous waste is left on site, post-closure care shall be performed in accordance with closure and post-closure care requirements that apply to landfills at 22 C.C.R. § 66264.258(a)

Military Munitions Rule

The Military Munitions Rule identifies when conventional and chemical military munitions become a hazardous waste under RCRA. It also provides for safe storage and transport of such waste. The requirements for military munitions have been consolidated into 40 C.F.R. Part 266,subpart M with appropriate references to other requirements (e.g., treatment and disposal). These requirements are applicable federal ARARs for the proposed NTCRA at the Bermed Area. The state has not yet adopted the federal RCRA Military Munitions Rule and continues to regulate munitions items that meet the definition of "hazardous waste" under 22 C.C.R. hazardous waste regulations.

Munitions remaining on the Bermed Area Site meet the definition of solid waste identified as potential federal chemical-specific ARARs. The Navy has identified the following requirements as a potential federal ARARs for the waste munitions:

- The requirement to comply with the RCRA treatment requirements if the military munition is RCRA characteristic waste at 40 CFR § 266.206
- The requirements to detonate waste explosives in a manner that does not threaten human health or the environment and to detonate the explosives at locations that are a minimum distance away from the property of others at 22 C.C.R. § 66265.382

The Navy would characterize munitions found on the Bermed Area Site according to the definitions of RCRA characteristic waste by determining if the munition is live. If the munition is live, it meets the definition of a RCRA reactive or ignitable waste. The munition would be blown in place if it is unacceptable to move or moved, then detonated in the magazine at the Runway Debris Area. The detonation locations would meet the minimum distance requirements based on the pounds of waste explosives. The detonation would remove the RCRA reactive of ignitable waste characteristic and the waste would no longer be RCRA hazardous waste.

A.4.3.2 State ARARs

The Navy would determine if waste generated in Alternative 3 meets the definition of non-RCRA, state-regulated hazardous waste accepted as potential State chemical-specific ARARs.

A.4.4 Alternative 4 – Anomaly Reacquisition, Removal, Post-Removal Survey by AGC, and Destruction

Alternative 4 is identical to Alternative 3, except for the post-removal survey method. In Alternative 4, the post-removal verification survey would be performed using AGC in dynamic mode. There are no ARARs for post-removal verification survey methods. Other components of Alternative 4 are the same as Alternative 3 so the potential action-specific ARARs are the same.

Actions associated with Alternative 4 trigger potential location-specific ARARs. Please see Section A.3 for the discussion of potential location-specific ARARs.

A.4.4.1 Federal ARARs

The potential federal ARARs identified for Alternative 3 are potential federal ARARs for this alternative.

A.4.4.2 State ARARs

The Navy would determine if waste generated in Alternative 4 meets the definition of non-RCRA, state-regulated hazardous waste accepted as potential State chemical-specific ARARs.

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Section A.5 Summary

Controlling ARARs have been identified in the text of this appendix for each environmental medium of concern, location-specific characteristic of the Bermed Area Site, and evaluated removal action alternative.

The Navy has identified potential chemical-specific ARARs for characterizing waste and waste munitions from the State of California's approved RCRA program and the Military Munitions Rule

The Navy has identified several location-specific ARARs to protect biological resources at the Bermed Area. The grassland habitat is suitable to support federal and state threatened and endangered species; namely, the CRLF, CTS, and Swainson's hawk, and migratory birds, including the state fully protected White-tailed kite and Golden eagle.

Sources of potential action-specific ARARs include the Military Munitions Rule for the waste munitions and the approved State of California RCRA program.

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Section A.6 References

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TABLES

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Table A2-1: Federal and State Chemical-Specific Applicable or Relevant and Appropriate Requirements

Standard, Requirement, Criteria, or Limitation	Prerequisite	Citation[1]	Preliminary ARAR Determination	Comments
SOIL AND WASTE				
FEDERAL				
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, § 6901 through § 6991[i])[2]				
Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on TCLP, if concentrations of contaminants of concern in the waste exceeds the TCLP maximum concentrations.	Waste	22 C.C.R. , §§ 66261.21(a)(2) and (4), 66261.22(a)(1), 66261.23(a), 66261.24(a)(1), and 66261.100	Applicable	The substantive provisions of these requirements are potentially applicable to activities that generate waste. Waste, including waste munitions and waste soil that may be excavated with the removal of the munitions, may be generated in Alternatives 3 and 4. The Navy would characterize the waste at the time it is generated.
Military Munitions Rule (40 C.F.R. Part 266 Subpart M)[2]				
Identification of hazardous waste munitions and treatment and storage requirements for hazardous waste munitions.	Storage of military munitions	40 C.F.R. Part 266.202(b) and (c)	Applicable	The substantive provisions of these requirements define when military munitions meet the definition of solid waste. The military munitions that may remain under the berm meet the definition of solid waste. Alternative 3 would generate waste munitions. The Navy would characterize waste munitions by determining whether the munitions are live or inert. If the munitions are live, the Navy would render them inert using controlled detonation, the transport the material offsite for recycling or disposal.
STATE				
CalEPA Department of Toxic Substances Control				
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, § 6901 through § 6991[i])[2]				
Definition of non-RCRA hazardous waste	Waste	22 C.C.R. §§ 66261.22(a)(3) and (4), 66261.24(a)(2)–(a)(8), 66261.101(a)(1), (2), and (3)	Applicable	The substantive provisions of these requirements are potentially applicable to activities that generate waste. Waste, including waste munitions and waste soil that may be excavated with the removal of the munitions, may be generated in Alternatives 3 and 4. The Navy would characterize the waste at the time it is generated.

Notes:

1 = Only the substantive provisions of the requirements are cited in this table are ARARs

2 = Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statute or policy as potential ARARs; specific potential ARARs are addressed in the table below each general heading, only pertinent substantive requirements of specific citations are considered potential ARARs.

ARAR = applicable or relevant and appropriate requirement
CalEPA = California Environmental Protection Agency
C.C.R. = California Code of Regulations
C.F.R. = Code of Federal Regulations
ch. = Chapter
MEC = munitions and explosives of concern
MPPEH = material potentially presenting an explosive hazard
Navy = Department of the Navy
RCRA = Resource Conservation and Recovery Act
TCLP = toxicity characteristic leaching procedure
U.S.C. = United States Code
§ = Section
§§ = Sections

Table A3-1: Federal and State Location-Specific Applicable or Relevant and Appropriate Requirements

Location	Requirement	Prerequisite	Citation[1]	Preliminary ARAR Determination	Comments
FEDERAL					
Endangered Species Act of 1973 (16 U.S.C. §§ 1531–1543)[2]					
Location where endangered or threatened species are present or location designated as critical habitat	Federal agencies may not jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat.	Presence of endangered species, listed species, or critical habitat	16 U.S.C. §§ 1536(a)(2) and (3) and 1538(a)(1)	Applicable	The substantive requirements of these sections are potentially applicable because the following federal threatened and endangered species are present or potentially present at the Bermed Area: CRLF and CTS. Although the Section 7 consultation required under the federal ESA is considered a procedural requirement for onsite CERCLA actions, the Navy has obtained Biological Opinions from the USFWS for CERCLA activities in its installation and munitions response programs. The most recent Biological Opinion was a 2018 amendment. The Navy will comply with the conservation measures identified in the 2018 Biological Opinion amendment for ground disturbing activities conducted in Alternatives 3 and 4.
Migratory Bird Treaty Act of 1972 (16 U.S.C. §§ 703–712)[2]					
Migratory bird area	Protects almost all species of native migratory birds in the U.S. from unregulated "take," which can include poisoning at hazardous waste sites.	Presence of migratory birds	16 U.S.C. § 703	Relevant and appropriate	The substantive provisions of this section are potentially relevant and appropriate because migratory birds may be present or potentially present at the Bermed Area. None of the alternatives are expected to adversely impact migratory birds. The Navy will conduct an ecological survey of the Bermed Area before any earthmoving begins in Alternatives 3 and 4 to determine if any migratory bird is present and will be adversely affected by the activities. If migratory birds are present and would be adversely affected, the Navy will determine appropriate measures to protect the migratory bird.
STATE					
California Endangered Species Act (California Fish and Game Code §§ 2050–2116)[2]					
Area used by endangered or threatened species	No person shall take any endangered or threatened species.	Threatened or endangered species are present.	California Fish and Game Code § 2080	Relevant and appropriate	While California Fish and Game Code § 2080 does not qualify as an "applicable" ARAR because the United States of America has not waived sovereign immunity for this State of California requirement, the substantive provisions meet the pertinent NCP criteria under 40 C.F.R. § 300.400(g)(2)(vii) and are potentially "relevant and appropriate" because Swainson's hawk and CTS (state threatened species) are present at the Bermed Area. The Navy will complete an ecological survey before activities associated with removal action construction. If state threatened species are present at the site and may be affected by the removal action, the Navy will develop reasonable implementation actions in coordination with CDFW to ensure adequate protection of the species during removal action construction following issuance of an Action Memorandum.

Table A3-1: Federal and State Location-Specific Applicable or Relevant and Appropriate Requirements

Location	Requirement	Prerequisite	Citation[1]	Preliminary ARAR Determination	Comments
STATE *(continued)*					
California Fish and Game Code[2]					
Fully protected bird species/habitat	Fully protected birds or parts thereof may not be taken or possessed at any time.	A fully protected species must be potentially affected.	California Fish and Game Code § 3511(a)(1) and (b)(7) and (12)	Relevant and appropriate	The Navy accepts California Fish and Game Code § 3511(a)(1) and (b)(7) and (12) as potential State ARARs. While California Fish and Game Code § 3511 does not qualify as an "applicable" ARAR because the United States of America has not waived sovereign immunity for this State of California requirement, the substantive provisions meet the pertinent NCP criteria under 40 C.F.R. § 300.400(g)(2)(vii) and are "relevant and appropriate" because the Golden eagle and White-tailed kite are or may be present at the Bermed Area. The Navy will complete an ecological survey before earthmoving activities associated with response action construction. If the Golden eagle or the White-tailed kite are present at the site and may be affected by the response action, the Navy will develop reasonable implementation actions in coordination with CDFW to ensure adequate protection of the species during removal action construction following issuance of an Action Memorandum.
Waters of the state	Prohibits the passage of enumerated substances or materials into waters of the state deleterious to fish, plant life, mammals, or bird life	Discharge not authorized under C.W.C § 13263 or a waiver issued pursuant to Cal. Water Code § 13269(a) of the Water Code	California Fish and Game Code § 5650(a)(6)	Relevant and appropriate	The Navy accepts California Fish and Game Code § 5650(a)(6) as a potential state ARAR. The nearest surface water to the Bermed Area is a seasonal pond located 1,970 feet from the southwestern boundary of the Bermed Area. Alternatives 3 and 4 are the only alternatives evaluated in this EE/CA that includes significant earthmoving activities; therefore, they are the only alternatives that could result in the placement of prohibited materials. Potential discharge of material to surface water is unlikely since the removal action will occur in the summer (April to October) when the likelihood of water in the pond is minimal and the pond is nearly 2,000 feet away from the site. However, during development of the removal action planning documents, the Navy will determine if the earthmoving activities could result in the placement of prohibited materials in the waters of the state in the removal action planning documents based on the specific construction actions and locations of the actions. If there is the potential for discharge, the Navy will develop appropriate measures, such as stormwater controls, to prevent the discharge to the seasonal pond.

Notes:

1 = Only the substantive provisions of the requirements cited in this table are ARARs.

2 = Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statute or policy as potential ARARs; specific potential ARARs are addressed in the table below each general heading, only pertinent substantive requirements of specific citations are considered potential ARARs.

ARAR = applicable or relevant and appropriate requirements
C.F.R. = Code of Federal Regulations
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
ch. = Chapter
C.W.C. = California Water Code
CRLF = California red-legged frog
CTS = California tiger salamander
EE/CA = Engineering Evaluation/Cost Analysis
ESA = Endangered Species Act
Navy = Department of the Navy
U.S.C. = United States Code
USFWS = U.S. Fish and Wildlife Service
§ = Section
§§ = Sections

Table A4-1: Federal and State Action-Specific Applicable or Relevant and Appropriate Requirements

Action	Requirement	Prerequisite	Citation[1]	Preliminary ARAR Determination			Comments
				A	RA	TBC	
Alternative 2 – LUCs							
Disposal of military munitions	Standards for the treatment and disposal of waste military munitions	Waste military munitions	40 CFR § 266.206	✓			Waste munitions would remain in the subsurface of the Bermed Area and exposure would be controlled through administrative policies.
Requirements for ignitable or reactive waste	The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. The waste shall be separated and protected from sources of ignition or reaction and while ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to designated locations. The owner or operator of a facility that transfers, treats, stores, or disposes of ignitable or reactive waste shall take precautions to prevent reactions.	Facilities that transfer, treat, stores or dispose of ignitable or reactive waste	Cal. Code Regs. tit. 22, § 66264.17(a) and (b)	✓			The regulations are potential ARARs for the disposal of munitions that will remain in the subsurface at the Bermed Area.
Alternatives 3 and 4– Berm Removal, Post-Removal Verification Survey, and Destruction							
Onsite waste generation	Person who generates waste shall determine if that waste is a hazardous waste.	Generator of waste.	22 C.C.R. § 66262.11	✓			The Navy may generate waste when excavating soil and munitions-related material. The Navy will determine if the waste soil or munitions-related material is hazardous at the time it is generated.
Onsite waste generation	Requirements for analyzing waste for determining whether waste is hazardous.	Generator of waste.	22 C.C.R., § 66264.13(a)	✓			Applicable to operations where waste is generated. The Navy may generate waste when excavating soil and munitions-related material. The Navy will determine if the waste soil or munitions-related material is hazardous at the time it is generated.
Store hazardous waste on site	Onsite hazardous waste accumulation is allowed for up to 90 days without getting a RCRA treatment, storage, and disposal permit, if the waste is stored in containers that comply with 22 C.C.R. § 66264.171-.178	Hazardous waste	22 C.C.R. § 66262.34	✓			The waste soil from potential hot spot excavations is not expected to be RCRA hazardous waste. However, the waste soil may be stored in containers to determine if it is hazardous, and if so, would be disposed of off site within the 90-day time period.

Table A4-1: Federal and State Action-Specific Applicable or Relevant and Appropriate Requirements

Action	Requirement	Prerequisite	Citation[1]	Preliminary ARAR Determination			Comments
				A	RA	TBC	
Alternatives 3 and 4 – Berm Removal, Post-Removal Verification Survey, and Destruction *(continued)*							
Container storage	Containers of RCRA hazardous waste must be: • maintained in good condition, • compatible with hazardous waste to be stored, and • closed during storage except to add or remove waste.	Storage of RCRA hazardous waste not meeting small-quantity generator criteria before treatment, disposal, or storage elsewhere, in a container.	22 C.C.R., div. 4.5 ch. 14, Article 9 §§ 66264.171, 66264.172, 66264.173, 66264.174, 66264.176, 66264.177, and 66264.178	✓			If hotspot soil excavation is necessary, the Navy would temporarily store the excavated soil in containers prior to offsite disposal. The soil is not expected to be hazardous; but it would be stored in containers until the determination is made as to whether the waste soil is hazardous or other regulated waste.
Construct temporary staging pile to hold soil.	Allows generators to accumulate solid remediation waste in an EPA-designated pile for storage up to 2 years during remedial operations without triggering LDRs.	RCRA hazardous waste temporarily stored in piles	40 C.F.R. § 264.554(a), (b), (d), (e), (g), (h), and (k)		✓		The Navy would construct a temporary staging pile to store excavated soil from the berm in order to determine if MPPEH is present. The soil to be stockpiled is not expected to be contaminated and once the screening for MPPEH is completed, the soil will be returned to the area (and is not waste), so these requirements are identified as relevant and appropriate. If hot spot soil excavation is necessary based on contamination, the waste soil would be managed in containers, not the temporary staging pile.
Close the temporary staging pile	Minimize the need for further maintenance controls and minimize or eliminate, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to groundwater or surface water or to the atmosphere.	Hazardous waste management facility.	22 C.C.R., § 66264.111(a) and (b)		✓		The soil to be stockpiled is not expected to be contaminated and will be returned to the area (and is not waste), so these requirements are identified at relevant and appropriate. The Navy will close the temporary stockpile pursuant to these requirements. Based on the nature of the waste and the requirements for safe handling of munitions, no contamination is expected to occur from runoff, leachate, decomposition products, or discharge to air.
Close the temporary staging pile	At closure, owner shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste. If waste is left on the site, perform postclosure care in accordance with the closure and postclosure care requirements that apply to landfills.	Waste pile used to store hazardous waste.	22 C.C.R. § 66264.258(a)		✓		The soil to be stockpiled is not expected to be contaminated and will be returned to the area (and is not waste), so these requirements are identified at relevant and appropriate. The Navy will close the soil stockpile when the munitions clearing is complete and will return the soil to the excavation and will remove and dispose of the plastic sheeting. No waste would be left on site.

Table A4-1: Federal and State Action-Specific Applicable or Relevant and Appropriate Requirements

Action	Requirement	Prerequisite	Citation[1]	Preliminary ARAR Determination			Comments
				A	RA	TBC	
Alternatives 3 and 4 – Berm Removal, Post-Removal Survey, and Destruction *(continued)*							
Generate waste	The initial generator of a waste shall determine each EPA hazardous waste code in order to determine the applicable treatment standards, which may be made concurrently with the hazardous waste determination required in § 66262.11.	Waste	C.C.R. tit. 22, § 66268.9(a)	✓			The Navy may generate waste when excavating soil. The Navy will determine if the waste soil is hazardous at the time it is generated. The Navy would characterize this waste and, if hazardous, will determine the EPA waste code in order to determine applicable treatment standards.
Treatment and disposal of munitions	The treatment and disposal of munitions are subject to the applicable RCRA standards	Munitions	40 C.F.R. § 266.206	✓			The Navy would characterize munitions found on the Bermed Area Site according to the definitions of RCRA characteristic waste by determining if the munition is live. If the munition is live, it meets the definition of a RCRA reactive or ignitable waste. The munition would be blown in place if it is unacceptable to move or moved, then detonated. The detonation would remove the RCRA reactive of ignitable waste characteristic and the waste would no longer be RCRA hazardous waste.
Open detonation of Waste Explosives	Owners or operators who open detonate waste explosives shall do so in a manner that does not threaten human health or the environment and at minimum prescribed distances from the property of others.	Waste explosives, which has the potential to detonate, and bulk military propellants which cannot safely be disposed of through other modes of treatment.	22 C.C.R. § 66265.382		✓		Detonation of munitions items by explosive ordnance disposal personnel or UXO-trained specialists may be performed as part of the Alternative 3. Therefore, the substantive requirements pertaining to the open detonation of waste explosives are relevant and appropriate.

Notes:

1 = Only the substantive provisions of the requirements cited in this table are ARARs.

A = applicable
ARAR = applicable or relevant and appropriate requirements
C.C.R. = California Code Regulations
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
ch. = Chapter
Civ. = Civil
CWA = Clean Water Act
div. = Division
DTSC = Department of Toxic Substances Control
EPA = U.S. Environmental Protection Agency
LUCs = land use controls
Navy = Department of the Navy
RA = relevant and appropriate
RCRA = Resource Conservation and Recovery Act
SWRCB = State Water Resources Control Board
TBC = to be considered
U.S.C. = United States Code
UXO = unexploded ordnance
§ = Section
§§ = Sections

APPENDIX B
COST ANALYSIS

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Table B-1. Alternatives Cost Estimate Summary

Site: Bermed Area, UXO Site 0012

Location: NAVWPNSTA Seal Beach Det Concord

Phase: EE/CA (-30% / +50%)

Remedial Alternative	Total Capital Cost	Total Periodic Cost	Period of Analysis[2]	Total Cost[3]	Present Value Cost[4]	Range for -30% / +50%
1	$ -	$ -	30 years	$ -	$ -	$ - to $ -
2	$ 70,000	$ -	30 years	$ 70,000	$ 70,000	$ 49,000 to $ 105,000
3	$ 509,700	$ -	30 years	$ 509,700	$ 509,700	$ 356,790 to $ 764,550
4	$ 576,900	$ -	30 years	$576,900	$576,900	$ 403,830 to $ 865,350

Notes:

(1) Appended tables summarize backup calculations for all cost estimates provided.

(2) Period of analysis assumes the base year is 2020.

(3) Total cost includes a 25 percent contingency factor to account for changes in scope, changes to bid quantities, and inflation.

(4) Based on a 2.4 percent discount factor for projects with a 30-year (or greater) duration (base year of 2020), as specified for federal facility sites in Appendix C of Office of Management and Budget Circular A-94 (effective March 2022) at https://www.whitehouse.gov/wp-content/uploads/2022/05/discount-history.pdf.

Table B-2. Alternative 2 - Cost Summary

Site: Bermed Area, UXO Site 0012 **Description:** Alternative 2 (Land Use Controls)

Location: NAVWPNSTA Seal Beach Det Concord Cost Summary for the NTCRA EE/CA

CAPITAL COSTS:

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	SOURCE/NOTES
Pre-construction documents					
Land Use Controls Remedial Design (LUC RD)	1	LS	$ 40,000.00	$ 40,000.00	Assumes internal draft, draft, and final verisons of LUC RD
Site Management Plan (SMP)	1	LS	$ 30,000.00	$ 30,000.00	Assumes internal draft, draft, and final verisons of SMP
			SUBTOTAL:	**$70,000.00**	

Table B-2. Alternative 2 - Cost Summary

Site: Bermed Area, UXO Site 0012
Location: NAVWPNSTA Seal Beach Det Concord

Description: Alternative 2 (Land Use Controls)
Cost Summary for the NTCRA EE/CA

Year	Capital Costs	Annual O&M Costs [2]	Five-Year Review Report[2]	Total Cost	Discount Factor (2.4%)[1]	Present Value
0	$70,000	$0	$0	$70,000	1.0000	$70,000
1	$0	$0	$0	$0	0.9766	$0
2	$0	$0	$0	$0	0.9537	$0
3	$0	$0	$0	$0	0.9313	$0
4	$0	$0	$0	$0	0.9095	$0
5	$0	$0	$0	$0	0.8882	$0
6	$0	$0	$0	$0	0.8674	$0
7	$0	$0	$0	$0	0.8470	$0
8	$0	$0	$0	$0	0.8272	$0
9	$0	$0	$0	$0	0.8078	$0
10	$0	$0	$0	$0	0.7889	$0
11	$0	$0	$0	$0	0.7704	$0
12	$0	$0	$0	$0	0.7523	$0
13	$0	$0	$0	$0	0.7347	$0
14	$0	$0	$0	$0	0.7175	$0
15	$0	$0	$0	$0	0.7006	$0
16	$0	$0	$0	$0	0.6842	$0
17	$0	$0	$0	$0	0.6682	$0
18	$0	$0	$0	$0	0.6525	$0
19	$0	$0	$0	$0	0.6372	$0
20	$0	$0	$0	$0	0.6223	$0
21	$0	$0	$0	$0	0.6077	$0
22	$0	$0	$0	$0	0.5935	$0
23	$0	$0	$0	$0	0.5796	$0
24	$0	$0	$0	$0	0.5660	$0
25	$0	$0	$0	$0	0.5527	$0
26	$0	$0	$0	$0	0.5398	$0
27	$0	$0	$0	$0	0.5271	$0
28	$0	$0	$0	$0	0.5148	$0
29	$0	$0	$0	$0	0.5027	$0
30	$0	$0	$0	$0	0.4909	$0
Total Costs:	**$ 70,000**	$0	$0	**$70,000**		**$70,000**

Notes:
(1) Based on a 2.4 percent discount factor for projects with a 30-year (or greater) duration (base year of 2020), as specified for federal facility sites in Appendix C of Office of Management and Budget Circular A-94 (effective March 2022) at https://www.whitehouse.gov/wp-content/uploads/2022/05/discount-history.pdf.
(2) There are no annual O&M activities or 5-year reviews associated with this alternative.

BMPs = best management practices
EE/CA = Engineering Evaluation/Cost Analysis
LS = lump sum
NTE = not to exceed

Table B-3. Alternative 3 - Cost Summary

Site: Runway Debris Area
Location: NAVWPNSTA Seal Beach Det Concord

Description: Alternative 3 (Berm Removal, Post-Removal Survey [DGM], and Cost Summary for the NTCRA EE/CA

CAPITAL COSTS: DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	SOURCE/NOTES
Planning documents	1	LS	$152,185.00	$152,185	Includes Internal Draft, Draft, and Final document versions of a EE/CA, AM, Work Plan, SAP, EPP, QC Plan, APP/SSHP, and ESS
Mobilization-Demobilization/Site Preparation	1	LS	$53,250.00	$53,250	Includes costs to mobilize and demobilize personnel and equipment to the site; install BMPs, and establish work zones. Includes 12 field staff and 2 pieces of equipment.
			SUBTOTAL:	**$205,435**	
Site Work					
Subsurface Anomaly Removal	1	LS	$88,000	$88,000	Includes labor and equipment to remove all MPPEH from the berm. Includes 12 staff and 1 piece of equipment.
Soil Sampling	1	LS	$26,750.00	$26,750	Includes costs for soil sampling, as necessary. Sampling will occur under low order or compromised MPPEH/MEC items, as well as post-demolition shot locations where BIP or consolidated MPPEH/MEC detonation occurs. Includes 2 staff.
DGM Post-Removal Survey	1	LS	$32,000.00	$32,000	Includes costs for geophysical team to DGM the berm footprint after removal is compete. Includes 2 staff and 1 piece of equipment. Assumes no target anomalies will be identified during the DGM survey requiring intrusive
Demolition/Demilitarization	1	LS	$28,350.00	$28,350	Includes costs for demotion and disposal of all MPPEH/MEC/MDAS. Includes 5 staff.
Site Restoration	1	LS	$16,100.00	$16,100	Includes costs for hydroseeding, final survey, erosion control BMPs, and site contouring. Includes 4 staff, 1 piece of equipment, and 2 subcontractors.
RACR	1	LS	$21,000	$21,000	Includes Internal Draft, Draft, and Final document versions of a Remedial Action Completion Report
AAR	1	LS	$17,200	$19,800	Includes Internal Draft, Draft, and Final document versions of an After Action Report
Project Management	10%			$43,744	Includes project management during all phases of construction, regulatory interface, and permitting.
Construction Management	10%			$28,525	Includes construction management during all phases of construction plus bonding
			SUBTOTAL:	**$304,269**	
			TOTAL CAPITAL COSTS:	**$509,700**	

Table B-3. Alternative 3 - Cost Summary

Site: Runway Debris Area
Location: NAVWPNSTA Seal Beach Det Concord

Description: Alternative 3 (Berm Removal, Post-Removal Survey [DGM], and Cost Summary for the NTCRA EE/CA

Year	Capital Costs	Annual O&M Costs	Five-Year Review Report	Total Cost	Discount Factor (2.4%)[1]	Present Value
0	$509,700	$0	$0	$509,700	1.0000	$509,700
1	$0	$0	$0	$0	0.9766	$0
2	$0	$0	$0	$0	0.9537	$0
3	$0	$0	$0	$0	0.9313	$0
4	$0	$0	$0	$0	0.9095	$0
5	$0	$0	$0	$0	0.8882	$0
6	$0	$0	$0	$0	0.8674	$0
7	$0	$0	$0	$0	0.8470	$0
8	$0	$0	$0	$0	0.8272	$0
9	$0	$0	$0	$0	0.8078	$0
10	$0	$0	$0	$0	0.7889	$0
11	$0	$0	$0	$0	0.7704	$0
12	$0	$0	$0	$0	0.7523	$0
13	$0	$0	$0	$0	0.7347	$0
14	$0	$0	$0	$0	0.7175	$0
15	$0	$0	$0	$0	0.7006	$0
16	$0	$0	$0	$0	0.6842	$0
17	$0	$0	$0	$0	0.6682	$0
18	$0	$0	$0	$0	0.6525	$0
19	$0	$0	$0	$0	0.6372	$0
20	$0	$0	$0	$0	0.6223	$0
21	$0	$0	$0	$0	0.6077	$0
22	$0	$0	$0	$0	0.5935	$0
23	$0	$0	$0	$0	0.5796	$0
24	$0	$0	$0	$0	0.5660	$0
25	$0	$0	$0	$0	0.5527	$0
26	$0	$0	$0	$0	0.5398	$0
27	$0	$0	$0	$0	0.5271	$0
28	$0	$0	$0	$0	0.5148	$0
29	$0	$0	$0	$0	0.5027	$0
30	$0	$0	$0	$0	0.4909	$0
Total Costs:	**$509,700**	$0	$0	**$509,700**		**$509,700**

Notes:
(1) Based on a 2.4 percent discount factor for projects with a 30-year (or greater) duration (base year of 2020), as specified for federal facility sites in Appendix C of Office of Management and Budget Circular A-94 (effective March 2022) at https://www.whitehouse.gov/wp-content/uploads/2022/05/discount-history.pdf.

BMPs = best management practices
EE/CA = Engineering Evaluation/Cost Analysis
LS = lump sum
NTE = not to exceed

Table B-3. Alternative 4 - Cost Summary

Site: Bermed Area, UXO Site 0012 **Description:** Alternative 4 (Berm Removal, Post-Removal Survey [AGC], and Destruction)
Location: NAVWPNSTA Seal Beach Det Concord Cost Summary for the NTCRA EE/CA

CAPITAL COSTS: DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	SOURCE/NOTES[1]
Planning documents	1	LS	$179,015	$179,015	Includes Internal Draft, Draft, and Final document versions of a EE/CA, AM, Work Plan, SAP, EPP, QC Plan, APP/SSHP, and ESS
Mobilization-Demobilization/ Site Preparation	1	LS	$53,250	$53,250	Includes costs to mobilize and demobilize personnel and equipment to the site; install BMPs, and establish work zones. Includes 12 field staff and 2 pieces of equipment.
			SUBTOTAL:	**$232,265**	
Site Work					
Subsurface Anomaly Removal	1	LS	$88,000	$88,000	Includes labor and equipment to remove all MPPEH from the berm. Includes 12 staff and 1 piece of equipment.
Soil Sampling	1	LS	$26,750	$26,750	Includes costs for soil sampling, as necessary. Sampling will occur under low order or compromised MPPEH/MEC items, as well as post-demolition shot locations where BIP or consolidated MPPEH/MEC detonation occurs. Includes 2 staff.
AGC Post-Removal Survey	1	LS	$66,000	$66,000	Includes costs for geophysical team to AGC the berm footprint after removal is compete. Includes 2 staff and 1 piece of equipment. Assumes no target anomalies will be identified during the AGC survey requiring intrusive investigation.
Demolition/Demilitarization	1	LS	$28,350	$28,350	Includes costs for demotion and disposal of all MPPEH/MEC/MDAS. Includes 5 staff.
Site Restoration	1	LS	$16,100	$16,100	Includes costs for hydroseeding, final survey, erosion control BMPs, and site contouring. Includes 4 staff, 1 piece of equipment, and 2 subcontractors.
RACR	1	LS	$21,000	$21,000	Includes a Draft, Draft Final, and Final RACR and two rounds of comments.
AAR	1	LS	$17,200	$17,200	Includes Internal Draft, Draft, and Final document versions of an After Action Report
Project Management	10%			$49,567	Includes project management during all phases of construction, regulatory
Construction Management	10%			$31,665	Includes construction management, quality control, geotechnical testing, and
			SUBTOTAL:	**$344,632**	
			TOTAL CAPITAL COSTS:	**$576,900**	

Table B-3. Alternative 4 - Cost Summary

Site: Bermed Area, UXO Site 0012
Location: NAVWPNSTA Seal Beach Det Concord

Description: Alternative 4 (Berm Removal, Post-Removal Survey [AGC], and Destruction) Cost Summary for the NTCRA EE/CA

Year	Capital Costs	Annual O&M Costs	Five-Year Review Report	Total Cost	Discount Factor (2.4%)[1]	Present Value
0	$576,900	$0	$0	$576,900	1.0000	$576,900
1	$0	$0	$0	$0	0.9766	$0
2	$0	$0	$0	$0	0.9537	$0
3	$0	$0	$0	$0	0.9313	$0
4	$0	$0	$0	$0	0.9095	$0
5	$0	$0	$0	$0	0.8882	$0
6	$0	$0	$0	$0	0.8674	$0
7	$0	$0	$0	$0	0.8470	$0
8	$0	$0	$0	$0	0.8272	$0
9	$0	$0	$0	$0	0.8078	$0
10	$0	$0	$0	$0	0.7889	$0
11	$0	$0	$0	$0	0.7704	$0
12	$0	$0	$0	$0	0.7523	$0
13	$0	$0	$0	$0	0.7347	$0
14	$0	$0	$0	$0	0.7175	$0
15	$0	$0	$0	$0	0.7006	$0
16	$0	$0	$0	$0	0.6842	$0
17	$0	$0	$0	$0	0.6682	$0
18	$0	$0	$0	$0	0.6525	$0
19	$0	$0	$0	$0	0.6372	$0
20	$0	$0	$0	$0	0.6223	$0
21	$0	$0	$0	$0	0.6077	$0
22	$0	$0	$0	$0	0.5935	$0
23	$0	$0	$0	$0	0.5796	$0
24	$0	$0	$0	$0	0.5660	$0
25	$0	$0	$0	$0	0.5527	$0
26	$0	$0	$0	$0	0.5398	$0
27	$0	$0	$0	$0	0.5271	$0
28	$0	$0	$0	$0	0.5148	$0
29	$0	$0	$0	$0	0.5027	$0
30	$0	$0	$0	$0	0.4909	$0
Total Costs:	**$576,900**	$0	$0	**$576,900**		**$576,900**

Notes:

(1) Based on a 2.4 percent discount factor for projects with a 30-year (or greater) duration (base year of 2020), as specified for federal facility sites in Appendix C of Office of Management and

BMPs = best management practices
EE/CA = Engineering Evaluation/Cost Analysis
LS = lump sum
NTE = not to exceed

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APPENDIX C
SUPPORTING INFORMATION FOR ENVIRONMENTAL FOOTPRINT ANALYSIS RESULTS

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Environmental impacts are provided in this EE/CA for overall consideration of the NTCRA alternatives. The potential impacts to the environment that could occur during implementation of the alternatives were considered and include land and species impacts, power and water consumption, use of natural resources, air emissions, and production of waste materials. As part of the environment impact assessment, estimated numerical values were calculated for the green remediation metrics in accordance with EPA's "Methodology for Understanding and Reducing a Project's Environmental Footprint" (EPA, 2012).

The green remediation metrics, as defined by EPA (2012), are summarized below.

- Refined materials used on site—refers to the mass of manufactured or significantly processed materials that are used on site and come from offsite sources. Examples include chemicals, water, and plastics.
- Percent of refined materials from recycled or waste material—refers to the percentage of the "refined materials" that is produced using recycled or reused materials or is otherwise a waste product of a manufacturing process
- Unrefined materials used on site—refers to the mass of materials that are used at the site, come from offsite sources, and generally have not undergone significant processing or refinement.
- Percent of unrefined materials from recycled or waste material—refers to the percentage of "unrefined materials" obtained from recycled or reused materials or is otherwise a waste product.
- Onsite hazardous waste generated—refers to the mass of hazardous waste generated at the site and disposed of at an offsite hazardous waste facility or in a regulated onsite disposal unit. .
- Onsite nonhazardous waste generated—refers to the mass of nonhazardous waste that is generated at the site and disposed of off-site or in a regulated onsite disposal unit. An example would be excavated soil contaminated with MC.
- Percent of total potential onsite waste that is recycled or reused—reflects the total potential waste (hazardous or nonhazardous) generated at the site that is recycled or reused on or off site.
- Onsite water use—considers the source and amount of water used at the site, as well as the fate and quality of the water after use.
- Total energy use—refers to the total amount of energy used by the alternative for onsite and offsite activities, including electricity generation, transportation, materials manufacturing, and other offsite activities that support the alternative.
- Total energy voluntarily derived from renewable resources—refers to renewable energy that a project team voluntarily generates or uses in place of energy derived from other resources. This metric category comprises the following three submetrics that distinguish between various forms of renewable energy production and use:
    - Onsite energy generation or use and biodiesel use—refers to renewable energy that is generated at the site and biodiesel used both on site and off site. To be counted toward this metric, the rights to the renewable energy generated by the systems described here need to be retained by the cleanup project and not transferred to other parties or facilities.

  - Voluntary purchase of renewable electricity—refers to the voluntary purchase of renewable electricity from an electricity provider in the form of a "green pricing" or "green marketing" product.
  - Voluntary purchase of renewable energy certificates—refers to the direct purchase of renewable energy certificates.

- Onsite nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter less than 10 microns in size (PM10) emissions—refers to the sum of the onsite emissions for NOx, SOx, and PM10 before consideration of potential reductions from voluntary purchases of emissions off-sets, renewable electricity, renewable energy certificates, or similar products.
- Onsite hazardous air pollutant (HAP) emissions—refers to onsite combined HAP emissions (i.e., the sum of all listed HAPs) before consideration of potential reductions from voluntary purchases of emissions offsets, renewable electricity, renewable energy certificates, or similar products.
- Total NOx, SOx, and PM10 emissions—refers to the total onsite and offsite NOx, SOx, and PM10 emissions before consideration of potential reductions from voluntary purchases of emissions offsets, renewable electricity, renewable energy certificates, or similar products.
- Total HAP emissions—refers to the total onsite and offsite HAP emissions before consideration of potential reductions from voluntary purchases of emissions offsets, renewable electricity, renewable energy certificates, or similar products.
- Greenhouse gas (GHG) emissions—refers to the total onsite and offsite GHG emissions associated with the alternative measured in tons of carbon dioxide equivalent of global warming potential before consideration of potential reductions from voluntary purchases of emissions offsets, renewable electricity, renewable energy certificates, or similar products. Onsite emissions are not presented separately from offsite emissions because the effects of GHGs are independent of the location of the emissions.
- Land and ecosystems—qualitative description of the likely land and ecosystem impacts during alternative implementation.

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0	--	--	--	--	--	--	--	--	--	--
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	--
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	--
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0	--	--	--	--	--	--	--	--	--	--
On-site diesel use - Other	Gal	900	0.139	125.1	22.5	20250	0.17	153	0.0054	4.86	0.0034	3.06	5.2E-06	0.00468
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquefied petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquefied petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**125**		**20,250**		**153**		**5**		**3**		**0**
Other On-site Emissions														
On-site HAP process emissions	lbs	0	--	--	--	--	--	--	--	--	--	--	1	0
On-site GHG emissions	lbs CO2e	0	--	--	1	0	--	--	--	--	--	--	--	--
On-site carbon storage	lbs CO2e	0	--	--	1	0	--	--	--	--	--	--	--	--
GHG avoided by flaring on-site landfill methane	Lbs	0	--	--	-262	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
Other on-site NOx emissions or reductions	lbs	0	--	--	--	--	1	0	--	--	--	--	--	--
Other on-site SOx emissions or reductions	lbs	0	--	--	--	--	--	--	1	0	--	--	--	--
Other on-site PM emissions or reductions	lbs	0	--	--	--	--	--	--	--	--	1	0	--	--
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Totals				**125.10**		**20,250**		**153**		**5**		**3**		**0**

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.607887	0	0.057518	0	0.210237	0
Voluntary purchase of renewable electricity	MWh	0	--	--	--	--	--	--	--	--	--	--	--	--
Voluntary purchase of RECs	MWh	0	--	--	--	--	--	--	--	--	--	--	--	--

All Components - Transportation Footprint (Scope 3a)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Conventional Energy														
Transportation diesel use	gal	13.4	0.139	1.8626	22.5	301.5	0.17	2.278	0.0054	0.07236	0.0034	0.04556	5.2E-06	6.97E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	5.2E-06	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	106	0.124	13.144	19.79	2097.74	0.035	3.71	0.00036	0.03816	0.003	0.318	0.00661	0.70066
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**15**		**2,399**		**6**		**0**		**0**		**1**
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmpg		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Transportation Totals				**15**		**2399**		**6**		**0**		**0**		**1**

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	8.46E-05	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	5.89E-05	0
Gravel/Sand Mix, 65% Gravel	lb	0	2.48E-05	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	1.65E-05	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	6.41E-05	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	2.9E-06	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	2.48E-05	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	2.48E-05	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.004038	0	0.005133	0	0.001443	0	0.000163	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	1.65E-05	0	0.000015	0	0.000002	0	2.05E-10	0

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Off-Site Footprint (Scope 3b) *(continued)*

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	6.29E-05	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	4.1E-06	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	913.4	0.017	15.5278	3.02	2758.468	0.0051	4.65834	0.0062	5.66308	0.0017	1.55278	0.0011	1.00474
Gasoline produced	gal	106	0.033	3.498	2.8	296.8	0.0046	0.4876	0.005	0.53	0.0015	0.159	0.001	0.106
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	6.1E-06	0
Fuel Processing Subtotals				**19.0258**		**3055.268**		**5.14594**		**6.19308**		**1.71178**		**1.11074**
Public water	gal x 1000	30	0.0092	0.276	5	150	0.0097	0.291	0.0059	0.177	0.016	0.48	0.000015	0.00045
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Off-Site Footprint (Scope 3b) *(continued)*

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.853438	0	0.131402	0	0.303876	0	0.04557	0	0.033017	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.073171	0	9.325458	0	0.212744	0	0.49824	0	0.074736	0	0.054233	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.007402	0	0.645948	0	0.006768	0	0.014793	0	0.002202	0	0.001554	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.01744	0	1.338192	0	0.007011	0	0.01325	0	0.00194	0	0.001283	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.871705	0	0.007981	0	0.014154	0	0.002055	0	0.001287	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.033648	0	4.29897	0	0.095459	0	0.222665	0	0.03351	0	0.024251	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.014122	0	1.472673	0	0.007981	0	0.013602	0	0.00198	0	0.001202	0
Off-site Laboratory Analysis - PCBs	sample	0	0.051277	0	5.224902	0	0.083334	0	0.190477	0	0.028439	0	0.021208	0
Off-site Laboratory Analysis - VOCs	sample	0	0.076204	0	9.016814	0	0.104498	0	0.227074	0	0.033951	0	0.023589	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.07156	0	7.870422	0	0.145945	0	0.337304	0	0.050485	0	0.037258	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.460789	0	0.005752	0	0.021024	0

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Off-Site Footprint (Scope 3b) *(continued)*

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
User-defined Materials														
User-defined material #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #4	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #5	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #6	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #7	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #8	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #9	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined Waste Destinations														
User-defined recycled/reused off-site #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	Energy (MMBtu / unit)		GHG (lbs CO2e / unit)		NOx (lbs/unit)		SOx (lbs/unit)		PM (lbs/unit)		HAPs (lbs/unit)	
User-defined non-hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Off-site Totals				**19.3018**		**3205.268**		**5.43694**		**6.37008**		**2.19178**		**1.11119**

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.607887	0	0.057518	0	0.210237	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.460789	0	0.005752	0	0.021024	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	106	0.124	13.144	19.79	2097.74	0.035	3.71	0.00036	0.03816	0.003	0.318	0.00661	0.70066
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	106	0.033	3.498	2.8	296.8	0.0046	0.4876	0.005	0.53	0.0015	0.159	0.001	0.106
Total Gasoline Footprint		**106**		**16.642**		**2394.54**		**4.1976**		**0.56816**		**0.477**		**0.80666**
Total Diesel Footprint														
On-site diesel use - Other	gal	900	0.139	125.1	22.5	20250	0.17	153	0.0054	4.86	0.0034	3.06	5.2E-06	0.00468
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	13.4	0.139	1.8626	22.5	301.5	0.17	2.278	0.0054	0.07236	0.0034	0.04556	5.2E-06	6.97E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	5.2E-06	0
Diesel produced	gal	913.4	0.017	15.5278	3.02	2758.468	0.0051	4.65834	0.0062	5.66308	0.0017	1.55278	0.0011	1.00474
Total Diesel Footprint		**913.4**		**142.4904**		**23309.968**		**159.9363**		**10.59544**		**4.65834**		**1.00949**

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

Bermed Area Alt 3

All Components

All Components - Intermediate Totals *(continued)*

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Fuel Footprints *(continued)*														
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	6.3E-06	0	0.00076	0	8.4E-06	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	6.1E-06	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquefied Petroleum Gas Footprint														
On-site liquefied petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquefied petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquefied petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

ccf = centum cubic feet
CH4 = methane
CO2 = carbon dioxide
Conv. = Conversion
gal = gallon
GHG = greenhouse gas
HAP = hazardous air pollutant
lbs = pounds
MWh = megawatt-hours
N/A = not applicable
Nox = nitrogen oxides
NP = not probable
SOx = sulfur oxides
TBD = to be determined

APPENDIX D
RESPONSES TO REGULATORY AGENCY COMMENTS ON THE DRAFT EE/CA

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Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
1	ES.1, 4th paragraph (para)	ES-2, pg6	This sentence and its placement in this paragraph are confusing and seem to suggest that the Bermed Area moved from the RI to an NTCRA; however, the remainder of this Section discusses the FFS and the Draft Final ROD which would normally follow the RI. It appears this sentence should be moved to follow the discussion of the Draft Final ROD. It would be helpful to add a transition (1-2 sentences) explaining why a NTCRA is being used in terms of its scope and role in the overall response to the site. "…NTCRA is recommended to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area."	The discussion of the NTCRA was removed, as it is not relevant to the progression of the CERCLA process to the ROD. Section ES.1, fourth paragraph was revised as follows: "As a result, the RI Report recommended that a focused feasibility study (FFS) be performed to recommend a limited-action closure for the site using land use controls (LUCs) and institutional controls to provide notification in the property deed that the site had been used for explosive ordnance disposal, and that all detected munitions have been cleared (TriEco-Tt, 2014). ~~As a result, an NTCRA is recommended to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area (approximately 5,250 square feet).~~"	This text remains confusing, now because the last clause of the first sentence states that the RI "concluded" an NTCRA should be performed, and the RI also "recommended" that an FFS be performed to recommend a LUC-only remedy (leaving aside the inappropriateness of an RI specifying the outcome of the FFS in advance).	ES.1 has been revised for consistency with Section 2.2.5, as follows: "The RI Report concluded that all detectable MPPEH and MDAS were removed from the site, except for what may remain underneath or within the earthen berm and established a 100-foot clearance buffer beyond any MPPEH item at the Bermed Area. The MEC Hazard Assessment calculated a hazard level of 4 for future use as open space, the lowest available for a munitions response site. Additionally, no MC were present in soil at concentrations that posed an unacceptable risk to human health or the environment (TriEco-Tt, 2014). As a result, the RI Report recommended that a focused feasibility study (FFS) be performed to evaluate the appropriateness of a limited-action closure using land use controls (LUCs) and institutional controls to provide notification in the property deed that the site had been used for explosive ordnance disposal, and that all detected munitions have been cleared (TriEco-Tt, 2014)."
2	ES.1, 5th para	ES-2, pg6	"The 2017 focused feasibility study (FS) A FFS…" It is unclear whether the opening highlighted text is a heading followed without punctuation by narrative text or an artifact of text revisions; one or the other part of which should be removed. Please revise as appropriate.	The subject text was a typographical error related to acceptance of review revisions. The subject text was revised as follows: "~~The 2017 focused feasibility study (FS)~~ In 2017, an FFS was performed…."	Agreed.	Noted.
3	ES.1, 5th para	ES-2, pg6	"The 2017 focused feasibility study (FS) A FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area." This introductory sentence should be moved to the following paragraph which details the content of the FFS.	Concur. The sentence was moved as suggested and revised as follows: "~~The 2017 focused feasibility study (FS)~~ In 2017, an FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area~~. The RI concluded that all detectable explosive hazards~~ which had been ~~removed from~~ the ~~site; however, a small area (approximately 5,250 square feet) under the berm could not be screened because of berm's soil thickness. Therefore, it is possible~~ previous RI as containing or covering potential explosives hazards ~~remain within or under the berm~~. All other previously cleared areas of the site were ~~suitable~~ categorized as no further action for ~~unrestricted use~~ munitions. The FFS evaluated three remedial alternatives against the nine NCP criteria and one another:"	It is unclear why the RTC states that the sentence was moved, given that it remains the lead-in sentence for the paragraph (although it was edited per RTC 2). Please explain. "…categorized as no further action. " The red-lined text indicates that the highlighted RTC text is newly added to the document, and it is not acceptable. See EPA comment 5.	The indicated sentence is the lead in for the paragraph discussing the FFS. It is now paragraph 6. No changes made in response to this comment. The text "categorized as no further action" was removed and the first two sentences were revised as follows: "In 2017, an FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area (i.e., explosive hazards within or underneath the earthen berm)."

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
4	ES.1, 5th para	ES-2, pg6	"The RI concluded…" The text that follows in this paragraph repeats the conclusions of the RI from the previous paragraph. Consolidate/delete the repeated text.	The repetitive text was deleted as requested, and the discussion of the FFS was consolidated in the subsequent paragraph. "As a result, the RI Report recommended that a focused feasibility study (FFS) be performed to recommend a limited-action closure using land use controls (LUCs) and institutional controls to provide notification in the property deed that the site had been used for explosive ordnance disposal, and that all detected munitions have been cleared (TriEco-Tt, 2014). ~~As a result, an NTCRA was recommended to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area,~~ ~~The 2017 focused feasibility study (FS)~~ In 2017, an FFS was performed to develop and evaluate remedial alternatives to address remaining risks at the Bermed Area~~. The RI concluded that all detectable explosive hazards~~ which had been ~~removed from~~ the ~~site; however, a small area (approximately 5,250 square feet) under the berm could not be screened because of berm's soil thickness. Therefore, it is possible~~ previous RI as containing or covering potential explosives hazards ~~remain within or under the berm~~. All other previously cleared areas of the site were ~~suitable~~ categorized as no further action for ~~unrestricted use~~ munitions."	"…categorized as no further action ". See EPA comment 3.	Please see the response to EPA comment 3.
5	ES.1, 5th para	ES-2, pg6	"All other previously cleared areas of the site were suitable for unrestricted use." Based on discussions about technical limitations of detection, this statement does not appear to be based on sufficient investigation. This text should be changed to indicate UU/UE is not supported based on work to date, and therefore some kind of response is required even if LUCs-only. Also see the last paragraph on page ES-3, which similarly states that areas around the berm itself are NFA for munitions.	The subject sentence was revised as follows: "All other previously cleared areas of the site were ~~suitable~~ categorized as no further action for ~~unrestricted use~~ munitions."	"…categorized as no further action ". See EPA comment 3.	Please see the response to EPA comment 3.
6	ES.1, 7th para	ES-3, pg7	"…low-level explosive hazards…" It is unclear what is meant by "low-level explosive hazards." Revise the language to clarify if this refers to the hazard being an explosion of low energy or if this refers to a low probability of finding any explosive hazards.	The subject sentence was revised as follows: "The 2017 Proposed Plan (PP) presented the Navy's preferred alternative of berm removal and munitions clearance to address remaining low-level risk due to the low probability of discovering any explosive hazards to human health at the Bermed Area."	"…of discovering any…" Change "discovering" to "encountering."	The following change has been made as requested: "…of ~~discovering~~ encountering any…"

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
7	ES.1, 8th para	ES-3, pg7	"…proposed to document the selected remedy…" This language is incorrect/awkward. The ROD is not proposed to document a selected remedy. The ROD selects a remedy from the alternatives presented in the Proposed Plan. Due to the ROD not yet being finalized, it may be best to revise the text to: "The Draft Final (ROD) identified berm removal and munitions detection . . . as the remedy that would be selected on issuance of the Final ROD."	The subject text was revised as follows: "~~The 2019 draft final~~ Following acceptance of the Proposed Plan, the Navy began preparing the Record of Decision (ROD) ~~proposed~~ to document ~~the selected remedy of~~ their intention to select berm removal and munitions detection, removal, and destruction ~~treatment to remove potential munitions that may be present within and underneath the berm at the Bermed Area Site, UXO 0012. The Draft~~ as the remedy that would be selected on issuance of the Final ROD ~~proposed~~(Navy, 2019)."	"…~~remedy of~~ their intention to select berm removal…" Please delete the "their intention to select".	The following change has been made as requested: "…document ~~their intention to select~~ the berm removal…"
8	ES.1, 9th para	ES-3, pg7	"The Draft Final ROD proposed soil sampling…" Again, this language is awkward. The ROD would not "propose" any action/activities such as soil sampling. It appears that this paragraph and the two paragraphs that follow are attempting to summarize the major issues that stakeholders had with the draft final ROD that led the Navy to withdraw the ROD at the Draft Final stage. If that is the case, it may be simpler to revise the text to something along the lines of: "The Navy and stakeholders were in disagreement about....Issue A (soil sampling), Issue B (soil remedial goals), Issue C (risk assessment). Therefore, this NTCRA is being conducted to..."	The subject test was revised as follows: "However, the Navy and stakeholders were in disagreement about soil sampling ~~to be performed if there was visual evidence of a release of munitions constituents (~~related to MC~~)~~ or underneath removed MPPEH discovered during berm removal ~~Through discussion with and responses to public agency comments, the Navy agreed to conduct soil sampling for metals and explosives under any discovered munitions items, regardless if there was evidence of a release.~~, soil remedial goals, and whether a risk assessment was required. Therefore, this NTCRA is being conducted to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area."	"…were in disagreement…" Please revise the highlighted text to "disagreed." Please revise the highlighted text to "remaining detectable potential."	The following change has been made as requested: "…and stakeholders ~~were in disagreement~~ disagreed about…" The sentence beginning, "Therefore this NTCRA is being conducted)…" has been moved to the end of ES.1 Paragraph 8 and revised as requested.
9	ES.1, 9th para	ES-3, pg7	"…public…" The use of "public" here and in the next paragraph is unclear. Revise the text to clarify if this refers to the general public, stakeholders, municipal or regulatory agencies.	The paragraph was rewritten and deleted in response to comment #11. The word "public" has been removed.	Agreed.	Noted.
10	ES.1, 10th para	ES-3, pg7	"…public…" See previous comment regarding the use of the word "public."	Please see the response to comment #9.	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
11	ES.1, 10th, 11th para	ES-3, pg7	This text suggests, but is not clear, that the Navy withdrew the Draft Final ROD based on a disagreement over the need to establish remedial goals to support the Navy's goal of "clean closing" the site. Please revise the text to further clarify the nature and outcome of Regulator-Navy discussions.	The last four paragraphs in the section were revised for clarification as follows: "~~The 2019 draft final~~ Following acceptance of the Proposed Plan, the Navy began preparing the Record of Decision (ROD) ~~proposed~~ to document ~~the selected remedy of~~ their intention to select berm removal and munitions detection, removal, and destruction ~~treatment to remove potential munitions that may be present within and underneath the berm at the Bermed Area Site, UXO 0012. The Draft~~ as the remedy that would be selected on issuance of the Final ROD ~~proposed~~(Navy, 2019). However, the Navy and stakeholders were in disagreement about soil sampling ~~to be performed if there was visual evidence of a release of munitions constituents (~~related to MC~~)~~ or underneath removed MPPEH discovered during berm removal ~~Through discussion with and responses to public agency comments, the Navy agreed to conduct soil sampling for metals and explosives under any discovered munitions items, regardless if there was evidence of a release.~~, soil remedial goals, and whether a risk assessment was required. Therefore, this NTCRA is being conducted to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area. ~~Other discussions with public agencies included the establishment of remedial goals to support clean closure of the site. The Navy suggested including established soil screening levels as the 2014 RI purported to have cleared the site of all munitions and therefore, no risk assessment was required. Because a risk assessment was not required for site, the Navy could not establish remedial goals.~~ ~~The Navy decided that it could not be responsive to Agency comments and withdrew the Draft Final ROD.~~	Per EPA comment on RTC 7, please delete the highlighted text. Per EPA's first comment on RTC 8, please revise the highlighted text to "disagreed." Per EPA's second comment on RTC 8, please revise the highlighted text to "remaining detectable potential."	The subject text has been revised as requested and noted in applicable comment responses.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
11 *(cont.)*	ES.1, 10th, 11th para	ES-3, pg7	This text suggests, but is not clear, that the Navy withdrew the Draft Final ROD based on a disagreement over the need to establish remedial goals to support the Navy's goal of "clean closing" the site. Please revise the text to further clarify the nature and outcome of Regulator-Navy discussions.	At the Draft Final ROD stage, the State of California requested that the Navy ~~to~~ collect soil samples for analysis of Title 22 metals and explosives under any munitions items identified as part of the remedy process. If chemical samples were to be collected, then a remedial goal for those chemicals must be set in the ROD. During the RI stage, the Navy and regulators agreed that no risk assessment was required because MC concentrations were less than the RI screening levels. To set a remedial goal, a risk assessment is necessary to develop risk-based concentrations and inform selection of site-specific remedial goals. Therefore, the Navy withdrew the Draft Final ROD in lieu of an NTCRA, whereby a removal action goal, consistent with numeric thresholds set forth in the Final RI Work Plan, could be set to allow for assessment of MC, if they were found during the NTCRA. It was agreed that following the NTCRA, barring any unforeseen discoveries of additional contamination, the Navy will reissue a Draft ROD with two alternatives, No Action and LUCs, because all detectable anomalies would be removed (by digital geophysical methods) from the site and no MC would be present in soil at concentrations exceeding the applicable human health and ecological screening levels."	"At the Draft Final ROD stage…" This paragraph of text seems placed incorrectly as a free-standing last paragraph of the section. Please integrate into the preceding revised text immediately following the sentence that begins "However, the Navy and stakeholders . . ." and before the sentence beginning "Therefore, this NTCRA is being conducted " "…(by digital geophysical methods)…" Is there a reason that the Navy opted to use this general phrase rather than reference the specific scanning technology included as part of the recommended alternative?	To address the issue regarding chronological order, the sentence beginning "Therefore, this NTCRA is being conducted" was moved to the end of the last paragraph in ES.1. Sections 4.2.3 and 4.2.4 discuss DGM and AGC. The general text "geophysical methods" was used in the ES for simplicity. The indicated ES text has been revised as follows: "…would be identified ~~removed~~ (by digital geophysical mapping [DGM] with a man-portable EM61 and/or advanced geophysical classification [AGC] with an UltraTEM operating in dynamic mode) and removed from the site,…"
12	Agreed.	Agreed.	"…the remainder of the Bermed Area has been cleared of munitions and requires No Further Action." As noted above, this statement is not supported based on work to date.	The reference to NFA for the Bermed Area was removed and text revised as follows: "The RAO applies to the earthen berm only; the ~~remainder of the Bermed Area has been cleared of munitions and requires No Further Action. Additionally, based on the 2013 RI results, no further action is required to address MC contamination in soil.~~ 2014 RI Report concluded that all known MPPEH and MDAS were removed from the remainder of the Bermed Area."	Agreed.	Noted.
13	ES.2, 2nd para	ES-3, pg7	"…no further action is required to address MC contamination in soil." This statement appears to be at odds with the regulators' concerns that the clean up goals for MC contamination needed to be established for the Bermed Area ROD.	Please see the response to comment #12.	This RTC is not responsive to the comment; the cross-referenced RTC concerns MPPEH and MDAS, whereas the comment concerns MC. A more appropriate, if not necessarily adequate response is RTC 11.	ES.2, 2nd paragraph, was revised in response to EPA Comment 15 as follows: "No remediation goals have been established for this site; however, the Navy will identify project screening levels in the Sampling and Analysis Plan (SAP). If MC are identified at concentrations exceeding the project screening levels, then a risk assessment would be performed. If the risk assessment results indicate that unacceptable risk is present, then impacted soil would be removed from the site and disposed of at a licensed facility."

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
14	ES.2, 2nd para	ES-3, pg7	"Additionally, based on the 2013 RI results, no further action is required to address MC contamination in soil." This statement appears to be at odds with the potential need to clean up MC contamination associated with MEC within the berm itself, a concern that appears to have been the basis for the Regulator's position that clean-up goals need to be established.	Please see the response to comment #12.	See comment on RTC 13.	Please see the response to comment 13.
15	ES.2, 2nd para	ES-3, pg7	"…NTCRA only includes collection of soil samples for analysis…" Explain why detected MC contamination would not be addressed by this NTRCA.	Text revised to add the following to the end of the second paragraph: "No remediation goals have been established for this site; however, the Navy will identify project screening levels in the Sampling and Analysis Plan (SAP). If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If MC contamination is detected, impacted soil will be removed from the site and disposed at a licensed facility."	"If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If MC contamination is detected, impacted soil will be removed from the site and disposed at a licensed facility." Please clarify whether these two statements mean that if soil contamination exceeds screening levels that the soil will be excavated and disposed.	Please see the response to comment 13.
16	ES.3, bullet 3	ES-4, pg8	"…MDAS and non-munitions-related scrap would be demilitarized using propane and oxygen torches and/or wet band saws to assure it no longer resembled a munition item." Explain why "demilitarization" of MDAS and scrap is necessary. Handling of similar materials for other Concord actions typically consisted only of temporary storage until recycling at an appropriate facility.	Demilitarization refers to cutting, crushing, or mangling an item so it no longer resembles a munitions item. Many recycling facilities will reject material if it resembles a munition item. The subject bullet was revised as follows: "…MPPEH/MEC items would be inspected and classified~~; items~~ as MEC or MDAS as appropriate. Items that cannot be classified ~~as MPPEH/MEC~~ due to an un-inspectable void would be treated as MEC. MEC would be destroyed via detonation (either destruction in place or consolidated shot). Munitions debris (after inspection and certification as MDAS ~~and non-munitions-related metal scrap~~) would be demilitarized using propane and oxygen torches and/or wet band saws to ~~assure~~ ensure it no longer resembled a munition item. ~~Those~~ Non-munitions related scrap would be recycled at a licensed, offsite facility. The fragments would be placed into 55-gallon drums…"	Agreed.	Noted.
17	ES.3, bullet 3	ES-4, pg8	"Soil samples would be collected for analysis of metals and explosives if a munitions related item is found or after detonation of any MPPEH/MEC items found." Explain why detected MC contamination would not be addressed by this NTRCA.	Text revised to add the following to the end of the third bullet: • "No remediation goals for MC have been established for this site; however, the Navy will identify project screening levels in the Sampling and Analysis Plan (SAP). If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If MC contamination is detected, impacted soil will be removed from the site."	See comment on RTC 15 regarding identical text.	Please see the response to comment 13.
18	ES.3, 2nd para	ES-4, pg8	"…within the scope of the NTCRA…" Please explain the meaning of the highlighted text, as it appears to represent a qualification of the RAO.	The subject text was revised as follows: "…meet the RAO ~~within the scope of the NTCRA~~ …"	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
19	ES.4, 1st para	ES-5, pg9	"…and would support future unrestricted use/unrestricted exposure for the Bermed Area." Based on discussions about technical limitations of detection, this statement does not appear to be based on sufficient investigation. This text should be changed to indicate UU/UE is not supported based on work to date, and therefore some kind of response is required even if LUCs-only.	The subject text was revised: "…and would support ~~future unrestricted use/unrestricted exposure~~ no further removal action for the Bermed Area." In addition, references to UU/UE have been removed made globally throughout the EE/CA and replaced with NFRA.	Please see Yvonne Fong 6/29/22 e-mail re. unacceptability of the Navy's use of the phrase "No Further Removal Action" and acronym/abbreviation "NFRA," and please revise as suggested therein.	The paragraph has been revised to address EPA comments and all references to NFRA and UU/UE have been removed from the EE/CA
20	ES.4, 1st para	ES-5, pg9	"…post-removal geophysical confirmation using a man-portable EM-61…" Clarify if geophysical confirmation would be conducted for the entire Bermed Area site or just the area beneath the berm.	The post-removal geophysical confirmation survey would only be performed on the footprint of the removed berm. The subject sentence was revised as follows: "…post-removal geophysical confirmation of the berm footprint using a man-portable EM-61…."	Agreed.	Noted.
21	Table ES-1, Overall Protection row, 1—No Action column	ES-7, pg11	"…eliminate or reduce MPPEH/MEC in subsurface soil." The RAO is about reducing or mitigating the risk of exposure; please revise the text to reflect this fact, e.g., "to reduce or mitigate the risk of exposure to."	The subject text was revised as follows: "Not protective because no action would be taken to ~~eliminate or~~ reduce/mitigate the risk of exposure to MPPEH/MEC in subsurface soil."	Agreed.	Noted.
22	Table ES-1, Overall Protection row, 3—Berm Removal column	ES-7, pg11	"…detectable…" This qualifying term undercuts the Navy's assertion elsewhere in the document that the removal action is sufficient to support UU/UE. Without LUCs too, therefore, it is questionable whether this alternative is protective in the long term.	In this case, all detectable MEC in the berm will be removed, but a guarantee that everything in the subsurface is removed cannot be made. No change to this row made. In addition, references to UU/UE have been removed made globally throughout the EE/CA.	The text is edited in a manner that is inconsistent with the RTC's statement that no change was made in response to EPA's comment; the term "detectable" was incorrectly deleted. The point of the comment wasn't that this term should be deleted, but rather that the fact that there are technological limits on the ability to detect munitions means this alternative must be followed by, at minimum, a LUC remedy.	Alternative 3 was split into Alternative 3 (DGM Survey) and Alternative 4 (AGC Survey). Because this is an interim remedy, no LUCs will be implemented. LUCs may be considered during development of the final remedy and documented in the Final ROD.
23	Table ES-1, Overall Protection row, 3—Berm Removal column	ES-7, pg11	"…mitigating …" Similar to the preceding comment, this term underscores that the risk is not "eliminated," just "mitigated."	The subject text was revised as follows: "…because all ~~detectable~~ MPPEH/MEC remaining in the berm soil and subsurface soil would be removed from the site thereby reducing/ mitigating the potential exposure to ~~incidental~~ munitions-related items…." In addition, this revision was made globally throughout the EE/CA.	Agreed.	Noted. Detectable was added back in and retained in the document per comment #197 from Eric Esler.
24	Table ES-1, Compliance row, 2—LUCs column	ES-7, pg11	"Complies with ARARs by mitigating the soil pathway." Please revise to something like: "Complies with ARARs for mitigation of the soil disturbance exposure pathway through land use controls."	The subject text was revised as follows: "Complies with some ARARs ~~by mitigating the soil pathway~~."	The RTC is not responsive in that it does not capture the point of the comment.	Text was revised as follows: "Complies with ~~some~~ ARARs for mitigation of the soil exposure pathway by preventing soil disturbance through LUCs."
25	Table ES-1, Compliance row, 3—Berm Removal column	ES-7, pg11	"…designed to comply with the action-specific ARARs." The question is not whether the alternative is "designed to comply" with ARARs, but whether it does comply (with all ARARs). Revise the text to "Complies with..."	The subject text was revised as follows: "Removal action ~~is designed to comply~~ complies with ~~the action-specific~~ all ARARs."	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
26	Table ES-1, Long-Term row, 1—No Action column	ES-7, pg11	"…would…" Change "would" to "may" if there are only "potential incidental" munitions-related items.	The subject text was revised as follows: "…because MPPEH/MEC ~~would~~ may remain…."	Agreed.	Noted.
27	Table ES-1, Long-Term row, 2—LUCs column	ES-7, pg11	"Does not provide long-term effectiveness…" This statement is incorrect; LUCs often are relied on for both short- and long-term effectiveness (and protectiveness). Indeed, the point of ICs that "run with the land" is to ensure long-term effectiveness (and protectiveness). That said, it may well be true that LUCs are not as effective in the long-term as removal of all potential hazards would be required. Please revise the text in this row/column to reflect that LUCs are effective in the long-term, though may not be as effective in the long-term due to issues with maintenance, etc.	Concur. The subject text in 2—LUCs column has been deleted in response to comment. Additionally, the following text was added in the column: "Long-term effectiveness would rely on adherence to the administrative and physical controls."	Delete this statement that LUCs are "not a permanent solution" given that they may remain in place in perpetuity. ***Note this text should also be revised in the Runway Debris Area EE/CA.	Text was removed as requested.
28	Table ES-1, Long-Term row, 3—Berm Removal column	ES-7, pg11	"…detectable MPPEH/MEC would be removed from the berm soil thereby mitigating…" Ditto comments on terms "detectable" and "mitigating" in this column, 1st row.	Please see the responses to comment #23.	Please see EPA comments on RTCs 23 ("detectable") and 24 ("mitigating").	Please see the responses to comments #22 and 23.
29	Table ES-1, Short-Term row, 2—LUCs column	ES-7, pg11	"Would not achieve the RAO of reducing or mitigating MPPEH/MEC in site soil." This is not an accurate statement of the RAO; the RAO isn't the reduction or mitigation of MPPEH/MEC in soil, but instead the reduction or mitigation of "an uncontrolled encounter with potential incidental munitions-related items and explosive hazards by unqualified/untrained personnel during ground disturbing activities." Please revise the highlighted text to accurately capture the RAO. Also, the statement is not accurate as LUCs that prevent ground disturbing activity and include engineering controls such as controlled access, would seem to accomplish the RAO.	The subject text was revised as follows: "Would not achieve the RAO for protection of ~~reducing or mitigating MPPEH/MEC in site soil Less than 2 years to~~ the environment. Would achieve the RAO of protecting human health from exposure to ~~MPPEH/MEC by developing a LUC Remedial Design (to include implementation, inspection, and maintenance of physical access restrictions to prevent exposure to MPPEH/MEC in subsurface soil and other administrative controls) and by installing the physical access restrictions~~ (munitions-related items or explosive hazards (i.e., MPPEH/MEC). No short-term increased risks because munitions-related items or explosive hazards (i.e., MPPEH/MEC) in soil would not be disturbed during implementation of this alternative."	Agreed.	Noted.
30	Table ES-1, Technical Feasibility row, 2—LUCs column	ES-8, pg12	"N/A…" This text is inconsistent with the description on page 5-1 and with the definition of technical feasibility.	The subject text was as follows: "~~N/A, does not require any removal or remedial technology for implementation~~ No technical feasibility concerns."	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
31	Table ES-2, Protection, Compliance, Long-Term, Short-Term, Achieve RAO, and Reduction rows, Alternative 1 column	ES-9, pg13	"Low" The entries highlighted in the column for Alternative 1 that specify "Low" should be changed to "None," or, e.g., with regard to "Protection of Human Health and the Environment," "Not protective," rather than "N/A," consistent with Highlight 6-25 in the ROD Guidance (the ROD Guidance is relevant to questions of how to analyze an alternative under the removal action evaluation criteria because the criteria are identical in most instances). Also, the characterization in the "Comparative Analysis" should match the characterization in the "Individual Analysis."	The subject text in the Alternative 1 column was revised as requested. Text in Section 4.4 revised to match Table ES-2.	Agreed.	Noted.
32	Table ES-2, Protection row, Alternative 2 column	ES-9, pg13	"High" Compared to the Runway Debris Area EE/CA, explain why the LUCs Alternative is rated as "High" instead of "Moderate."	The Alternative 2 column was revised to "Moderate." As long-term effectiveness relies on adherence to the administrative and physical controls.	Agreed.	Noted.
33	Table ES-2, Technical Feasibility row, Alternative 1 column	ES-9, pg13	"High" This characterization is inconsistent with the characterization in the "Individual Analysis," as is the entry in the row below for "Administrative Feasibility." Although the entry for "Availability of Services . . ." is the same as in the "Individual Analysis," this should follow the example of Highlight 6-25 "None required." See ROD Guidance, Highlight 6-25.	The entries in the Alternative 1 column that specify "High" were revised to "None required."	Agreed.	Noted.
34	Table ES-2, Technical Feasibility row, Alternative 2 column	ES-9, pg13	"High" This entry is inconsistent with the entry in the "Individual Analysis" which states "N/A," but this is the more accurate characterization.	Table ES-1, Administrative Feasibility, in the Alternative 2 column was revised as follows: "Administratively feasible; however, LUCs have the potential fail over time when maintenance/inspection activities or other administrative procedures do not occur or are compromised." No change was made to Table ES-2 in response to this comment.	It isn't clear why this RTC addresses "administrative feasibility," given that the comment concerns "technical feasibility," but the referenced revision to Table ES-1 is acceptable.	References to "N/A" or "not applicable" and technical feasibility were not found in the EE/CA. No changes were made to Table ES-2 based on this comment. Table ES-1 states "No technical feasibility concerns."
35	1.0, 3rd para	1-1, pg21	"The RI Report concluded that all known MPPEH and material documented as safe (MDAS) were removed from Bermed Area, except for what may remain underneath or within the earthen berm." This text should acknowledge the residual munitions risk associated with the technological limits of detection technology.	The subject text was revised as follows: "The RI Report concluded that all known MPPEH and material documented as safe (MDAS), which were detected by digital geophysical methods, …"	The RTC does not respond to the comment in that it does not reference that there is a risk of residual munitions even after scanning with digital geophysical methods. To address this issue, please make the following additional revisions: 1) replace the term "known" with the term "detectable" in the sentence modified in this RTC; and 2) in the last sentence on p. 1-1, revise the phrase "remaining potential" to "potential remaining detectable."	The subject text has been revised as requested.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
36	1.0, 3rd para	1-1, pg21	"As a result, an NTCRA is recommended to remove MEC, MPPEH, and scrap metal in the berm soil to remove the remaining potential explosives hazards posed to humans and the environment at the Bermed Area." Although the Navy may choose to limit the NTCRA to the identification and removal of MPPEH and MDAS in the berm, it seems advisable that the Navy use the opportunity to resolve questions about MC contamination as part of the NTCRA as well.	The subject paragraph, last sentence, was revised as follows: "~~This EE/CA was prepared by~~ Soil samples will be collected for analysis of metals and explosives under any discovered munitions items, regardless of whether there is evidence of a release, and if MPPEH/MEC are explosively treated (i.e., post-demolition shot)."	Agreed.	Noted.
37	1.1, 1st para	1-2, pg22	"…and associated costs…" Delete "and associated costs" as "cost of the removal action" is already stated in this sentence.	The text was revised as requested. "…alternatives ~~and associated costs~~ that may satisfy the RAOs…"	Agreed.	Noted.
38	1.1, 1st para	1-2, pg22	"…during…" Recommend changing to "in preparing."	The text was revised as requested. "Information obtained ~~during~~ in preparing previous investigations…"	Agreed.	Noted.
39	1.1, 2nd para	1-2, pg22	"…is completed…" Recommend changing to "was prepared."	The subject text has been revised as follows: "…the EE/CA ~~is completed~~ was prepared to meet the environmental review requirements	Agreed.	Noted.
40	1.2, 2nd para	1-2, pg22	"Groundwater and soil…" Add "soil gas" to the media impacted.	The subject text has been revised as follows: "Groundwater, soil, and soil gas at the former NAVWPNSTA…"	Agreed.	Noted.
41	1.2, 2nd para	1-2, pg22	"…organic and inorganic contaminants…" Revise the text to address munitions from past activities.	Section 1.2, second paragraph, was revised as follows: "…contaminants resulting from past site activities. Munitions items have been found on the surface and subsurface at the former NAVWPNSTA Seal Beach Det Concord resulting from past site activities."	Agreed.	Noted.
42	1.2, 2nd para	1-2, pg22	"…Installation restoration (IR) Program…" Revise the text to address the MMRP.	The subject text has been revised as follows: "…the Installation Restoration (IR) Program and MRP at the former NAVWPNSTA Seal Beach Det Concord since the early ~~2000s~~1990s and early 2000s, respectively."	Agreed.	Noted.
43	1.2, 3rd para	1-2, pg22	"…in conjunction with…" Suggest changing to "under the oversight of."	The text was revised as requested. "…being performed ~~in conjunction with~~ under the oversight of EPA Region 9…"	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
44	1.2, 3rd para	1-2, pg22	"Under this agreement…" EPA's authority to co-select remedies is referenced in the FFA, but its basis is statutory, CERCLA 120(e)(4)(A): ". . . selection of a remedial action by the head of the relevant department, agency, or instrumentality and the Administrator or, if unable to reach agreement on selection of a remedial action, selection by the Administrator." Please revise the text to note the statutory basis for EPA's authority to co-select the remedy.	The text "Under this agreement, the Navy and EPA co-select the remedies, and then the Water Board and DTSC concur with the remedies" has been deleted since the Navy is implementing a removal action, not a remedial action.	Agreed.	Noted.
45	1.2, 3rd para	1-2, pg22	"…co-select the remedies, and then the Water Board and DTSC concur with the remedies." It is important to note EPA's authority in relation to remedy selection, but as the Navy has opted to proceed by an NTCRA rather than a ROD, it also is important to note that EPA's authority is different, and much more limited, in relation to removal actions.	Please see the response to comment #44.	Agreed.	Noted.
46	2.1.3.2, 2nd para	2-3, pg27	"Surface elevations range from roughly 25 feet to more than 800 feet above mean sea level in the hills along the northeast boundary of the Inland Area (TriEco-Tt, 2014)." This sentence essentially is a duplicate of the 2nd sentence in the preceding paragraph, but appears to be more appropriate in the preceding paragraph as it is not specific to the Bermed Area. Please review and revise the text as appropriate.	The text was revised as requested. "The Bermed Area is located within a sloped valley with rising topography in all directions but the west. ~~Surface elevations range from roughly 25 feet to more than 800 feet above mean sea level in the hills along the northeast boundary of the Inland Area (TriEco-Tt, 2014).~~ The Bermed Area is accessed via one dirt road from the west leading to the earthen berm that previously surrounded a salt lick for cattle. The Bermed Area is not visible from outside of the base because of the surrounding hills (TriEco-Tt, 2014~~7~~)." All references in this section were revised to "(TriEco-Tt, 2014)" to indicate the text is consistent with the RI Report.	Agreed.	Noted.
47	2.1.3.4	2-4, pg28	"…Mount Diablo/Seal Creek watershed…" Please reference the watershed boundaries.	The subject text was revised as follows: "…watershed, which ~~encompasses about 36 square miles.~~is bounded to the south by the northern peak of Mount Diablo, to the north by Suisun Bay, to the west by the city of Concord, and to the east by the Willow Creek and Kirker Creek Watersheds. Surface…"	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
48	2.1.4, 1st para	2-5, pg29	"Current access to Bermed Area is through a secured gate operated by the East Bay Regional Parks District (Navy, 2019)." Please explain the basis on which the EBRPD has operational control of the property, and any restrictions on use to which it has agreed.	Section 2.1.4, first paragraph was revised as follows: "The Navy currently leases out a portion of the Inland Area, including the Bermed Area, as grazing land for cattle. Cattle graze in the Inland Area of NAVWPNSTA Seal Beach Det Concord year-round and rotate among various areas, depending on the availability and condition of vegetation. ~~Current access~~ Access to the Bermed Area is ~~through a secured~~ via is the Bailey Road gate, which is owned, operated and guarded by ~~the East Bay Regional Parks District~~ EBRPD. The Bermed Area parcel itself is precluded from the public by this gate, but also precluded from EBRPD by agreement with the Navy and enforced by the Navy caretaker (Navy, 2019)."	"Access to the Bermed Area is ~~through a secured~~ via is the Bailey Road gate, which is owned, operated and guarded by ~~the East Bay Regional Parks District~~ EBRPD. The Bermed Area parcel itself is precluded from the public by this gate, but also precluded from EBRPD by agreement with the Navy and enforced by the Navy caretaker (Navy, 2019)." Please further revise the highlighted text: 1) by deleting the extra term "is" after the term "via;" and 2) replacing the term "precluded" as follows: "Public access to the Bermed Area is prevented by this gate, and access by EBRPD pursuant to an agreement with the Navy that is enforced by the Navy caretaker."	Text revised as follows: "Public access to the Bermed Area is prevented by this gate, and access by EBRPD is pursuant to an agreement with the Navy that is enforced by the Navy caretaker"
49	2.1.4, 2nd para	2-5, pg29	"…designated as opening of lands…" Explain what is meant by this phrase.	Section 2.1.4, second paragraph was revised as follows for clarity: "…designated as ~~opening of lands~~ open space for the purpose…"	Agreed.	Noted.
50	2.2	2-5, pg29	"…PA, SI, and RI." Add the FFS to this list of studies.	The subject text was revised as requested.: "…PA, SI, RI, and ~~RI~~FFS."	Agreed.	Noted.
51	2.2.4, 2nd para	2-6, pg30	"…three of the five trenches contained MDAS." Clarify if the three trenches that contained MDAS were the three trenches that were located in the earthen berm.	The text was incorrect as written and has been revised as follows: "Three of the five trenches were ~~in~~ installed adjacent to, or near the ~~earthen~~ berm."	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
52	2.2.5, 4th para	2-8, pg32	"Based on the RI results, the Navy concluded an NTCRA should be performed to address potential MPPEH/MEC contamination remaining in the earthen berm…" It's unclear whether a prior NTCRA occurred or if the current proposed NTCRA is being referenced here. Revise to state whether the recommended NTCRA was performed. Also, clarify what response action it is referring to given that it initiated preparation of a ROD subsequent to the RI, and the relationship of the recommended NTCRA to the ROD preparation, including clarifying how the Navy went from recommending an NTCRA to preparation of a Proposed Plan.	Section 2.2.5, was revised to more accurately reflect the conclusions and recommendations of the RI Report as follows: "The RI Report concluded that all known MPPEH and MDAS ~~was~~ were removed from the site, except for what may remain underneath or within the earthen berm, and established a 100-foot clearance buffer beyond any MPPEH item at the Bermed Area. The MEC HA calculated a hazard level of 4 for future use as open space, the lowest available for a munitions response site. Additionally, no MC were present in soil at concentrations that posed an unacceptable risk to human health or the environment. ~~Based on the RI results, the Navy concluded an NTCRA should be performed to address potential MPPEH/MEC contamination remaining in the earthen berm~~ (TriEco-Tt, 201~~4~~7). The RI Report recommended a limited-action closure for the site using land use controls (LUCs) and institutional controls (ICs) to provide notification in the property deed that the site had been used for EOD, and that all detected munitions had been cleared. The RI Report further recommended that the limited-action closure should be documented and evaluated in an FFS Report (TriEco-Tt, 2014). The recommended removal action has not occurred." Discussion of Draft ROD preparation and withdrawal are included in Section 2.2.8 and Comment #58.	"…known …" Please replace with "detectable." "The recommended removal action has not occurred." The newly added text generally is acceptable, but the reference to a "recommended removal action" is out of place, because there is no prior reference to the RI recommending a removal action (the text references a "limited-action closure . . . using land use controls and institutional controls." Also, it is unclear why the Navy references both LUCs and ICs, given that the FedFac world, LUCs encompass both.	Sentence was revised to read: "The RI Report concluded that all ~~known~~ detectable MPPEH and MDAS were removed…" The sentence regarding the recommended removal action has been removed.
53	2.2.6, 1st para	2-8, pg32	"All other previously cleared areas of the site were suitable for unrestricted use." Based on discussions about technical limitations of detection, this statement does not appear to be based on sufficient investigation. This text should be changed to indicate UU/UE is not supported based on work to date, and therefore some kind of response is required even if LUCs-only.	Comment noted. All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA.	Please add a clause to the sentence beginning "Therefore" (before the deleted sentence referenced in the RTC), that references the potential for residual munitions in other areas of the Bermed Area.	The text was revised as follows: "Therefore, it is possible that detectable explosive hazards remain within or under the berm. Additionally, there remains a non-zero potential for the presence of munitions at the site beyond the limits of detection of current technologies."
54	2.2.6, 2nd para	2-8, pg32	"The FFS evaluated three remedial alternatives…" The Navy's approach assumes that Alternative 3 will result in UU/UE, and there is no provision for LUCs in combination with the detection, removal and treatment effort. This is the Navy's prerogative, but it is an interim action, and not sufficient to support UU/UE.	Comment noted. All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA.	Agreed.	Noted.
55	2.2.8, 1st para	2-9, pg33	"…selected…" As the Draft Final was never finalized, and the remedy thus never selected, please revise the text to state something along the lines of: ". . . documented the Navy's intention to select as the remedy berm removal . . . ."	Please see the response to comment #58. No change was made in response to this comment because the subject text was removed.	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
56	2.2.8, 2nd para	2-9, pg33	"…proposed…" Please change to "provided for."	Please see the response to comment #58. No change was made in response to this comment because the subject text was removed.	Agreed.	Noted.
57	2.2.8, 2nd para	2-9, pg33	"…with and responses to public…" Please revise to "with, and responses to,".	Please see the response to comment #58. No change was made in response to this comment because the subject text was removed.	Agreed.	Noted.
58	2.2.8, 4th para	2-9, pg33	"…the Navy decided that it could not be responsive to Agency comments and withdrew the Draft Final ROD." See similar language/comment in Executive Summary Section ES.1.	Section 2.2.8 has been completely revised as follows for clarity: "Following acceptance of the Proposed Plan, the Navy began preparing the Record of Decision (ROD) to document their intention to select berm removal as the remedy. However, at the Draft Final ROD stage, the State of California requested that the Navy collect soil samples for analysis of metals and explosives under any identified munitions items as part of the remedy process. If samples were collected for chemical analysis, then remedial goals for those chemicals must be set in the ROD. During the RI stage, the Navy and regulators agreed that no risk assessment was required because MC concentrations were less than the RI screening levels. To set a remedial goal, a risk assessment is necessary to develop risk-based concentrations and inform selection of site-specific remedial goals. Therefore, the Navy withdrew the Draft Final ROD in lieu of an NTCRA, whereby a removal action goal, consistent with numeric thresholds set forth in the Final RI Work Plan, could be set to allow for assessment of MC, if they were found during the NTCRA. It was agreed that following the NTCRA, barring any unforeseen discoveries of additional contamination, the Navy will reissue a Draft ROD with two alternatives, No Action and LUCs, because all detectable anomalies would be removed (by digital geophysical; methods) from the site and no MC would be present in soil at concentrations exceeding the applicable human health and ecological screening levels." Please also see the response to comment #11.	"…their intention to select…" See EPA comment on RTC 7. "…the remedy." Please insert the term "selected" before the term "remedy." See EPA comments on RTC 11.	Please see the response to comment #7. Sentence was revised as follows: "… to document their intention ~~to select~~ for berm removal as the selected remedy." Please see the response to comment #11.
59	2.3, 2nd para	2-10, pg34	"The score of 500 indicated that, with implementation of Alternative 3 at the Bermed Area, there would be a low potential for explosive hazard conditions under a future open space use scenario (i.e., no restrictions)." A "low potential for explosive hazard" is not equivalent to UU/UE.	All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA. No change was made to Section 2.3 in response to this comment.	The highlighted text appears to be inaccurate as the red-lined text indicates that the parenthetical "(i.e., no restrictions)" was deleted.	The text was previously revised to remove "(i.e., no restrictions)" because it would imply a UU/UE scenario. The sentence currently states: "The score of 500 indicated that, with implementation of Alternative 3 at the Bermed Area, there would be a low potential for explosive hazard condition sunder a future open space land use scenario)."

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
60	2.4, 1st para	2-10, pg34	"Per the RI Report (TriEco-Tt, 2014), MC do not pose an unacceptable risk to human health and the environment. As a result, soil is not considered to be chemically affected." Please clarify the point of this text; is it that the Navy concluded there is no MC contamination of concern in the Bermed Area, or that because the Navy concluded there is no MC contamination of concern in the Bermed Area, the Navy further assumes (concludes?) that there is not such contamination in the berm itself.	Section 2.4, first paragraph, was revised as follows, to be consistent with the RI findings: "This section describes the conceptual site model (CSM), including source, nature, and extent of MPPEH/MEC contamination at the earthen berm within the Bermed Area based on information from previous investigations and the MEC HA. The CSM is a comprehensive representation of the earthen berm within the Bermed Area that documents the potential for exposure (under current and future land uses) to munitions-related items in berm soil based on the source of contamination, release and transport mechanisms, exposure pathways, and anticipated site receptors. The extent of contamination is discussed relative to the findings of previous investigations. Per the RI Report (TriEco-Tt, 2014), MC in soil do not pose an unacceptable risk to human health and the environment. ~~As a result, soil is not considered to be chemically affected.~~ Also, because no soil contamination was discovered, a release and impacts to groundwater are unlikely. Thus, MC in environmental media are not included in the current CSM. Figure 2-2 provides a graphical representation of the current CSM as it relates to MPPEH/MEC." The 2nd paragraph was deleted and replaced with the following text: "Although no MC contamination is expected, soil sampling will be done underneath any discovered munitions items, regardless of whether there was evidence of a release, and at post-demolition shot locations where detonation in place or consolidated MPPEH/MEC detonation occurs, if applicable. If MC are identified at concentrations exceeding project screening levels established in the SAP, then the need for a risk assessment will be evaluated."	Agreed.	Noted.
61	2.4.1	2-10, pg34	Although the language of the text, "detected munitions," indicates that detection technology is not able to detect all munitions in an area, this paragraph should acknowledge this fact more explicitly.	Section 2.4.1 was revised as follows: "…the thickness of soil comprising the berm prevented effective screening of the area under the berm (i.e., detection methods cannot confirm the presence or absence of MPPEH/MEC under the berm until the berm is removed). Therefore, it is possible that undetected MPPEH/MEC may ~~remain~~ be present in soil within or under the berm.	EPA appreciates the revision made by the Navy in response to EPA's comment, but the point of the comment concerned clarifying that residual munitions also could remain in the broader Bermed Area. Please add this point to the first sentence.	The text was revised as follows: "Therefore, it is possible that detectable MPPEH/MEC may be present in soil within or under the berm. Additionally, there remains a non-zero potential for the presence of munitions at the site beyond the limits of detection of current technologies."

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
62	2.4.2	2-10, pg34	"There is no frost line in Concord, California, and there is no potential for frost heave to occur…" Clarify whether this assessment takes into account potential climate change impacts.	Current climate change models predict an increase in temperature, not a decrease, and it is unlikely that Concord will ever have a frost line as climate change progresses. The following sentence has been added to the text. "The elevation of the site is at approximately 800 feet above sea level and is unlikely to be affected by future sea level rise, currently estimated at one foot by 2050. MEC could be released from berm soil if disturbed during intrusive activities."	EPA appreciates the Navy's response, but the point of the comment related to the impact of climate change on the potential for "frost heave." This could be addressed by revising the "frost heave" sentence as follows: "California, there is no current . . . the surface, and climate change models do not predict temperature changes for the Concord area that would result in frost heave."	Section 2.4.2 was revised as follows: "Munition-related items may be present within and beneath the earthen berm within the Bermed Area. MEC could be released from berm soil if disturbed during intrusive activities. Natural erosion mechanisms, such as stormwater runoff or frost heave, can also potentially bring buried MEC or MPPEH to the surface; however, these mechanisms are unlikely to occur at the Bermed Area based on current and anticipated future site conditions. Specifically, the topography around the berm is relatively flat and does not generally promote runoff and there is no potential for frost heave to occur at the Bermed Area because there is currently no frost line in Concord, California, and climate change models do not predict temperature changes for the Concord area that would result in frost heave."
63	2.4.3, 1st para	2-11, pg35	"The following exposure pathways to human receptors are potentially compete: access to the site." Please clarify how this statement, and the last sentence in the next paragraph (highlighted), relates to the earlier statement that access to the Bermed Area is controlled by the EBRPD.	Section 2.4.3 was revised to include the following paragraph: "The Navy restricts access to the Inland Area and the Bermed Area through a gate off the Port Chicago Highway, and access to the Bermed Area is further restricted by the secured gate on Bailey Road that is managed by the City of Concord (Navy, 2019)."	This text is inconsistent with the text in Section 2.1.4 referenced in RTC 48. Please compare and revise the text in either or both sections as appropriate.	Section 2.4.3 was revised as follows: "Based on the current and anticipated land use (see Section 2.1.4), the primary human receptors are future and current commercial/industrial workers (i.e., ranchers and Navy personnel), future and current construction workers, and future recreational users. Potentially complete exposure pathways were identified for these receptors from contact with MEC/MPPEH in soil. Although the Navy currently restricts public access to the Inland Area (including the Bermed Area), a portion of the site is leased as cattle grazing land and future use is intended as open recreational space."
64	2.4.4, 1st para	2-11, pg35	"In addition, all of the munitions related debris has been found on the surface or in the shallow subsurface (less than 1 foot depth)." To avoid possible confusion, please include a reference to the object found approximately 5' below the surface of the berm that was at, or about, at the level of the ground surface before the berm was constructed.	The following sentence was added to the end of the first paragraph of Section 2.4.4: "One MDAS item was found at 5 feet bgs in the berm during the RI in 2014. That depth correlates to the approximate ground surface prior to the creation of the berm (TriEco-Tt, 2014)."	Agreed.	Noted.
65	3.1, 2nd para	3-1, pg36	"The RAO for this NTCRA may be altered…" Start a new paragraph with this text.	The subject text was revised such that the RAO is now a bullet, with a new paragraph following the bullet as requested.	Agreed.	Noted.
66	3.1, 2nd para	3-1, pg36	"As such, the Action Memorandum will define the final RAO to reflect any alterations and refinements." Please revise this text along the lines of: "Any alterations and refinements to the preliminary RAO will be reflected in the final RAO established in the Action Memorandum.	Section 3.1 was revised as follows: "~~As such, the Action Memorandum will define the final RAO to reflect any~~ Any alterations and refinements to the preliminary RAO will be reflected in the final RAO established in the Action Memorandum."	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
67	3.2, bullet 3-6	3-1, pg36	Clarify how the activities in these last three bullets differ from the activities described in the second bullet above.	The third bullet was removed, and the first and second bullets were revised as follows: • "~~Bermed Removal~~ • ~~Munitions detection, removal, and treatment~~ • Detector-aided surface clearance of berm soil in 6-inch lifts • Removal of cleared berm soil in 6-inch soil lifts"	Agreed.	Noted.
68	3.2, 2nd para	3-1, pg36	"MC results will only be used to confirm no contamination remains in soil post-demolition or following removal of MPPEH/MEC items. Per the RI Report (TriEco-Tt, 2014), MC in soil do not pose unacceptable risks to human health and the environment." Explain the decisions and actions that would follow if the soil sampling indicates that contamination is present following the removal of MPPEH/MEC items.	Text revised to add this sentence: "No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If MC contamination is detected, impacted soil will be removed from the site and disposed of at a licensed facility."	Agreed.	Noted.
69	3.2, 2nd para	3-1, pg36	"Per the RI Report (TriEco-Tt, 2014), MC in soil do not pose unacceptable risks to human health and the environment." However likely it may be that MC in berm soil does not pose an unacceptable risk to human health or the environment, the highlighted sentence is not acceptable because the investigation of the berm has not yet been completed. Please revise the text to reflect this fact; e.g., "Per the RI Report (. . .) for the Bermed Area, MC in soil likely does not pose unacceptable risks . . . ."	The subject sentence was revised as suggested: "Per the RI Report (TriEco-Tt, 2014), for the Bermed Area, MC in soil ~~do~~ likely does not pose unacceptable risks to human health and the environment."	Agreed.	Noted.
70	3.2, 3rd para	3-2, pg37	"Because the remainder of the site (all non-berm areas) are suitable for unlimited use/unrestricted exposure (UU/UE), this EE/CA considered future UU/UE for explosive hazards to support the potential future clean closure of the Bermed Area." Based on discussions about technical limitations of detection, this statement does not appear to be based on sufficient investigation. This text should be changed to indicate UU/UE is not supported based on work to date, and therefore some kind of response is required even if LUCs-only. Also see the last paragraph on page ES-3, which similarly states that areas around the berm itself are NFA for munitions.	Section 3.2, third paragraph was revised as follows, to remove reference to UU/UE for the site: "~~Because the remainder of the site (all non-berm areas) are suitable for unlimited use/unrestricted exposure (UU/UE), this EE/CA considered future UU/UE for explosive hazards to support the potential future clean closure of the Bermed Area.~~ The planned future land use of the site incorporates a goal of NFRA."	Please see EPA's comment on RTC 19, and revise the text per the comment.	Please see the response to comment #19. The text was revised as follows: "Because the planned future land use of the site is open space, this EE/CA incorporates a goal to reduce/mitigate explosive hazards at the Bermed Area pending a final remedy determination in a future decision document."
71	3.3, 1st para	3-2, pg37	"…RDA…" This acronym, which may stand for "Rocket Disposal Area," appears to be an artifact of a cut and paste editing process. Please revise the text to correct the reference.	The subject text was revised as requested, and the EE/CA was searched for other uses of "RDA," which were removed or revised to "Bermed Area" as appropriate.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
72	3.3, Table, Dates column	3-2, pg37	"Dates" Update the schedule as necessary.	The schedule dates were updated as requested.	The dates need to be further revised to reflect the current status of the EE/CA.	The dates in the Section 3.3. table have been updated.
73	3.4, 1st para	3-2, pg37	"…regulatory requirements, standards, and guidance…" Please revise this text to reflect the definition of ARARs provided in the text that follows.	Section 3.4, first paragraph was revised as follows: "~~Substantive regulatory~~ ARARs include site-specific standards, requirements, ~~standards, and guidance are referred to as ARARs.~~ criteria, or limitations established under federal environmental law or any more stringent standards, requirements, criteria, or limitations promulgated in accordance with a state environmental statute. The identification of ARARs ~~depend on the detected~~ is related to contaminants, specific site characteristics, and the particular removal action proposed for the site. The NCP (Title 40 CFR Part 300) states, "Removal actions... shall to the extent practicable considering the exigencies of the situation, attain ARARs under federal…"	EPA appreciates the Navy revising the text, but it the revision only captures the "A" of ARARS, not the "RARS." Please further revise to reference full scope of ARARs based on the quoted text that follows.	The indicated text applies to both "applicable" and "relevant and appropriate" requirements. The second and third paragraphs provide further clarifying information detailing the differences between the two types of requirements. The text, as written, is consistent with EPA definitions (e.g., EPA/540/G-89/006, Section 1.2.2) and no changes were made.
74	3.4, 1st para	3-2, pg37	"ARARs depend on the detected…" Please revise the highlighted text along the lines of "The identification of ARARs is related to."	Please see response to comment #73	Agreed.	Noted.
75	3.4, 5th para	3-3, pg38	"Three types of ARARs: chemical-, location-, and action-specific have been identified and are summarized below." Please revise to: "The three types of ARARs--chemical-, location-, and action-specific--are described below."	The subject text was revised as follows: "~~Three~~ The three types of ARARs~~:~~ —chemical-, location-, and action-specific ~~have been identified and~~ —are ~~summarized~~ described below."	Agreed.	Noted.
76	3.4, Chemical-Specific ARARs bullet	3-3, pg38	"…of…" Change to "or."	Text revised as suggested. "…acceptable amount ~~of~~ or concentration of a chemical…"	Agreed.	Noted.
77	3.4, Chemical-Specific ARARs bullet	3-3, pg38	"…may be found in or discharged to the ambient environment." Please revise to: "may remain in or be discharged to the environment"	The subject text was revised as requested. Text changed as suggested: "…chemical that may ~~be found~~ remain in or be discharged to the ~~ambient~~ environment."	Agreed.	Noted.
78	3.4, Location-Specific ARARs bullet	3-3, pg38	"…activities that can be performed based because they occur in special locations." Please revise to something like: "Location-Specific ARARs restrict the concentrations of hazardous substances that may remain at a site or the types of response activities that may be performed at a site solely due to its location (e.g., presence of wetlands, habitat for sensitive species, floodplains)."	The subject bullet was revised as follows: • "**Location-Specific ARARs** ~~are restrictions placed~~ restrict on the concentrations of hazardous substances that may remain at a site or the types of activities that ~~can~~ may be performed ~~based because they occur in special locations. Location-specific ARARs relate to the geographical or physical position of the~~ site (i. at a site solely due to its location (e.g, presence of wetlands, habitat for sensitive species, floodplains~~, etc.~~)."	Agreed.	Noted.
79	3.4, Location-Specific ARARs bullet	3-3, pg38	"…based…" Delete "based."	Please see the response to comment #78.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
80	3.4, Action-Specific ARARs bullet	3-3, pg38	Please revise to something like: "Action-Specific ARARs are requirements for, or limitations on, actions taken to clean up hazardous substances or pollutants. They are identified in relation to the particular activities that are selected as part of the remedy, and address the design, construction and operation of the remedy."	The subject bullet was revised as follows: • "**Action-Specific ARARs** are ~~activity-based~~ requirements for, or limitations on actions taken ~~with respect~~ to clean up hazardous substances or pollutants. ~~These requirements~~ They are ~~triggered by~~ identified in relation to the particular activities that are selected ~~to accomplish a~~ as part of the remedy~~. Thus, action-specific requirements in themselves do not determine the removal alternative; rather, they indicate how a selected alternative must be achieved through~~ and address the design, construction, and operation, ~~or management of~~ the remedy."	Agreed.	Noted.
81	3.4, 7th para	3-3, pg38	"…specific features of the site location…" Please revise to: "the site location and specific features of the site"	The subject text was revised as requested. "…about specific chemicals at the site, the site location and specific features of the site ~~location~~ and actions that are being considered …"	Agreed.	Noted.
82	3.4, 7th para	3-3, pg38	"…actions that are being considered as removal actions." Please revise to: "actions that are being considered as part of the response action."	The subject text was revised as requested. "…actions that are being considered as ~~removal~~ ~~actions~~ part of the response action."	Agreed.	Noted.
83	3.4, 7th para	3-3, pg38	"…regulations, requirements, and…" Please revise per the comment on the first sentence of section 3.4.	Section 3.4, last paragraph, was revised as follows: "Appendix A identifies and evaluates ~~potential federal and State of California ARARs from the universe of regulations, requirements~~, on a site-specific basis, information about specific chemicals at the site, the site location and ~~guidance~~ specific features of the site, and sets forth the Navy determinations regarding those potential ARARs for each response ~~action~~ alternative retained for detailed analysis in this EE/CA. In addition, nonpromulgated advisories or guidance issued by federal or state governments, while not legally binding and therefore not ARARs, may be useful and are evaluated in Appendix A as potential "to be considered" requirements that may complement but not override ARARs."	"…site, and…" Please insert after "site," and before "and": "and actions under consideration as part of the response action,". Replace with "non-promulgated."	The subject text has been revised as requested.
84	3.47th para	3-4, pg39	"…guidance…" Guidance may be a TBC, but generally isn't considered "applicable" or "relevant and appropriate" because it does not satisfy the "promulgated" requirement.	Please see the response to comment #83.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
85	4.1, 1st para (Number 2)	4-1, pg40	"…legal restriction…" Please change to "restrictions."	The subject text revised based on other comments as follows: "~~1. Land use controls (LUCs) (i.e., institutional controls [ICs] such as~~ 2. **LUCs:** LUCs are physical, legal, or administrative ~~or legal restriction or engineered controls such as fences~~ mechanisms to implement restrictions on land use and ~~signage)~~ access to limit exposure of landowners or users of the property to potential MPPEH (i.e., ICs and or engineering controls [ECs]). LUCs also can be used to maintain the integrity of a response action. Monitoring and inspections occur to ensure effectiveness of and compliance with restrictions."	Agreed.	Noted.
86	4.2.2, 1st para	4-2, pg41	"The remainder of the site (all non-berm areas) are suitable for UU/UE (TriEco-Tt, 2017)." EPA does not agree UU/UE has been established in the general Bermed Area based on clearance activities undertaken to date.	All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA.	See EPA comment on RTC 19, and revise per the comment.	All references to NFRA and UU/UE have been removed from the EE/CA. No further text revisions were necessary.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
87	4.2.2, 2nd-3rd para	4-2, pg41	"Details concerning the ICs would be developed in a Site Management Plan (SMP) in the event intrusive activities are conducted in the Bermed Area. The SMP would prescribe contingency measures and protocols required to meet the performance standards in the ICs. These protocols would include methods that appropriately mitigate the potential explosive hazard associated with MEC/MPPEH items when engaged in intrusive activities within the earthen berm. The SMP would be prepared by the new property owner, who would be familiar with the intended intrusive activities, and approved by FFA signatories (TriEco-Tt, 2017). The IC performance objectives to be achieved by implementing the SMP (to be prepared by the new property owner) after conveyance of the property would be specifically detailed in a LUC remedial design (to be prepared by the Navy) prior to property transfer." This text appears to be inconsistent with the outcome of EPA/Navy discussions about the FIB ROD in that it seems to suggest that the SMP would identify the ICs and associated procedures and protocols, rather than the decision document. Please clarify the remedy elements that will be addressed in the decision document, the RD, and the SMP, so that it corresponds to the FIB ROD. However, it is unclear whether long-term ICs may be implemented through a removal action and, if so, whether a LUC RD would be the appropriate document for specifying the implementation details for the performance objectives.	To correspond with the FIB ROD, Sections 4.2.2.1 through 4.2.2.4 were added to better describe Alternative 2, LUCs. No change was made in response to this comment because the previous text was replaced as follows. "Alternative 2 ~~would restrict activities~~ assumes that ~~could result in~~ LUCs would be implemented to address the risk of an uncontrolled encounter with potential ~~exposure to incidental, subsurface~~ munitions-related items ~~or~~ and explosive hazards. ~~Alternative 2, LUCs, includes ICs and engineering controls for the existing berm, which is effectively acting as a cap for the underlying area~~. by unqualified/untrained personnel during intrusive or ground-disturbing activities. The ~~remainder of~~ LUCs alternative consists of prohibition on ground disturbance with deed restrictions, military munitions recognition and safety training, unexploded ordnance (UXO) construction support, signs, fencing, and long-term monitoring 4.2.2.1 Deed Restrictions If the Navy transfers the ~~site (all non-berm~~ land associated with the potential munitions-related items and explosive hazards within the Bermed Area, then LUCs—including restrictions and a description of affected areas~~) are suitable for UU/UE (TriEco-Tt, 2017)~~ present at the site—would need to be incorporated into any real property documents necessary for transferring ownership from the Navy." Sections 4.2.2.1 through 4.2.2.6 have been revised/added to include detail in a similar manner as the FIB ROD.	"No change was made in response to this comment" The introductory language in the response should be deleted to reflect that other changes that were made resolve this issue. "…with deed restrictions…" What about a state land use covenant (aka a "CRUP)? "4.2.2.1 Deed Restrictions" The description of deed restrictions is too limited. Please revise the text to describe the restrictions that are necessary to ensure protectiveness (e.g., what activities will be restricted), and how they will implemented both in the deed and a land use covenant (suggest the title of the section include ICs). "…land associated with the potential munitions-related items and explosive hazards within the Bermed Area" The scope of the property referenced here is unclear; please clarify so that it is clear that the entire Bermed Area potentially has residual munitions and therefore will have to be subject to LUCs.	Section 4.2.2 was revised as follows: "Under Alternative 2, LUCs would be implemented to address the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during intrusive or ground-disturbing activities. The ~~remainder of~~ LUCs alternative consists of a prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when ~~th deed restrictions and~~ UXO construction support and military munitions recognition and safety training for construction personnel are provided. These LUCs would be enforced by the Navy until a Final ROD is signed." Section 4.2.2.1 (Deed Restrictions) was removed because deed restrictions will not be part of Alternative 2. Alternative 2 is an interim remedy and the property will remain under Navy ownership and control until a Final ROD is signed and the final remedy implemented.
88	4.2.2, 3rd para	4-2, pg41	"IC…" Please revise the text to state something like: Minimization of the munitions hazards would be achieved prior to transfer by including appropriate activity restrictions or other controls in leases and licenses issued by the Navy that mirror post-transfer IC requirements.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Although it is acceptable not to revise the text because the specific text was deleted, please respond to the point of the comment regarding LUC mechanisms employed to ensure protectiveness pending transfer of the property.	Please see the response to comment #87.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
89	4.2.2, 4th para	4-3, pg42	"…which will act as a cap that will prevent access to any potentially underlying MPPEH." This statement presumes that the clearance activities undertaken to date in relation to the berm are sufficient to ensure no munitions hazards remain in the upper layer of the berm, but these clearance activities do not support this presumption.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
90	4.2.2, 4th para	4-3, pg42	"…in place…" Replace with "in-place."	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
91	4.2.2, 4th para	4-3, pg42	"…perimeter fence…" Please clarify if the referenced "perimeter" is the perimeter of the Bermed Area or just the berm itself.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
92	4.2.2, 5th para	4-3, pg42	Clarify the text to state whether the alternative includes inspection/maintenance of perimeter fencing. Review and modify the cost analysis, as necessary, to account for costs associated with ensuring the integrity of the perimeter fencing. The costing also needs to take into account the costs associated with preparation, implementation and monitoring of the ICs (just as in the FIB ROD situation the Navy needed to include such costs).	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Although it is acceptable not to revise the text because the specific text was deleted, please respond to the point of the comment regarding what costs are taken into account for purposes of costing Alternative 2 (this may be done elsewhere due to revised text, but the Navy should note in response to this comment that it has noted the comment and where the substantive response is in the revised text).	Fencing and signage were removed as LUC components for this interim remedy. The Bermed Area will remain under Navy ownership and control until a Final ROD is signed and the final remedy implemented. Therefore, installation of fencing and signage was determined to be unnecessary.
93	4.2.2.1, 1st para	4-3, pg42	"…at the Bermed Area…" The reference to the "Bermed Area" appears to be at odds with the described scope of the NTCRA as limited to the berm within the Bermed Area. Please clarify the area to which "restriction[s] of land use" would apply.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
94	4.2.2.1, 2nd para	4-3, pg42	"…to inform all personnel entering…" Clarify what entity is responsible for controlling site access pre-/post-transfer. Also, this description suggests that the ICs consist solely of notification as the text does not describe any kinds of restrictions on activities such as, for example, a prohibition on ground disturbance absent training or a requirement that UXO personnel be on call. This description is at odds with the description in the second paragraph of Section 4.2.2.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
95	4.2.2.1, 2nd para	4-3, pg42	"…specify…" Please consider replacing with "require."	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.
96	4.2.2.1, 2nd para	4-3, pg42	"Physically, base access is limited by a secure fence around the facility and a manned entrance gate." Please confirm that the entrance gate to the portion of the base to the south of Bailey Road is manned.	Please see the response to comment #87. No change was made in response to this comment because the previous text was replaced.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
97	4.2.2.2	4-3, pg42	Change the section heading to "Signage and Fencing."	The title of Section 4.2.2.5 (formerly 4.2.2.2) has been revised to "Signage and Fencing."	Agreed.	Noted.
98	4.2.2.2, 1st para	4-3, pg42	Please revise to clarify the location and extent of the existing fencing; it appears that warning signs on posts would be placed at the perimeter of the Bermed Area, but not on the existing fencing, which it appears is located just around the perimeter of the berm itself.	Section 4.2.2.5 (formerly 4.2.2.2) was revised as follows for clarity: "A fence already exists at the site around the berm perimeter, so no additional fence is needed."	Agreed.	Noted.
99	4.2.3, 1st para	4-4, pg43	"…involves removal of the soil berm, followed by detection, removal, and treatment…" The highlighted text suggests that the Navy intends to excavate the soil berm before conducting any geophysical surveys, but this is at odds with the description of the process set forth in sub-section 4.2.3.2, below. Please revise the text so that it corresponds to the description below.	The subject text was revised for clarify as follows: "Alternative 3 involves detector-aided surface clearance of berm soil in 6-inch lifts; removal of ~~the soil berm, followed by detection, removal, and treatment, as necessary, of MPPEH/MEC within and below the~~ cleared berm soil in 6-inch soil lifts; post-removal DGM survey of the berm footprint~~. All detected~~ to confirm all anomalies have been removed; reacquisition of identified anomalies, if any; intrusive investigation and anomaly removal, if required; and management of all discovered MPPEH/MEC. Berm soil would be screened in 6-inch lifts using detector-aided equipment to identify and remove MPPEH/MEC, MDAS, and non-munitions-related ~~scrap would be removed~~ metal from ~~soil within and beneath the berm under Alternative 3. MDAS and other debris would be recycled or landfilled off site as appropriate.~~ the berm. Once all ~~anomalies are~~ berm soil is removed, a post-removal geophysical survey ~~will~~ would be performed on the subsurface of the former berm footprint. The post-removal geophysical survey ~~will~~ would be performed using DGM (~~Variant~~ Variation 3A) or advanced geophysical classification (AGC (~~Variant~~ in dynamic mode (Variation 3B) methodologies. If anomalies are found during the post-removal geophysical survey, they ~~will~~ would be reacquired, intrusively investigated, and removed. The post-removal geophysical survey ~~will~~ would be re-performed in those areas to confirm all anomalies have been removed from the berm footprint. All recovered MPPEH items would be inspected and classified as MEC or MDAS. MEC items would be explosively treated at the site. MDAS (after demilitarization) and other metal debris would be recycled or landfilled off site as appropriate. Additionally, soil samples would be collected for analysis of MC (metals and explosives) if ~~MMPEH/MEC are explosively treated (i.e., post-demolition shot) or if~~ munitions-related items are discovered	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
99 *(cont.)*	4.2.3, 1st para	4-4, pg43	*(see comment above)*	during the intrusive investigation or MMPEH/MEC are explosively treated (i.e., post-demolition shot). MC results would only be used to confirm no contamination remains in soil ~~post-demolition or~~ following removal of munitions-related items or post-demolition. No remediation goals have been established for this site; however, the Navy will identify project screening levels in the SAP. Although no MC contamination is expected, soil sampling will be done underneath any discovered munitions items, regardless of whether there was evidence of a release, and at post-demolition shot locations where detonation in place or consolidated MPPEH/MEC detonation occurs, if applicable. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. If MC contamination is detected, impacted soil will be removed from the site and disposed of at a licensed facility. Excavated areas will be restored to match the existing grade. ~~Reseeding~~ Vegetation reseeding may be applicable in the project staging areas. The following generalized approach was developed to assist with the analysis of Alternative 3, including the development of rough order of magnitude pricing." Additionally, the title of Section 4.2.3.2 was revised to "Berm Soil Clearance and Removal" and Section 4.2.3.5, Post-Removal Geophysical Survey, was moved prior to Section 4.2.3.4, Management of MPPEH/MEC and is now Section 4.2.3.3 to better align with the sequence of tasks that will be performed during the NTCRA.	Agreed.	Noted.
100	4.2.3, 3rd para	4-4, pg43	"MC results would only be used to confirm no contamination remains in soil post-demolition or following removal of munitions-related items." Please explain what would happen if the sampling reveals soil contamination at levels of concern. If the Navy really is proposing just confirmation sampling with no soil cleanup for contaminated soil, then the restoration of the area to "existing grade" and "reseeding" doesn't make sense.	Please see the revision based on response to comment #99	Agreed.	Noted.
101	4.2.3, 3rd para	4-4, pg43	"Reseeding…" Clarify that this reseeding is to restore vegetation and does not relate to munitions test seeds.	Please see the revision based on response to comment #99	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
102	4.2.3.2, 2nd para	4-5, pg44	"…a geophysical team with either a man-portable EM61 or an UltraTEM to conduct a post-removal geophysical survey…" It appears that the highlighted text is missing a verb after the reference to "UltraTEM," perhaps "would" in place of "to?"	Section 4.2.3.2 was revised to include a forward reference to Section 4.2.3.3, Post-Removal Geophysical Survey, and all text discussing the post-removal geophysical survey has been removed from this section.	Agreed.	Noted.
103	4.2.3.2, 2nd para	4-5, pg44	"…sets…" Please change to "set."	Please see the response to comment #102.	Agreed.	Noted.
104	4.2.3.3, 2nd para	4-6, pg45	"…demolitions…" Please confirm plural form is correct.	Section 4.2.3.4 (formerly 4.2.3.3) was revised as follows: "Consolidated ~~demolitions~~ demolition shots would be used…"	Agreed.	Noted.
105	4.2.3.4	4-6, pg45	"…0 to 6 inches…" It may be more appropriate to stipulate these parameters in the NTCRA Work Plan.	Section 4.2.3.5 (formerly 4.2.3.4) was revised as follows: "…be collected ~~from 0 to 6 inches below~~ underneath any…."	Agreed.	Noted.
106	4.2.3.5	4-7, pg46	This appears to repeat information already presented in Section 4.2.3.2. Review and revise as appropriate.	Please see the response to comment #102.	Agreed.	Noted.
107	4.3.1, bullet 4	4-8, pg47	"…Toxicity…" Revise the text to state how "toxicity" is addressed by this action or how this aspect of the criterion is not applicable to this action.	Bullet 4 was revised as follows: • "…Identifies whether ~~or not~~ implementation of the alternative would reduce the toxicity, mobility, or volume of MPPEH/MEC in soil."	This is the only bullet point that is Bermed Area-specific in that it reference MPPEH/MEC; for consistency it would be best for the munitions reference to be more general such as "of contaminants in soil."	The subject bullet was revised as requested.
108	4.3.1, bullet 5	4-8, pg47	"…with which the remedy achieves…" Please revise to: "it takes for the remedy to achieve."	Bullet 5 was revised as follows: • "…This criterion includes the time ~~with which~~ it takes for the remedy ~~achieves~~ to achieve protectiveness and the potential to create adverse impacts on human health and the environment during construction and implementation."	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
109	4.3.4, 1st para	4-9, pg48	"Environmental impacts are provided in this EE/CA for overall consideration of the NTCRA alternatives." These considerations should be integrated into the short-term effectiveness criterion; there is no basis for considering them separately in the removal context.	Section 4.3.4 was removed, and the following text was added in Section 4.2.3.1: "Planning and execution would take into consideration green remediation metrics in accordance with EPA's "Methodology for Understanding and Reducing a Project's Environmental Footprint" (EPA, 2012)."	While acceptable to note this point in the section on work plans, the discussion of environmental impacts should be incorporated into the discussion of short-term effects, so that there is a clear basis for consider green remediation metrics in the work "planning and execution" context.	Section 4.4 discusses short-term effectiveness. The following additional information was added to the end of Section 4.4: "Table 4-3 summarizes the estimated values for the green remediation metrics for materials, waste, water, energy, and air. The green remediation metrics were calculated using the level of detail and assumptions discussed in Section 4.2 and provided in Appendix B. Appendix C includes supporting information for the green remediation metric values. As part of the NTCRA planning, including development of the combined NTCRA Work Plan/SAP, green remediation best management practices (BMPs) will be evaluated and selected as appropriate to minimize the environmental footprint of the NTCRA. The guidance in "Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites" (EPA, 2008) and "Methodology for Understanding and Reducing a Project's Environmental Footprint" (EPA, 2012) would be considered to facilitate selection of green remediation BMPs for the NTCRA."
110	4.3.4, 1st para	4-9, pg48	"…included land…" Please change to "include."	Please see the response to comment #109.	See EPA comment on RTC 109.	Please see the response to comment #109.
111	4.3.4, 1st para	4-9, pg48	"…environment impact…" Please change to "environmental."	Please see the response to comment #109.	See EPA comment on RTC 109.	Please see the response to comment #109.
112	4.3.4, 2nd para	4-9, pg48	"The green remediation metrics, as defined by EPA (2012), are summarized below." Consider moving this section of summary bullets to the Cost Analysis, Appendix B.	Please see the response to comment #109.	See EPA comment on RTC 109.	Please see the response to comment #109.
113	4.4	4-11, pg50	This section does not address the central questions of effectiveness, implementability and cost, including the various sub-categories under the categories of effectiveness and implementability.	The section has been replaced to address each alternative's effectiveness, implementability, and cost.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
114	4.4, 1st para	4-11, pg50	"…as well as potential environmental impacts during implementation." This is not an independent category; instead, as the description of "short-term effectiveness" states, it includes "adverse impacts on . . . the environment during construction and implementation."	The section has been revised to better address each alternative's effectiveness, implementability, and cost. The first paragraph of Section 4.4 was also revised as follows: "~~This section presents the detailed individual analysis of~~ Alternatives 1, 2, and 3 were qualitatively evaluated based on their effectiveness, implementability, and cost, as ~~well as potential environmental impacts during implementation~~…." The text beginning at "Table 4-2 summarizes…." has been moved after the bulleted list summarizing the analysis of alternatives.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
115	4.4, 2nd para	4-11, pg50	"The following are the qualitative descriptions for the land and ecosystem impacts during the implementation of the NTCRA alternatives:" This discussion should be integrated into the discussion of "effectiveness."	Please see the responses to comments #109, #113, and #114.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
116	4.4, bullet 2	4-11, pg50	"…signs…" Revise to include maintenance of the perimeter fencing.	Please see the response to comment #113. The subject text is no longer applicable.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
117	4.4, 3rd para	4-12, pg51	"During fieldwork, it is not anticipated that any wildlife in the area would be disturbed and/or frightened from the area due to the amount of activity and noise." Explain how this statement is credible if detonation of MEC is required.	Please see the response to comment #113. The subject text is no longer applicable.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
118	4.4, 3rd para	4-12, pg51	"…are anticipated to…" Please explain the use of the highlighted phrase, rather than, for example, "would be."	Please see the response to comment #113. The subject text is no longer applicable.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
119	4.4, 3rd para	4-12, pg51	"…minimization measure in accordance…" Please change to "measures."	Please see the response to comment #113. The subject text is no longer applicable.	See EPA comments #210 through #221	Please see the responses to comments #210 through #221.
120	4.4, 3rd para	4-12, pg51	"If analytical results exceed selected screening criteria, then soil removal may be required." This is the first reference to the possibility of soil removal, but it is not referenced in the description of the remedy. Please revise the EE/CA so that it is clear whether soil removal and disposal or treatment is included as part of the proposed removal action.	Please see the response to comment #113. The subject text is no longer applicable. However, the EE/CA has been revised globally, as appropriate, to indicate that soil will be removed if MC concentrations exceed applicable screening levels underneath a munitions item.	Agreed.	Noted.
121	5.0, 1st para	5-1, pg52	"…of the alternatives…" Delete this duplicated "of the alternatives" text.	The text was revised to remove the repetitive phrase as follows: "Table 5-1 presents the comparative analysis of the alternatives ~~of the alternatives~~ for MEC/MPPEH items within or beneath the earthen berm at the Bermed Area."	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
122	5.1	5-1, pg52	"Alternative 1 is considered the least effective alternative to protect human health and the environment because risks to current and future receptors would remain indefinitely and the toxicity, mobility, and volume of munitions-related items through treatment at the site would not be reduced. Alternative 2 is not considered an effective alternative to protect public health and the environment because risks to current and future receptors would remain indefinitely at the site, and toxicity, mobility, and volume through treatment of munitions-related items at the site would not be reduced." This description essentially treats the no-action and LUCs alternatives as equivalent, but they are not. Please revise the text to distinguish between the effectiveness of the two alternatives. Please also address the sub-criteria noted in the NTCRA Guidance. Revise the text to state how "toxicity" is addressed by this action or how this aspect of the criterion is not applicable to this action.	Section 5.1, first paragraph was revised as follows: "Alternative 1 is considered the least effective alternative to protect human health and the environment because risks to current and future receptors would remain indefinitely and the ~~toxicity,~~ mobility, and volume of munitions-related items through treatment at the site would not be reduced. Alternative 2 is ~~not~~ considered ~~an~~ to be a moderately effective alternative to protect public health and the environment because LUCs are as effective as removal for protecting human health, although not the environment. However, LUCs would require long-term maintenance and inspections of access controls to ensure risks to current and future receptors ~~would remain indefinitely at the site~~ continue to be mitigated/reduced, and toxicity, mobility, and volume through treatment of munitions-related items at the site would not be reduced. "	"…~~toxicity~~… Please explain why the Navy deleted the term "toxicity." Is it because the Navy does not consider munitions to be toxic so that the criterion does not apply? "…access controls…" As noted in a comment on the red-lined section 4.4 replacement text, access controls are not the only element of the LUC remedy describe in Alternative 2. Please revise the text to reference at least the major components (e.g., access controls and use restrictions).	Deleted text "toxicity" restored to Section 5.1. Sentence was revised to read: "…would require long-term maintenance of administrative controls (as identified in Section 4.2.2) to ensure risks to current and future receptors continue to be mitigated…"
123	5.1	5-1, pg52	"…anomalies identified…" The text "anomalies identified" indicates that Alternative 3 would not support UU/UE, as the clearance work may not "identify" all anomalies; unidentified anomalies may remain.	All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA.	The revised text is not acceptable in that it suggests the NTCRA will achieve a level of clean-up beyond the technological limits of the equipment. Please see EPA comment on RTC 19, and revise the text in accordance with the comment.	Text regarding NFRA was removed from the EE/CA. The sentence in Section 5.1 was revised as follows: "Based on a comparative analysis of effectiveness, Alternatives 3 and 4 are equally effective at reducing the potential exposure to munitions-related items or explosive hazards posed to current and future receptors." ~~to levels considered protective under open space/recreational land use and would achieve the goal of NFRA after the NTCRA is implemented to support site closure~~."
124	5.1	5-1, pg52	"…Alternative 3 would most effectively reduce the potential exposure to incidental munitions-related items or explosive hazards posed to current and future receptors to levels considered protective under commercial/industrial land use…" It isn't clear from the EE/CA that Alternative 3 would achieve protectiveness for commercial/industrial use without LUCs to prevent uncontrolled ground disturbance. Moreover, protectiveness for commercial/industrial use is not the same as UU/UE as the text suggests (Alternative 3 would . . . reduce . . . to levels considered protective under commercial/industrial land use and would achieve the goal of UU/UE . . . ." Also, the reference to protectiveness under commercial/industrial land use is inconsistent with the RAO which only references current site use which is stated to be cattle grazing/agricultural.	Please see the response to comment #123. Section 5.1 has also been revised as follows: "Based on a comparative analysis of effectiveness, Alternative 3 would most effectively reduce the potential exposure to ~~incidental~~ munitions-related items or explosive hazards posed to current and future receptors to levels considered protective under ~~commercial/industrial~~ open space/recreational land use and would achieve the goal of ~~UU/UE~~NFRA after the ~~remedy~~ NTCRA is implemented to support site closure."	"…levels considered protective under ~~commercial/industrial~~ open space/recreational land use and would achieve the goal of ~~UU/UE~~NFRA after the ~~remedy~~ NTCRA is implemented to support site closure." Delete the portion of the sentence from "receptors" to the end of the sentence because it is not consistent with the stated RAO.	Please see the response to comment #123.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
125	5.1	5-1, pg52	"…would achieve the goal of UU/UE after the remedy is implemented to support site closure." The NTCRA cannot be judged to have achieved the goal of UU/UE if the RAO does not state that as the intended purpose of the NTCRA; the RAO is not "elimination of all residual incidental munitions risk for potential future residential use," but just "mitigating the risk of an uncontrolled encounter." Revise this text.	All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA. Please see response to comment #124.	Ok with this comment? See EPA comments on RTCs 123 and 124.	Please see the response to comment #123.
126	5.2	5-1, pg52	"…equally technically and administratively feasible…" Generally, LUCs are rated slightly lower for implementability as there is the potential for failure over time when maintenance/inspection activities or other administrative procedures do not occur or are compromised. Revise the text accordingly. Also, as noted above in comments on the ES tables, the Navy says technical feasibility is N/A for LUCs which is inconsistent with the statement here.	Section 5.1 was revised as follows: "~~The three alternatives~~ Alternative 1 has no implementability because no technical or administrative feasibility is required and no services or materials are ~~equally~~ needed. Alternative 2 is technically and administratively feasible and the services and materials necessary to implement the alternative are readily available. However, LUCs have the potential to fail over time when maintenance/inspection activities or other administrative procedures do not occur or are compromised and is therefore rated slightly lower than the other alternatives for implementability. Alternative 3 is technically and administratively feasible, and the services and materials necessary to implement the alternative are readily available." Tables ES-2 and 5-1 were revised to show "Moderate" for Administrative Feasibility of Alternative 2.	"…has no implementability…" This use of the term "implementability" seems incorrect; perhaps "Implementability is not an issue with Alternative 1 because . . . ."	Section 5.2 has been revised as requested.
127	5.3	5-1, pg52	"If this alternative were selected, MPPEH/MEC in the earthen berm could require future action because this alternative would not achieve the RAO, which would result in future costs." This sentence does not make sense: by definition the no-action alternative does not involve any action, hence does not incur any costs.	Section 5.3 was revised as follows: If this alternative were selected, MPPEH/MEC would remain in the earthen berm ~~could require~~ and the RAO would not be achieved. As a result, future action ~~because this alternative would not achieve the RAO, which~~ could be required that would result in future costs."	The revised text is not responsive to the original comment, the point of which is that cost analysis focuses on the alternative itself, not future actions. In addition, though not commented on originally, the inclusion of text about the effectiveness of the alternative is not relevant to the description of costs. Please revise the text.	Erroneous text has been removed per comment. The bullet now reads as follows: "The estimated total cost for Alternative 1 (no action) is $0.
128	5.3	5-1, pg52	"The estimated cost for Alternative 2 is $377,600." See earlier comment in Section 4.2.2.1 on costs that need to be included for Alternative 2.	The costs for Alternative 2 has been added to the text as follows: "The estimated cost for Alternative 2 is $~~377,600~~303,329. Alternative 2 would not ~~reduce toxicity, mobility, or volume of~~ achieve the RAO because MPPEH/MEC ~~at the site because it~~ would ~~be left~~ remain in place in the earthen berm and its effectiveness to protect human health and the environment would rely on implementation and maintenance of LUCs. Alternative 2 would not support ~~the~~ potential ~~clean~~ closure of the site and the goal of ~~UU/UE~~ NFRA. "	The revised text is not responsive to the original comment, the point of which is that cost analysis should include certain costs such as monitoring and maintenance of the fence around the berm itself. In addition, though not commented on originally, the inclusion of text about the effectiveness of the alternative is not relevant to the description of costs. Please revise the text.	Section 4.3.3 was revised to summarize the cost components included in each alternative. Section 5.3 has been revised to reference Section 4.3.3, to clarify that detailed costs are provided in Appendix B, and to simply summarize the costs for each alternative. The bullet for Alternative 2 was revised as follows: "The estimated total cost for Alternative 2 (LUCs) is $70,000 (ranges from $49,000 to $105,000). The estimated capital cost is $70,000. The estimated total present value is $70,000."

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
129	5.3	5-1, pg52	"Alternative 2 would not reduce toxicity, mobility, or volume of MPPEH/MEC at the site because it would be left in place in the earthen berm and its effectiveness to protect human health and the environment would rely on implementation and maintenance of LUCs. Alternative 2 would not support the potential clean closure of the site and the goal of UU/UE." This text is not relevant to the discussion of cost, except to the extent that under the LUC alternative on-going monitoring, etc., would be required, whereas assuming as the Navy does that Alternative 3 results in UU/UE (an assumption with which EPA does not agree), no further action would be required at the Bermed Area.	Please see response to comment #128	See EPA comment on RTC 128.	Please see the response to comment #128.
130	5.3	5-2, pg53	"…achieve the RAO and the goal of UU/UE." The NTCRA cannot be judged to have achieved the goal of UU/UE if the RAO does not state that as the intended purpose of the NTCRA; the RAO is not "elimination of all residual incidental munitions risk for potential future residential use," but just "mitigating the risk of an uncontrolled encounter." Revise this text.	All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA. Please see response to comment #124.	"…replaced with NFRA…" See EPA comment on RTC 19 and revise the text in accordance with the comment.	Text regarding NFRA was removed from the document in response to comment #19.
131	6.0, 1st para	6-1, pg54	"…RAO for the site by removing potential MPPEH/MEC in and below the earthen berm, thereby reducing human exposure and removing the exposure pathway for current and future receptors." EPA does not agree with the Navy that the proposed clearance work would "remov[e] the exposure pathway for current and future receptors."	Section 6.0, first paragraph was revised as follows: "Alternative 3A would meet the RAO for the site by removing potential MPPEH/MEC in soil, thereby reducing/mitigating the explosive hazard to human ~~exposure~~ health and ~~removing the pathway for current and future receptors~~ the environment."	Agreed.	Noted.
132	6.0, 2nd para	6-1, pg54	"The ultimate goal of the NTCRA…" Please explain the meaning of this phrase. The "ultimate goal" of the NTCRA is to achieve the RAO, and thereby protection of human health and the environment.	Section 6.0, second paragraph was revised as follows: "The ~~ultimate goal~~ objective of the NTCRA is to ~~address~~ reduce/mitigate the potential exposure to ~~incidental~~ munitions-related items…"	This revised text reads as though the reference is to the RAO, which is repetitive of the 2nd sentence of the 1st paragraph of Section 6. Please revise so that there is just one clear statement of the RAO.	The second sentence has been removed as requested.
133	6.0, 2nd para	6-1, pg54	"…and future land use." The RAO does not refer to future land use, only current land use: "associated with the current site use."	The preliminary RAO in Section 3.1 was revised as follows: • "Protect human health and the environment by reducing/mitigating the risk of an uncontrolled encounter with potential ~~incidental~~ munitions-related items and explosive hazards by unqualified/untrained personnel during ground disturbing activities associated with ~~the~~ current and future site use." No change was made in Section 6.0 in response to this comment.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
134	6.0, 2nd para	6-1, pg54	"…achieve the goal of UU/UE to support clean closure of the site." EPA does not agree with the Navy that the proposed clearance work would achieve the goal of UU/UE or support clean closure. Revise this text.	Section 6.0, second paragraph was revised as follows: "…Alternative 3A would achieve the goal of ~~UU/UE to support clean closure of the site~~ NRFA." All references to UU/UE were removed globally throughout the EE/CA and replaced with NFRA.	The reference to NFRA is not acceptable. See EPA comment on RTC 19 and revise the text in accordance with the comment.	Please see the response to comment #19.
135	Table 4-1, No Action row, Screening Summary column	1 of 2, pg67	"Meets some location- and action-specific ARARs." Please explain how the no-action alternative would satisfy location or action-specific ARARs.	The subject text was removed from Table 4-1.	Agreed.	Noted.
136	Table 4-2	1 of 2, pg69	See comments on Table ES-1, although most of the comments on it are noted on Table 4-2 as well.	Table 4-2 was revised to match the changes made in Table ES-1	Highlighted but no comment.	Noted.
137	Table 4-2, Compliance with ARARs row, 3—Berm Removal column	1 of 2, pg69	"Removal action is designed to comply with the action-specific ARARs." What about chemical-specific ARARs in the event that soil sampling reveals MC contamination at levels of concern and soil removal and disposal is required?	The subject text was revised as follows: "Removal action ~~is designed to comply~~ complies with ~~the action-specific~~ all ARARs."	Agreed.	Noted.
138	Table 4-2, Long-Term Effectiveness row, 2—LUCs column	1 of 2, pg69	"Does not provide long-term effectiveness for overall protection of human health and the environment because the explosive hazard from MPPEH/MEC in berm soil remains under this alternative. For the soil exposure pathway, this alternative would be effective in the long-term reduction of hazards to humans as long as the physical access restrictions to prohibit exposure to soil are implemented, inspected, and maintained. The administrative policies also require implementation and consistent enforcement. Not a permanent solution." Please revise the text to reflect that LUCs are considered long-term effective, albeit to a lesser degree than complete removal (which isn't clear the Navy will achieve), and a permanent solution.	The following text was removed from Table 4-2: ~~"Does not provide long-term effectiveness for overall protection of human health and the environment because the explosive hazard from MPPEH/MEC in berm soil remains under this alternative.~~ Additionally, the text in the LUCs column, for Long-Term Effectiveness and Permanence was revised as follows: "For the soil exposure pathway, this alternative would be effective in the long-term reduction of hazards to humans as long as the physical access restrictions to prohibit exposure to subsurface soil are implemented, inspected, and maintained. The administrative policies also require implementation and consistent enforcement. Not a permanent solution. Long-term effectiveness relies on adherence to the administrative and physical controls."	"Not a permanent solution. " Remove this sentence	The sentence has been removed as requested.
139	Table 4-2, Short-Term Effectiveness row, 2—LUCs column	1 of 2, pg69	"Would not achieve the RAO of reducing or mitigating MPPEH/MEC in site soil." Please revise this text as it is not accurate. See comment on similar statement in Table ES-2.	The subject text was revised as follows: "Would not achieve the RAO ~~of reducing or mitigating MPPEH/MEC in site soil~~ for protection of the environment."	Agreed.	Noted.
140	Table 4-2, Technical Feasibility row, 2—LUCs column	2 of 2, pg70	"N/A…" This text is inconsistent with the description on page 5-1 and with the definition of technical feasibility.	The subject text was revised as follows: "~~N/A; does not require any removal or remedial technology for implementation.~~ No technical feasibility concerns."	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
141	Table 5-1	1 of 2, pg74	See comments on Table ES-2, which are not repeated here, but are applicable.	Table 5-1 was revised to match the changes made in Table ES-2.	Agreed.	Noted.
142	Table A2-1, Defines RCRA hazardous waste row, Citation column	A-19, pg102	"40 C.F.R. Part 261, Subpart A, B, C, and D" The citation is overbroad; please provide specific citations to the provisions within Subparts A, B, C and D that the Navy considers "Applicable."	The Navy has removed the citation to 40 C.F.R. Part 261, Subparts A, B, C, and D. The Navy has identified 22 C.C.R. §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100 as potential federal ARARs (not potential state ARARs) because they are analogous to the federal criteria for determining if a waste meets the definition of RCRA hazardous waste. The Navy has accepted 22 C.C.R. §§ 66261.3(a)(2)(C), 66261.22(a)(3) and (4), 66261.24(a)(2)–(a)(8), 66261.101(a)(1) and (a)(2) as potential state ARARs because these provisions represent a definition of hazardous waste that is broader in scope than the federal RCRA requirements, and therefore, define non-RCRA, state-regulated hazardous waste."	"…66261.21…" Please narrow the citation as appropriate to match the proposed removal action, at minimum by excluding 66261.21(b) (EPA waste number). "…66261.23…" Please narrow by excluding 66261.23(b). "…66261.3(a)(2)(C)…" Please explain the inclusion of this citation as an ARAR for state non-RCRA hazardous waste. "…66261.22(a)(3) and (4)…" Please explain the basis for the inclusion of these citations as State non-RCRA hazardous waste ARARs. "…66261.24(a)(2)–(a)(8)…" Please explain the basis for the inclusion of these citations as State non-RCRA hazardous waste ARARs. "…66261.101(a)(1) and (a)(2)…" Please explain why the Navy does not cite to 66261.101(a)(3) and (4) given that (a) defines non-RCRA hazardous waste "if it meets all of the following criteria [(a)(1) - (4)].	The Navy revised the citation to 22 C.C.R. § 66261.21(a)(2) and (4). The Navy revised the citation to 22 C.C.R. § 66261.23(a). The Navy removed the citation to 22 C.C.R. § 66261.3(a)(2)(C) as an ARAR for non-RCRA, state-regulated hazardous waste. The Navy has accepted 22 C.C.R. § 66261.22(a)(3) and (4) as non-RCRA, state-regulated hazardous waste because only the first two definitions in (a)(1) and (2) are contained in the federal RCRA program at 40 CFR § 261.22. The Navy has accepted 22 C.C.R. § 66261.24(a)(2) through (8) as non-RCRA, state-regulated hazardous waste because these provisions are not contained in the federal RCRA program at 40 CFR § 261.24. The Navy revised the citation to add 22 C.C.R. § 66261.101(a)(3); however, it is unclear how 22 C.C.R. § 66261.101(4) is a requirement for non-RCRA, state-regulated hazardous waste. None of the waste generated at the Bermed Area is listed in article 4.1.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
143	Table A2-1, Identification of hazardous waste row, Citation column	A-19, pg102	"…203, .205, and .206" The citation is overbroad; please provide specific citations to the provisions within Subpart M that the Navy considers "Applicable." In addition, it appears that Section 266.203 is not an ARAR as it concerns the transportation of military munitions which would appear to be an off-site action not subject to ARARs; Section 266.205 includes provisions that are procedural in nature, not substantive; and Section 266.206 is an overly broad cross-reference to "permitting, procedural, and technical standards" for the treatment and disposal of military munitions, and thus to provisions that are not ARARs because they are not substantive. Finally, please provide the full citation for the subsections, at a minimum, e.g., 266.203, .205, and .206.	Table A2-1 and the text in Section A.2 have been revised to identify 40 C.F.R. § 266.202(b) and (c) as the potential federal chemical-specific ARARs for determining when the munitions remaining on the Bermed Area meet the definition of solid waste. The other provisions of the Military Munitions Rule are evaluated as potential federal action-specific ARARs. The Navy has identified 40 C.F.R. § 266.203, except subsection (b), as a potential action-specific ARAR for Alternative 3, which would include the transportation of safe to move military munitions from the Bermed Area to the magazine at the Runway Debris Area (RDA). The Navy does not consider this an "off-site" action. 40 C.F.R. § 266.203 exempts military munitions from RCRA requirements as long as certain conditions are met for the transportation of the military munitions. The Navy would meet these conditions and would transport the military munitions in compliance with DoD requirements. The Navy has also identified 40 C.F.R. § 266.206 as a potential federal action-specific ARAR for Alternative 2 (for disposal of munitions) and Alternative 3 (for treatment of munitions). Although 40 C.F.R. § 266.206 is a broad cross-reference to RCRA regulations, the Navy has still determined that it is appropriate to identify for Alternatives 2 and 3. There are no subsections of 40 C.F.R. § 266.206. The Navy has not identified 40 C.F.R. § 266.205 as a potential ARAR because neither alternative includes the storage of munitions as governed by that regulation.	"The Navy has identified 40 C.F.R. § 266.203…military munitions." 266.203 lists 4 conditions that must be satisfied for "non-chemical waste military munitions" to qualify for exemption from regulation as hazardous waste during transportation (see 266.203(a)(3)). The 3rd condition is: "The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility." Please explain how the RDA qualifies as a "treatment, storage, or disposal facility," such that the transport of "safe-to-move military munitions" satisfy the conditions of 266.203(a). Also, please explain: 1) why the draft EE/CA did not clearly state that safe-to-move military munitions would be transported to the RDA; and 2) how the Navy concludes that transportation from one CERCLA site to another some number of miles away is not transportation off-site, given that for CERCLA purposes site is defined as anywhere contamination has come to be located in relation to, e.g., a particular activity at a particular location (e.g., EOD at the Bermed Area). Finally, please opine on whether the plan to transport s-t-m military munitions to the RDA should be addressed in the RDA EE/CA as well. "…40 C.F.R. § 266.206…" As the Navy notes, 266.206 is a broad reference that does not identify any specific provisions that are ARARs; in this regard, it is similar to an authorizing provision, and it does not need to be cited for the specific provisions within the very broad range identified in it (40 CFR Parts 260 - 270). Please delete the citation. "…266.205…" Please explain why portions of 266.205 are not ARARs given that the BA EE/CA calls for detonation in place or "consolidated shots," and that the Navy apparently plans to transport safe-to-move military munitions to the RDA for "treatment, storage, or disposal" (which given the RDA EE/CA, storage would seem to be the only potential action).	Section 4.2.5.4 (management of MPPEH/MEC) has been revised to state that the consolidation shot location will be "within the footprint of the former berm location." No MPPEH/MEC will be transported off site for demolition. Table A2-1, Identification of hazardous waste row, Comments: Revised to clarify that controlled detonation will be "performed onsite." 266.203 was removed as a potential ARAR because demolition will be performed onsite. The Navy has not identified 40 CFR § 266.206 as a potential chemical-specific ARAR in Table A2-1. The Navy has identified 40 CFR § 266.206 as a potential action-specific ARAR in Table A4-1. Although 40 CFR § 266.206 contains a broad reference to RCRA, the Navy thinks it is important to identify it as a potential ARAR because detonation of munitions is equivalent to treatment and will remove the RCRA characteristic. The Navy has determined that 40 CFR § 266.205 is not a potential ARAR because the Navy is going to perform onsite demolition as soon as possible after discovery (i.e., same day or next day).

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
144	Table A2-1, Applies to construction areas row, Citation column	A-19, pg102	"40 C.F.R. Parts 122, 123, 124, (National Pollution Discharge Elimination System) NPDES, implemented by…" The CFR references are unnecessary, but as cited they are overbroad; please delete. The references to the SWRCB, as amended is sufficient, but should be as narrowly tailored as possible.	The Navy has removed the citation to 40 CFR Parts 122, 123, and 124 and SWRCB Orders from Table A2-1 and Table A3-1. The Navy has also removed SWRCB Order No. 2009-0009-DWQ as amended by SWRCB Order Nos.2010-0014 and 2012-006 from Tables A2-1, A3-1, and A4-1. The construction activity in Alternatives 2 and 3 at the Bermed Area do not affect one acre. So, these requirements have been determined not to be potential ARARs."	Agreed.	Noted.
145	Table A3-1, Comments column	A-31, pg 114	The comments in the ARARs tables about the listed requirements characterized as ARARs refer to them as "potentially" applicable or relevant and appropriate. Although use of the term "potentially" is acceptable in the context of an EE/CA (or FS) to highlight that a removal alternative has not yet been selected and ARARs therefore have not yet been finalized, the Bermed Area EE/CA appears incorrectly to use the term "potentially" to suggest that a determination about whether a requirement is an ARAR is not be made until the circumstances addressed by the ARAR have in fact arisen. The identification of ARARs, however, does not await initiation of a removal (or remedial) action, but instead is based on the advance evaluation of whether the then-understood circumstances of the contamination, site location, or response activities resemble (either essentially identical; "applicable," or sufficiently similar, "relevant and appropriate") the circumstances addressed by the ARAR. Please ensure that the characterization of ARARs in the Bermed Area EE/CA is correct.	The objective of the use of "potentially" in Table A3-1 is to indicate that the ARARs are potential until selected in the Action Memorandum. Then immediately following the sentence, the Navy explains the basis for its identification of the requirements as ARARs – the presence or potential presence of threatened and endangered species and the presence or potential presence of migratory birds. No change was made in the table in response to this comment.	Agreed.	Noted.
146	Table A3-1, Location where endangered or threatened species row, Citation column	A-31, pg 114	"16 U.S.C. §§1531-1543" The citation is overbroad; please provide specific citations to the specific sections and sub-sections that the Navy considers "Applicable."	The Navy has revised the citation to the federal Endangered Species Act in Table A3-1 to 16 U.S.C. §§ 1536(a) and 1538(a) and has revised the comments to reflect compliance with the conservation measures identified in the 2018 amendment to the Biological Opinion.	"…1536(a)…" The citation to 1536(a) remains overbroad, including as it does (a)(1), which concerns the "programs for the conservation" of species; and (a)(3) and (a)(4), which concern consultation and confer, i.e., procedural, requirements. Please revise the citation to delete references to these subsections.	The Navy has revised the citations to 16 U.S.C. §§ 1536(a)(2) and (3) and 1538(a)(1) (to match the citation in the RDA) in the text and Table A3-1. The Navy has included 16 U.S.C. § 1536(a)(3) because, although considered a procedural requirement, the Navy has obtained a Biological Opinion with guidelines from USFWS. The Navy notes that 16 U.S.C. § 1536(a) only has four subsections and fails to see why such specific citations are necessary. Further, citing these specific subsections did not change the actions the Navy will take to protect threatened and endangered species that may be on the Bermed Area.
147	Table A3-1, Endangered native plant row, Citation column	A-31, pg 114	"F.G.C. §1908…" Please also reference the statutory or regulatory provision that lists the native plants determined to be "endangered" or "rare."	Upon further consideration, the Navy has removed California Fish and Game Code § 1908 as a potential ARAR. No endangered or rare native plants are on the Bermed Area site based on site surveys from 2011-2014 and the 2018 amendment to the Biological Opinion found no effect on endangered or rare native plants due to their absence from the project area.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
148	Table A3-1, Area used by endangered or threatened species row, Citation column	A-32, pg115	"F.G.C. §2080…" Please also reference the statutory or regulatory provision that lists the covered "threatened or endangered" species.	The State only identified California Fish and Game Code § 2080 as the potential state ARAR. The CTS and the Swainson's hawk are the state threatened species that are present or potentially present on the Bermed Area Site. Identifying the entire list of state threatened or endangered species is unnecessary to make the determination that the Navy accepts California Fish and Game Code § 2080 as a potential state ARAR.	"Identifying the entire list of state threatened or endangered species is unnecessary…" EPA doesn't request that the Navy identify the entire list of California threatened or endangered species, just the species that are present or potentially present. Please include the relevant citation, if any.	The State only identified California Fish and Game Code § 2080, which the Navy accepted. The State did not submit a statute or regulation that lists the California threatened or endangered species to the Navy as a potential State ARAR. The Navy has identified the species that are present or potentially present on the Bermed Area site that are State threatened or endangered species and the State is in agreement with that. No change made in response to comment.
149	Table A3-1, Fully protected bird species/habitat row, Citation column	A-32, pg115	"F.G.C. §3511…" Unless all of the bird species listed in Section 3511(b) are potentially present at or near the Bermed Area, please revise the citation to reference only those species potentially present at or near the Bermed Area.	The Navy has changed the citation to California Fish and Game Code § 3511(a)(1) and (b)(7) and (12). The Navy has included (b)(12) because the White-tailed kite may be present on the site.	Agreed.	Noted.
150	Table A3-1, Area with Falconiformes row, Comments column	A-32, pg115	"The State withdraws its previous identification of this requirement as a potential state ARAR in light of Navy's identification of the substantive provisions of the Migratory Bird Treaty Act (MBTA) as a 'relevant and appropriate' federal ARAR for this action." Please explain why the Navy's inclusion of a citation to the MBTA prompts the Navy to withdraw Section 3503.5 as an ARAR.	The text reflects agreements made between the Navy and CDFW on certain statutory provisions in the California Fish and Game Code. These provisions protect birds that are protected under the Migratory Bird Treaty Act. So if the Navy identifies the Migratory Bird Treaty Act as a potential federal ARAR, this provision of the California Fish and Game Code will not be accepted as a potential state ARAR. Further, the Navy notes that pursuant to U.S. Department of Interior Director's Order No. 225, which became effective on December 3, 2021, the U.S. Fish and Wildlife Service interprets the MBTA to prohibit incidental take of migratory birds. No change was made to the text.	Agreed.	Noted.
151	Table A3-1, Area with migratory nongame birds row, Comments column	A-32, pg115	"The State withdraws its previous identification of this requirement as a potential state ARAR in light of Navy's identification of the substantive provisions of the Migratory Bird Treaty Act (MBTA) as a 'relevant and appropriate' federal ARAR for this action." Please explain why the Navy's inclusion of a citation to the MBTA prompts the Navy to withdraw Section 3513 as an ARAR.	Please see the response to comment #150.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
152	Table A3-1, Area with birds or mammals row, Comments column	A-33, pg116	"Pursuant to 40 C.F.R. §300.400(g)(2) of the NCP, the Navy has determined that this requirement is not "relevant and appropriate" because it does not address problems or situations sufficiently similar to the circumstances of the release of CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP." Please address the question of whether Section 3005's provision about "Mitigation plans relating to mining operations approved by the department shall, among other criteria, require avoidance of take, where feasible, and include reasonable and practicable methods of mitigating the unavoidable take of birds and mammals" is sufficiently similar to the Navy's proposed actions in Alternative 3 such as to warrant its citation as "relevant and appropriate."	In order to make the ARARs tables an easy reference to determine which requirements are actually identified as ARARs, requirements determined not to be ARARs, including this requirement, were deleted from the tables. The Navy's evaluation of this requirement is still discussed in Section A.3.2.4.2.3. The Navy has determined that mining mitigation plans approved by CDFW are not sufficiently similar to CERCLA response actions. The purposes of and actions associated with mining and CERCLA cleanup at the Bermed Area are clearly different. Further, the Navy and CDFW have reached an "agree to disagree" agreement regarding California Fish and Game Code § 3005. The Navy does not accept it as a potential ARAR, but will consider that "poisoning" may include releases of CERCLA hazardous substances that pose risk to ecological receptors and will work with CDFW to set numerical cleanup goals that are protective of ecological receptors when ecological risk has been identified.	Agreed.	Noted.
153	Table A3-1, Area with bird nest or eggs row, Comments column	A-34, pg117	"Pursuant to 40 C.F.R. §300.400(g)(2) of the NCP, the Navy has determined that this requirement is not "relevant and appropriate" because it does not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP." Please explain the Navy's analysis that this section concerns the "conditions for the taking of the species."	In order to make the ARARs tables an easy reference to determine which requirements are actually identified as ARARs, requirements determined not to be ARARs, including this requirement, were deleted from the tables. The Navy's evaluation of this requirement is still discussed in Section A.3.2.4.2.3. The Navy's position is that the California Fish and Game Code § 3503, which prohibits taking, possessing, and needlessly destroying the nest or eggs of any bird, is directed toward the intentional acts and is not directed to otherwise lawful acts (for example, cleanup of hazardous substance releases), the objective of which is not to take the nest or eggs of birds. The Navy and CDFW have "agree-to-disagree" positions regarding several California Fish and Game Code statutes, including this one, and this discussion reflects those positions. The Navy recognizes that CDFW has a different position. .	Agreed.	Noted.
154	Table A3-1, Waters of the state row, Comments column	A-35, pg118	The Navy's explanation is internally inconsistent. On the one hand, the Navy states that Section 5650(a) is not an ARAR b/c the only water body nearby is 1,970 feet from the site, but on the other hand states that the Navy later will make a determination as to whether Alternative 3 would result in action contrary to the provision. The Navy needs to make the determination now whether Section 5650(a) potentially is an ARAR. Absent a compelling explanation by the Navy, please cite to Section 5650(a)(6) as a potential (if Alternative 3 is the recommended alternative post-comment) ARAR.	The Navy has revised Table A4-1 and the text in Section A.3.2.4.2.5 to indicate the Navy accepts California Fish and Game Code § 5650(a)(6) as a potential State ARAR. This reflects a compromise reached between the Navy and CDFW during development of the ROD. The Navy thinks it is unlikely that a discharge would occur from removal activities that take place in the summer when the pond, which is almost 2,000 feet away, is dry; however the Navy agreed to look at the specifics of construction actions and locations of the actions in Alternative 3 to determine if there was a possibility of discharge reaching the pond.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
155	Table A3-1, Wetlands row, Comments column	A-35, pg118	"This is not a promulgated requirement." Please explain whether this guidance may be a TBC. Also, please explain whether the Navy considered federal wetland requirements, including, e.g., E.O. 11990 and, if not, please evaluate and include them as the evaluation determines is appropriate.	In order to make the ARARs tables an easy reference to determine which requirements are actually identified as ARARs, requirements determined not to be ARARs, including this requirement, were deleted from the tables. The Navy's evaluation of this requirement is still discussed in Section A.3.2.4.2.5. The Navy has revised Section A.3.2.4.2.5 to state that there are no wetlands on the Bermed Area Site and none of the alternatives would affect a wetland. No other wetland protection requirements are identified as potential ARARs because there are no wetlands on the site.	Agreed.	Noted.
156	Table A3-1, Discharge to surface waters row, Citation column	A-35, pg118	"40 C.F.R. Parts 122, 123, 124, NPDES, implemented by SWRCB Order No. 2009-0009-DWQ (General Permit for Discharges of Storm Water Associated with Construction Activity) (as amended by Orders 2010-0014 and 2012-006)." See earlier comment on this citation and revise in accordance with it.	Upon further consideration, the Navy has removed these regulations and the State construction activity general permit as potential ARARs because the response action construction associated with Alternative 3 will affect less than one acre. Please see the response to comment number 144 Fong.	Agreed.	Noted.
157	Table A4-1, Land-use covenants row, Comments column	A-41, pg124	"See Section A4.2 for DTSC and EPA positions." EPA has not agreed to "agree-to-disagree" language with regard to Section 67391.1, and therefore requests that the Navy citation reflect EPA's position that only a, d & e, and f & i as indicated, are ARARs.	The text in the comment column does not state that there was agree-to-disagree language; the language references "positions" for DTSC and EPA positions in Section A.4.2. Section 4.2 has been revised as follows: "~~EPA agrees that the substantive portions of the state statutes and regulations referenced in this section are ARARs.~~ EPA specifically considers ~~sections~~ subsections (a)~~(1), (a)(2),~~ (d), (e) ~~(1) and (e)(2)~~ (f), and (i) of 22 C.C.R. § 67391.1, to be ARARs for this EE/CA. DTSC's position is that all of the state statutes and regulations referenced in this section are ARARs." Further, the comment column associated with 22 C.C.R. § 67391.1 was revised to remove the reference for DTSC and EPA positions.	Agree with Section 4.2 revision. "…comment column associated with 22 C.C.R. § 67391.1 was revised…" Please add (f) to the list of subsections identified in the citation column for 67391.1.	Table A4-1, Alternative 2 LUCs, was revised to remove ARARs related to land use covenants because this is an interim remedy and the property will remain under Navy ownership and control until a Final ROD is signed and the final remedy implemented.
158	Table A4-1, Land use controls row, Citation column	A-41, pg124	"Cal. Health & Safety Code § 25202.5" Please revise the citation to include only the substantive portions of the provision.	California Health and Safety Code § 25202.5 was removed from the text in Section A4.2 and Table A4-1 because it was not identified as a potential ARAR by the State.	Agreed.	Noted.
159	Table A4-1, Land use controls row, Citation column	A-41, pg124	"Cal. Health & Safety Code §§ 25223 and 25224" Please document that, as the narrative discussion of "Action-Specific ARARs" states, EPA agrees that Sections 25233 and 25224 are ARARs, as they appear to concern the procedures by which an applicant may request the modification or termination of a covenant and the grounds upon which State may grant the request.	California Health and Safety Code §§ 25223 and 25224 were removed from the text in Section A4.2 and Table A4-1 because they were not identified as potential ARARs by the State. Further, the language about EPA agreeing to state statutes and regulations has been deleted. The language about EPA considering subsections (a) (d), (e), (f), and (i) of 22 C.C.R. § 67391.1 to be ARARs has been retained.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
160	Table A4-1, Land use controls row, Citation column	A-42, pg125	"California Health & Safety Code §25355.5" EPA does not understand the Navy's explanation that Section 25355.5 is an ARAR; it appears that the section concerns the requirements for the expenditure from a state account for removal or remedial actions.	The Navy accepts this as a relevant and appropriate potential state ARAR because it is specifically mentioned the model covenant that will be offered to DTSC upon transfer of property out of federal ownership.	Please delete the reference to 25355.5(a)(1)(C); it does not set forth a substantive environmental requirement related to the cleanup of the NPL Bermed Area, but instead concerns requirements for the use of funds at cleanups of State-listed sites.	Please see the response to Comment #157.
161	Table A4-1, Container Storage row, Comments column	A-42, pg125	"The Navy would attempt to remove any remaining military munitions. Such munitions would be stored less than 90 days and disposed of at an appropriate facility." Per the EE/CA, under Alternative 3 the Navy would "treat" any MEC or MPPEH as well as MDAS (by cutting it up), at which point, presumably, the material no longer would be "hazardous." If this description of Alternative 3 is correct, please explain why the cited provisions are ARARs.	The language indicating that military munitions would be stored in RCRA containers was deleted because munitions will not be stored in RCRA containers. Munitions that are safe to move will be transported to the magazine at the RDA pursuant to 40 C.F.R. § 266.203 (identified as a potential federal action-specific ARAR) in compliance with DoD requirements. If hot spot soil excavation is necessary, the waste soil would be stored in RCRA containers, then disposed of off site.	Please see EPA comment on RTC 143 regarding 266.203, and respond here as well.	Please see the response to comment #143.
162	Table A4-1, Treatment row, Comments column	A-42, pg125	"No treatment of munitions-related material are planned for waste management." Please explain the Navy's analysis given that the description of Alternative 3 specifies that it includes the treatment of munitions identified as MEC or MPPEH.	This row was deleted from Table A4-1 because the ARARs tables were revised to remove the determinations that are "not ARARs." The commenter is correct, live munitions would be detonated and that constitutes treatment.	Agreed.	Noted.
163	Table A4-1, On-Site Waste Generation row, Comments column	A-42, pg125	"Not an ARAR. The Navy may generate waste in excavating munitions-related material. The Navy will determine if the waste or munitions-related material is hazardous at the time it is generated." EPA does not agree with the Navy's determination; the Navy's explanation simply restates the point of the citations, and makes clear that the provisions are ARARs.	Upon further consideration, the Navy has identified 22 C.C.R § 66262.11 as a potential ARAR because waste, including waste soil and munitions would be generated. The typographical error in the citations were corrected to 22 C.C.R. § 66262.11. The objective of the statement in the comments column is to show that the determination would be made "*at the time it is generated*;" not now when the Navy cannot make the determination.	Agreed.	Noted.
164	Table A4-1, On-Site Waste Generation row, Citations column	A-42, pg125	"§66264.13(a)(b)" Please consider whether the citation to .13 should be limited to .13(a)(1). Also, please explain the basis for including subsection (b) as an ARAR given that it concerns the requirements for a generator to develop and follow a written waste analysis plan.	The Navy has deleted 22 C.C.R. § 66264.13(b) as a potential ARAR.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
165	Table A4-1, Site Closure row, Comments column	A-42, pg125	"Not an ARAR. No land-based disposal units are planned for waste management." Please explain the Navy's analysis that the cited provision is not an ARAR given that it is applicable to "the owners and operators of all hazardous waste management facilities" (subsection .110), not just to land-based disposal units.	Upon further consideration, the Navy has determined that the closure standard contained in 22 C.C.R. § 66264.111(a) and (b) is a potential ARAR for closing the temporary staging pile in Alternative 3. Please see the response to comment number #166.	Given that the Navy has reconsidered its position and determined that staging piles will be used as part of Alternative 3, and that the staging pile regs have closure requirements, are the state regs more stringent than the staging pile regs so as to qualify as an ARAR? Please explain the Navy's analysis.	The State identified 22 C.C.R. § 66264.111(a) and (b) as potential State ARARs for site closure. However, because these regulations are part of the RCRA authorized program, the Navy has identified them as potential federal ARARs. The other closure requirements identified by the State are also part of the RCRA authorized program [e.g., 22 C.C.R. §§ 66264.114, 66264.251-.256 and 66264.553(b), (d), (e), and (f)]. However, the Navy determined that the closure requirements contained in the staging pile regulations were the most appropriate for the Navy's activities under Alternatives 3 and 4. So, the Navy identified 22 C.C.R. § 66264.111(a) and (b) because these are the regulations in the California RCRA authorized program that are analogous to the regulations referenced in 40 C.F.R. § 264.554(k) for closure of a staging pile located in an uncontaminated area. No change made in response to comment.
166	Table A4-1, Waste Piles row, Comments column	A-43, pg126	"Not an ARAR. Wastes are not planned to be managed as waste piles as part of this action." Please explain why the Navy does not cite to either waste pile or staging pile regulations as ARARs given that Alternative 3 describes the placement of berm soil removed in 6" lifts onto a plastic sheeting prior to a determination as to whether or not it is contaminated above levels of concern.	Upon further consideration, the Navy has determined that the temporary staging pile regulations at 40 CFR § 264.554(a), (b), (d), (e), (g), (h), and (k) are potential ARARs for managing soil from the excavation of the berm while it is being screened for MPPEH. The comment column has been revised as follows: "The Navy would construct a temporary staging pile to store excavated soil from the berm in order to determine if MPPEH is present. The soil to be stockpiled is not expected to be contaminated and once the screening for MPPEH is completed, the soil will be returned to the area (and is not waste), so these requirements are identified as relevant and appropriate. If hot spot soil excavation is necessary based on contamination, the waste soil would be managed in containers, not the temporary staging pile."	"…40 CFR § 264.554(a), (b), (d), (e), (g), (h), and (k) are potential ARARs…" Please correct the reference to the CFR in the "Citation" column by deleting the "E" in "CFRE." "The soil to be stockpiled is not expected to be contaminated and once the screening for MPPEH is completed, the soil will be returned to the area (and is not waste), so these requirements are identified as relevant and appropriate." Please explain the process by which the Navy will ensure that the berm soil stockpiled in the staging pile is not contaminated before it is placed back in the area of the berm. Although the RTC revise text notes that the Navy does not expect stockpiled soil to be contaminated, how will it ensure that this is the case. Also, please explain how would the Navy deal with a situation in which MPPEH is not located in a 6" =/-soil lift prior to the soil's placement in the staging pile, however remote such a possibility is.	The typo has been corrected. The RI and SI found few detected concentrations of explosives in soil and no concentrations of MC exceeding human health or ecological screening criteria. The berm was constructed in the 1960s, after explosive ordnance disposal operations stopped across a natural drainage as a way to capture rainwater for cattle and was not associated with explosive ordnance disposal operations. To remove and clear the berm, the Navy would complete detector-aided surface clearance in 6-inch lifts and would sample the soil beneath a munitions item. By the time the soil is placed on the staging pile, it will have been cleared and considered free of MPPEH/MEC, MD, and MC. In the extremely unlikely event that MPPEH is placed on the staging pile, the Navy would evaluate it and address it like all other MPPEH items that may be found at the Bermed Area. No change made in response to comment.
167	Table A4-1, Closure of Staging Pile row, Comments column	A-43, pg126	"Not an ARAR. Wastes are not planned to be managed as waste piles as part of this action." See comment on Waste Piles one row above.	Upon further consideration, the Navy has identified 22 C.C.R § 66264.258(a) as a potential ARAR for closing the temporary staging pile. Please see the response to comment #166.	Please explain why the Navy cites to a waste pile closure requirement given that it has determined that a staging pile is a potential element of remedy Alternative 3, the staging pile regs specify their own closure requirements, and the waste pile regs are for the storage of "hazardous wastes."	Please see the response to comment #165. The federal RCRA staging pile regulations cite 40 C.F.R. § 264.258(a) as a requirement for the closure of a staging pile. So, the Navy cited the analogous California RCRA provision at 22 C.C.R. § 66264.258(a).

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated October 22, 2021 *(continued)*					**Comments provided by Yvonne Fong, dated July 18, 2022**	
168	Table A4-1, Temporary Unit row, Comments column	A-43, pg126	"Not an ARAR. Wastes are not planned to be managed as waste piles as part of this action." See comment on Water Piles two rows above.	This row was deleted from Table A4-1 because the ARARs tables were revised to remove the determinations that are "not ARARs." Please see the response to comment #166.	Agreed.	Noted.
169	Table A4-1, Construction and land disturbance row, Comments column	A-43, pg126	"Pursuant to CERCLA Section 121 (e) (42 USC section 9621 [e]), on-site response actions are exempt from permit requirements, including an NPDES Permit. The State of California's General Construction Storm Water Permit is such a permit. Although not an ARAR in itself, Navy will implement the substantive provisions of this permit to comply with federal CWA ARARs and state water quality ARARs for discharge to surface water. The Navy will implement BMPs and prepare a CERCLA Storm Water Plan which will include monitoring, sampling and analysis, and numeric action levels as required under the state general storm water permit." Please designate the SWRCB Order as amended an ARAR as is done, e.g., in the first ARARs table.	Upon further consideration, the Navy has removed this from Table A4-1 because the removal action activities will affect less than one acre and the nearest surface water body is almost 2,000 feet away. During removal action planning, the Navy will review the specifics of the action to determine if there could be a discharge to the seasonal pond, and if so, will implement stormwater controls. Please see response to comment #154.	The Navy's response is confusing. In RTC 156, the Navy states that the State Water Board's general permit for storm water and construction is inapplicable because the BA action is limited to less than 1 acre, the threshold for applicability for the general order. Here, however, the Navy states that the general order is not an ARAR because there is unlikely to be any impact on a seasonal pond some 2000' away from the site, and references RTC 154. But in the case of RTC 154, the Navy included the citation at issue as an ARAR. Please explain why, assuming the general order in question does not include an acreage threshold, the logic of RTC 154 does not apply here too.	As explained in the response to comment #154, the Navy acceptance of California Fish and Game Code § 5650(a)(6) reflects a compromise reached between the Navy and CDFW during development of the ROD, which the Navy carried forward into this EE/CA. The Navy thinks it is highly unlikely that a discharge would occur from removal activities that take place in the summer when the pond, which is almost 2,000 feet away, is dry; however, the Navy agreed to look at the specifics of construction actions and locations of the actions in Alternatives 3 and 4 before making a final determination. As a general matter, the Navy knows that Alternatives 3 and 4 do not meet the threshold requirement of 1 acre for implementation of stormwater controls. No change made in response to comment.
170	Table A-2, Periodic Costs Section, Source/Notes column	B-3, pg135	Adjust the row spacing to ensure text in this column is legible in each of the various tables in the Cost Estimate.	Spacing revised for legibility	Agreed.	Noted.
171	Table A-4, Subsurface Anomaly Removal row, Source/Notes column	B-5, pg137	"…12 staff and 1" Adjust the row spacing to ensure text in this column is legible in each of the various tables in the Cost Estimate.	Spacing revised for legibility	Agreed.	Noted.
172	Table A-4 Site Restoration row, Source/Notes column	B-5, pg137	"…1 piece of equipment and 2" Adjust the row spacing to ensure text in this column is legible in each of the various tables in the Cost Estimate	Spacing revised for legibility	Agreed.	Noted.
173	ES, 1st para	ES-1, pg5	"…Section 300.415(b)(4)(i)." Check cite	The Navy has verified that the citation is correct.	Agreed.	Noted.
174	ES.3, 1st para 2nd bullet point	ES-4, pg8	It is not clear what "construction" refers to here.	Text has been revised to state "…measures (construction support, periodic inspections…."	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated November 24, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
175	App A, Table of Contents, Section A2, A2.1.1	Table of Contents A-1, p78	It isn't clear why the discussion about the discovery of the Bermed Area is included as part of the ARARs table. Please explain why the text is included and consider removing it as the discussion already is included in Section 2.1 of the EE/CA (per the text itself), or at least tailoring it more carefully to information that may be helpful to understanding the Navy's ARAR analysis.	The table of contents will be redone to only include headers from the document.	The RTC is not responsive to the comment in that it does not address the substantive point. Please revise the RTC to respond to the substantive point of the comment and to state whether or not revisions were made to address it, e.g., by pointing to RTC 180.	The comment referred to text contained in the table of contents. The text was mistakenly marked as being part of the section header. So, the Navy indicated in its response that the markings for the header were corrected. As is stated in the response to comment #180, most of this text has been removed from Section A.2.
176	App A, A1.1, 4th para, 2nd sentence	A-2, p85	Should be "address."	The subject text was revised as follows: "…the requirements ~~addressed~~ address problems or…"	Agreed.	Noted.
177	App A, A1.1, 1st para, 1st sentence	A-3, p86	Should be "is."	The subject text was revised as follows: "…whether the requirement ~~was~~ is well suited…"	Agreed.	Noted.
178	App A, A1.1, 1st para, last sentence	A-4, p87	"Off-site actions (i.e., off-site disposal) are required to comply with applicable requirements only and are not required to comply with relevant and appropriate requirements identified as ARARs for on-site actions." As the Navy chooses to distinguish between the status of requirements for on-site an off-site cleanup related activities, it should also note that requirements for off-site activities may not be waived, as ARARs may.	The following text has been added to the end of the paragraph: "Regulatory requirements that apply to ~~off-site~~ offsite actions are not ARARs. ~~Off-site~~ Offsite actions (i.e., ~~off-site~~ offsite disposal) are required to comply with applicable requirements only and are not required to comply with relevant and appropriate requirements identified as ARARs for ~~on-site~~ onsite actions. However, requirements for offsite activities may not be waived."	Agreed.	Noted.
179	App A, A1.2.1, 1st bullet	A-5, p88	"Prevent direct contact with MPPEH that may be present within and/or under the berm to reduce or mitigate the risk associated with potential exposure to incidental munitions-related items." This statement of the RAO is not the same as the statement in the ES or Section 3.1. Please ensure that all statements of the RAO are the same throughout the document.	The RAO in Appendix A, Section A.1.2.1 was revised to match the RAO in Section 3.1 of the main text of the EE/CA as follows: "~~Prevent direct contact with MPPEH that may be present within~~ Protect human health and~~/or under~~ the ~~berm to reduce or mitigate~~ mitigate environment by reducing/mitigating the risk ~~associated~~ of an uncontrolled encounter with potential ~~exposure to incidental~~ munitions-related items and explosive hazards by unqualified/untrained personnel during ground disturbing activities associated with current and future site use."	The revision in the text corresponds to the statement of the RAO in Section 3.1, but the RTC should be revised to delete the term "mitigate" in the phrase "the mitigate environment."	The word "mitigate" was incorrectly left in the original RTC table. The typo is not present in Sections 3.1 and A.1.2.1. In both locations, the bullet states: • "Protect human health and the environment by reducing/mitigating the risk of an uncontrolled encounter with potential munitions-related items and explosive hazards by unqualified/untrained personnel during ground-disturbing activities associated with current and future site use." No additional changes have been made per original comment.
180	App A, A2.1, 2nd para through next page	A-12 to A-13, p95 to p96	As noted above on the ToC to the ARARs Attachment, it isn't clear why all of this historical information is repeated here. See comment on ToC p. A-i about the inclusion of this text.	Appendix A, Section A.2.1 was revised to remove most of the historical information.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated November 24, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
181	App A, A2.1.1, 1st para, last sentence	A-13, pg96	"There are no chemical-specific ARARs for munitions-related material at the Bermed Area that establish a cleanup standard." This statement does not reflect the scope of Alternative 3, which includes at a minimum soil sampling for metals (Section 4.2.3.4) for which the Navy must identify screening levels to determine whether the metal contaminants found, if any, pose a risk to human health or the environment. Please revise the text to reflect these comments.	The statement has been deleted from Section A.2.1.1. However, the screening levels for munitions constituents that may be collocated with munitions items are not identified as potential chemical-specific ARARs because screening levels are not promulgated.	The deletion of the text identified in the original comment is acceptable, but the EE/CA should reference the soil screening levels as TBCs.	The project screening levels will be identified in the removal action design documents. The Navy does not consider identification of generic screening levels as TBCs in the EE/CA appropriate or useful. No change made in response to comment.
182	App A, A2.1.1, 3rd para, last sentence	A-13, pg96	"For any material that is disposed of as waste, RCRA waste disposal requirements are potential ARARs." This statement appears to be inconsistent with the Navy's description of Alternative 3, which involves the off-site disposal of waste such that RCRA's waste disposal requirements would be applicable, but they would not be ARARs as the Navy notes earlier in Appendix A. Please explain the meaning of this statement, and/or revise it to reflect this comment.	The statement has been deleted from Section A.2.1.1.	Agreed.	Noted.
183	App A, A2.1., 4th para, 1st sentence	A-13, pg96	"…off-site disposal…" It isn't just "off-site disposal" for which waste identification is necessary; indeed, if off-site disposal were the only issue, it would not be appropriate to cite the provisions as ARARs, as for off-site actions the requirements may not be waived.	The statement has been deleted from Section A.2.1.1.	Agreed.	Noted.
184	App A, A2.1., 4th para, last sentence	A-13, pg96	"…potential federal and state chemical-specific ARARs…" Please ARARs tables for comments on specific citations.	Noted.	Agreed.	Noted.
185	App A, A2.2.2.2, , 3rd para, 1st sentence	A-18, p101	"…to prevent direct contact with MPPEH/MEC that may be present within and under the subsurface to reduce or mitigate the explosive hazard associated with potential exposure to incidental munitions-related items, these…" This statement of objective does not correspond to the statement of the RAO in the ES and Section 3.1. Please ensure that this statement is consistent with the other statements throughout the BA EE/CA. Please also consider whether it would be appropriate to align the RAOs for the BA and RDA EE/CAs.	The text was revised in Appendix A, Section A.1.2.1 to match the RAO in Section 3.1 of the main text of the EE/CA. Please see response to comment #179.	Agreed.	Noted.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated November 24, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
186	App A, A3.2.4.1.2, 2nd para, last sentence	A-24, pg107	"…Navy will develop appropriate measures to protect the migratory birds." Why no reference to appropriate measures per BO as in RDA EE/CA at pdf p. 110, last sentence on page.	The Biological Opinion does not address migratory birds. None of the alternatives are expected to adversely impact migratory birds. The first measure for the protection of migratory birds is the ecological survey to determine if any are present and would be affected by the removal action. Other measures, if necessary, would include measures the Navy has implemented for the protection of migratory birds in previous CERCLA actions.	Agreed.	Noted.
187	App A, A3.2.4.2.1, 1st para, 1st sentence	A-24, pg107	"…Section §§1908, 3511, and 2080 is…" Please correct grammar: "Sections" "are".	The subject text was revised as follows: "~~F.G.C. Section~~ California Fish and Game Code §§~~1908,~~ 2080 and 3511, and ~~2080 is~~ are not applicable …"	Agreed.	Noted.
188	App A, A3.2.4.2.4, 2nd para, 1st and 2nd sentence	A-29, pg112	"…therefore, it is not applicable or relevant and appropriate. The Navy will determine if the earthmoving activities could result in the placement of prohibited materials in the waters of the state in the removal action documents." These statements are inconsistent: if it isn't an ARAR, then why is the Navy committing to evaluate the chance of discharge. Also, the ARARs determination must be made by the time of the action memo, not afterwards.	Please see the response to comment #154.	Agreed.	Noted.
189	App A, A3.2.4.2.5, 1st para, last sentence	A-29, pg112	"Because this action will occur in summer of 2022 the likelihood of water within the pond is minimal, no TBC requirement is necessary for this remedial action." Clarify whether the policy only applies to saturated wetlands, or may also cover intermittent wetlands.	Please see the response to comment #154.	Although the Navy has reached agreement with CDFW on including Fish & Game Code Section 5650(a)(6) as an ARAR, the RTC is not responsive to the comment because it does not address the question posed by the comment. In light of the Navy-CDFW agreement, however, EPA will accept the Navy's response for purposes of this RTC.	The California Fish and Game Commission policy (Department of Fish and Game Recommended Wetland Definition, Mitigation Strategies, and Habitat Value Assessment Methodology) uses the US Fish and Wildlife Service wetland definition which utilizes hydric soil, saturation or inundation, and vegetative criteria and requirement the presence of at least one of these criteria in order to classify an area as a wetland. The policy does not seem to hinge on saturated versus intermittent in its definition of a wetland.
190	App A, A4, 1st para, 2nd sentence	A-36, pg119	"…anomaly reacquisition and removal." Please add a reference to treatment as well per the description of the alternative in the main body of the EE/CA.	Text has been revised as follows: "…Alternative 3 entails ~~anomaly reacquisition, and~~ berm removal and~~. Detailed~~ MPPEH detection, removal, and destruction. " All text that states Anomaly Reacquisition and Removal has been revised to state "Berm removal and MPPEH detection, and Removal, and Destruction"	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated November 24, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
191	App A, A4, 5th para	A-36, pg119	This discussion is much less extensive than in the RDA EE/CA (at pdf p. 123 2nd Para from bottom). Please explain the reason for the differential, and consider providing equivalent treatment.	Section A.4 was revised in both the Bermed Area Appendix A and RDA Appendix A. Alternative specific information was moved down into the sections for that particular alternative. Then, the descriptions of the alternatives contained in Sections A.4.2 and A.4.3 contain references to the sections in the main text of the EE/CA that contain more detailed descriptions of the alternatives. This was done to reduce the possibility of inconsistency in the descriptions of the alternatives.	Agreed.	Noted.
192	App A, A4, 7th para, 1st sentence	A-36, pg119	"…compromised MEC…" This description/limitation is inconsistent with the text of the TCRA. Please make consistent.	Please see the response to comment #191.	Agreed.	Noted.
193	App A, A4, 8th para	A-36, pg119	"This Site would be graded based on the existing grade." Clarify when this would happen by adding at beginning: "Following all field activities" (per RDA EE/CA).	Please see the response to comment #191.	Agreed.	Noted.
194	App A, A4.1, 1st para, last sentence	A-37, pg120	"…action-specific ARARs…" What about chemical-specific and location-specific ARARs? EPA ROD Guidance suggests in the exemplar language re the no-action alternative, that chem-specific ARARs should be identified as not being achieved.	For the Bermed Area, the potential chemical-specific ARARs are identified for the characterization of waste (not as cleanup goals) and the potential location-specific ARARs are triggered by the activities to be completed as part of Alternatives 2 or 3. So there are no potential chemical- or location-specific ARARs that are not being met within the scope of this removal action. No change was made to the text.	The Navy's analysis that a consideration of ARARs is not appropriate in the context of the "no-action" alternative is not consistent with EPA's ROD guidance, (see e.g., Highlight 6-24) and its reference to CERCLA Section 121 is inapposite (while true that a "no-action" decision does not have to achieve ARARS, the consideration of ARARS for purposes of the individual and comparative analyses of alternatives, compliance with ARARs should be addressed per the ROD guidance).	The Navy has revised the discussion under Section A.4.1 as follows: "There is no need to identify <u>action-specific</u> ARARs for the no action alternative because ARARs apply to "any removal or remedial action conducted entirely on-site" and "no action" is not a removal or remedial action ~~(CERCLA § 121[e], 42 U.S.C. § 9621[e]). CERCLA § 121 (42 U.S.C. § 9621) cleanup standards for selection of a Superfund remedy, including the requirement to meet ARARs, are not triggered by the no action alternative~~ (EPA, 1991b). Therefore, a discussion of ~~compliance with~~ action-specific ARARs is not appropriate for this alternative." The Navy notes that the EPA ROD guidance in Highlight 6-24 states, "All alternatives, except the no action alternative, had common ARARs associated with the construction of a cap *and drinking water standards for ground water* (emphasis added)." This indicates that the no action alternative did not have chemical-specific ARARs. However, the Navy agrees that compliance with ARARs should be addressed in the comparative analysis of alternatives in Section 5.0. The following statement was added to the introduction to Section 5.0: "<u>Appendix A presents the detailed ARARs analysis for each alternative.</u>" Additionally, statements were added in Section 5.1, "Effectiveness," indicating that remedial alternatives 2 through 4 meet the identified ARARs.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Yvonne Fong, dated November 24, 2021					**Comments provided by Yvonne Fong, dated July 18, 2022**	
195	App A, A4.3, 1st para, 2nd sentence	A-39, pg122	"Because the non-time-critical removal action (NTCRA) project is being conducted on a Base Realignment and Closure site, DoD and Navy publications that address the handling, storage, transportation, clearance, and disposal requirements for OEW can be used as guidance for the removal action." Please explain the meaning of this statement.	The text has been removed.	Agreed.	Noted.
					Comments provided by Eric Esler, dated July 18, 2022	
196	Table ES-1, Overall Protection row, 2—LUCs column	ES-8			"Not protective if future land use includes residential use." Please explain why the newly added text stating that a LUC only remedy would not be protective if there is residential use.	The subject sentence has been removed.
197	2.2.6, 1st para	2-12			"…concluded that all ~~detectable~~ explosive…" It isn't clear why the Navy deleted the term "detectable," but EPA requests that it not be deleted, consistent with other comments on the RTCs requesting that it be added to the text in various places to clarify that the RI's conclusion only concerns munitions detectable within the current technological limits of the equipment.	The word "detectable" has been added back to the subject sentence and retained throughout.
198	2.2.6, 2nd para	2-12			"The evaluation of remedial alternatives was based on long-term…" This text is misleading: the evaluation of remedial alternatives in an FS, PP and ROD is based on 9 criteria: the 2 threshold criteria; 5 primary balancing criteria; and 2 modifying criteria. Please revise the text to state something along the lines of: "The remedial alternatives were evaluated using the five primary balancing criteria to weight the major trade-offs among them."	Change made as requested.
199	3.2, 1st para	3-2			"…of compromised MMPPEH…" The addition of this qualifying term is inconsistent with the Navy's commitment to sample soil in the aera of munitions regardless of evidence of a release (which, it would seem, could be compromised munitions). Please delete the term "compromised."	The subject text was revised as requested.
200	4.2, 2nd para	4-2			"… to select the…." No alternative is "selected" in the EE/CA; this is the language of the Action Memo. Please replace "selected" with "identify."	The subject text was revised as requested.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
201	4.2.2.3, 2nd para	4-3			"ECs would include…" Please explain the inclusion of UXO support as an example of an "EC," as it is related to a land use restriction (an IC) that prohibits use subject to specified conditions such as the provision of UXO support during ground disturbing activities.	The subject sentence was revised as follows: "…maintaining warning signs. ~~and~~ ICs would include a requirement that UXO personnel…"
202	4.2.2.3, 2nd para	4-3			"…managed by the City of Concord…" See EPA comment on RTCs 48 and 63, and revise the text as appropriate to ensure accuracy and consistency throughout the EE/CA.	The last sentence was revised to be consistent with previous responses to comments as follows: "Access to the Bermed Area is via the Bailey Road gate, which is owned, operated, and guarded by EBRPD. Public access to the Bermed Area is prevented by this gate, and access by EBRPD is pursuant to an agreement with the Navy that is enforced by the Navy caretaker
203	4.2.2.6.	4-5			See EPA comment on RTC 19. Here the reference to UU/UE appears appropriate because the statement is that UU/UE is not achieved at the Bermed Area.	Please see the response to comment #19. UU/UE has been removed globally from the document.
204	4.2.3.1, 1st para	4-6			"…combined into a NTCRA Work Plan…" "an"?	Verified that "an' is grammatically correct. The article is based on how the acronym is read out loud. Either each letter individually or as one word. In this case, NTCRA is typically one word and not a N-T-C-R-A. No change made in response to comment.
205	4.2.3.1, 2nd para	4-6			"Planning and execution would take into consideration green remediation metrics in accordance with EPA's "Methodology for Understanding and Reducing a Project's Environmental Footprint" (EPA, 2012)." While acceptable to note this point here, it should still be considered in the context of short-term effects, so that there is a clear basis for their consideration in the work "planning and execution" context.	The following text was added to Section 4.2.5.1, Work Plans/Reporting: "Sections 4.3.1 and 4.4 present additional information on the evaluation of green remediation metrics for a removal action." The following text was added to the bullet (Short-Term Effectiveness) in Section 4.3.1: "Environmental impacts are provided in this EE/CA for overall consideration of the NTCRA alternatives. The potential impacts to the environment that could occur during implementation of the alternatives were considered and include land and species impacts, power and water consumption, use of natural resources, air emissions, and production of waste materials (Appendix C)." Also, please see the response to comment #109 for additional text added to Section 4.4, Individual Analysis of Alternatives.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
206	4.2.3.1, 3rd para	4-6			"…completed, an After Action Report (AAR)…" "After-Action"?	Per NOSSA Instruction 8020.15E, including the definition for AAR in the instruction's acronym list, after action is not hyphenated. No change has been made in response to this comment.
207	4.2.3.3, 1st para	4-7			"…a 100 percent post-removal…" Please clarify what the phrase "100 percent" means in the context of a "post-removal geophysical survey."	The subject text was revised as follows: "…a 100 percent post-removal verification geophysical survey (i.e., over 100 percent of the berm footprint) would be performed using either a man-portable EM61…
208	4.2.3.3, 4th para	4-8			"Excavated soil would be used as backfill to the excavation." This text points to the issue of MC soil contamination and the interface between the munitions clearance/berm removal process and the MC soil sampling process. Please clarify in appropriate places (it could be in more than one section, or as RTC 102 states, it could involve a "forward reference") to the practical relationship between these elements of Alternative 3. The Navy most definitely does not want to use contaminated soil for backfill.	Section 4.2.5.2 was revised as follows: "If a munitions item is identified during subsurface clearance activities, soil from a 3-foot by 3-foot area centered on the item, including any soil above the munitions item and down to 1 foot below the munitions item, would be hand excavated and stockpiled separately pending laboratory analysis (see Section 4.2.5.5). At that point, the soil would be considered free of MPPEH/MEC and MD; however, determination of MC contamination would be pending receipt of laboratory results. Following each 6-inch lift, the heavy equipment operator would deposit the cleared excavated soil in a specified location on top of 6-mm reinforced polyfilm ~~visqueen~~ plastic sheeting. At that point, the soil would be considered free of MPPEH/MEC, ~~and~~ MD, and MC. Excavations would be backfilled with clean excavated soil (i.e., no munitions items found in the soil or laboratory results indicate MC concentrations are less the project screening levels established in the SAP (see Section 4.2.5.1), and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes." The EE/CA has been globally revised to refer to "clean" excavated soil to be used as backfill, with references back to Section 4.2.5.2.
209	4.2.3.5	4-9			"4.2.3.5 Soil Sampling" Please clarify here and elsewhere, as appropriate (potentially including a "forward reference" in other sections), the practical relationship between the munitions clearance/berm removal processes and soil sampling process.	Please see the response to comment #108.
210	4.4, 1st bullet	4-11			"…protection of public health…" Please replace with "human."	The subject text was revised as requested.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
211	4.4, 1st bullet	4-11			"…short-term or long-term effects because…" Please delete the reference to "long-term effects" as they are not part of the "short-term effectiveness" criterion (and "long-term effectiveness" addresses different considerations- "the magnitude of residual risk remaining after implementation of the alternative" and "the adequacy and reliability of controls established by an alternative to maintain reliable protection of human health and the environment over time.")	The subject text was revised as requested.
212	4.4, 2nd bullet	4-11			"LUCs would limit access to the site;…" Alternative 2 does not just limit access, it also involves use restrictions (e.g., no soil disturbing activities without UXO support). Please revise the text to encompass all aspects of Alternative 2.	Please see response to Comment #157. The subject text was revised as follows: "LUCs would limit potential exposure to MPPEH/MEC through prohibitions on ground disturbance (documented in licenses, leases, and base operations documents) except when UXO construction support and military munitions recognition and safety training for construction personnel are provided. LUCs would be enforced by the Navy until a Final ROD is signed. However, protection of human health would depend on the reliability of implementation of these controls."
213	4.4, 2nd bullet	4-12			"…with some location- and action-specific ARARs." As the EE/CA's text on ARARs notes, ARARs are site-, chemical-, location- and action-specific; thus, it is unclear why the LUC's-only alternative would not satisfy location-specific ARARs which typically prohibit or restrict actions within specified areas, or action-specific ARARs which for a LUCs-only remedy would be limited to actions related to the selection and implementation of LUCs. Please revise the text to reflect these comments.	The subject text was revised to state that Alternative 2 complies with the identified ARARs.
214	4.4, 2nd bullet	4-12			"ECs include installation of one sign to be posted every 50 linear feet of the berm perimeter." As noted in EPA comment on RTC 92, costs should also include the costs for monitoring and maintaining the fencing around the berm within the Bermed Area.	Please see response to Comment #157. Section 4.2.2 was revised to eliminate discussion of fencing and signage.
215	4.4, 3rd bullet	4-12			"…comply with ARARs through planning." Please clarify what the phrase "with planning" means, and revise the text to indicate how the alternative would comply with ARARs.	The subject text was revised as follows: "Implementation of this alternative would comply with the ARARs (see Table 4-2)."

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
216	4.4, 3rd bullet	4-13			"…roll-off containers…" This reference appears inconsistent with earlier references to the placement of demilitarized material in 55-gallon drums. Please modify as appropriate to ensure consistency in the description of the remedy.	The subject text was revised to 55-gallon drums.
217	4.4, 3rd bullet	4-13			"Excavations would be backfilled with excavated soil…" As noted elsewhere, the issue of MC contamination of soil needs to addressed so that it is clear soil sampling and clearance occurs prior to the backfilling of excavated areas with "excavated soil."	Please see the response to comment #208.
218	4.4, 3rd bullet	4-13			"…but several factors would need to be addressed with regard to excavation and destruction." Please clarify what these "several factors" are.	The text was revised to simply state that Alternative 3 is administratively feasible. The text regarding "several factors" was removed. No significant impacts on implementability relating to administrative criteria are anticipated.
219	4.4, 3rd bullet	4-13			"The total present-worth cost for Variation 3A – DGM is $524,700 and Variation 3B – AGC in dynamic mode is $609,200 (Appendix B). The estimated total cost for Variation 3A – DGM is $249,100 (ranges from $367,290 to $787,050). The estimated cost for Variation 3B – AGC in dynamic mode is $609,200 (ranges from $426,440 to $913,800)." Please clarify what the "total present-worth cost" and "total cost" estimates represent and how they relate one to the other.	The following text was added to Section 4.3.3, Cost: "Appendix B presents total capital cost, total periodic cost (30 year period), total cost (i.e., total capital cost + total periodic cost), and present-value cost (i.e., cost if all work [capital + periodic] were performed today) for each alternative." Present-worth was revised to present-value throughout the EE/CA.
220	4.4, 3rd bullet	4-13			"Following the post-removal survey, the area would be restored to previous conditions by backfilling any excavations with excavated soil, and the finished surface would be reasonably smooth, compacted, and free from irregular surface changes. The disturbed areas would be reseeded using a seed mix composed of plants native to the area if needed." The highlighted text appears duplicative of text above in the description of Alternative 3.	The subject text was removed as requested.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
221	4.4, 2nd para	4-14			"As part of the NTCRA planning… Please incorporate a discussion of efforts to address short-term environmental effects in the discussion of the "short-term effectiveness" criterion.	The following text was added to the Short-term Effectiveness bullet in Section 4.3.1: "Environmental impacts are provided in this EE/CA for overall consideration of the NTCRA alternatives. The potential impacts to the environment that could occur during implementation of the alternatives were considered and include land and species impacts, power and water consumption, use of natural resources, air emissions, and production of waste materials (Appendix C)."
222	5.1	5-1			"…protection of public health…" Please replace with "human."	The subject text was revised as requested.
223	5.3, 3rd para	5-2			"Alternatives 3A and 3B… The reference to NFRA is not acceptable; see EPA comment on RTC 19 and revise the text in accordance with the comment. In addition the discussion of effectiveness here is not appropriate for the cost analysis; it belongs in the discussion about effectiveness. Please revise the text to focus on the analysis of costs.	Please see the response to comment #19. Section 5.3 was revised to address costs only.
224	Table 4-1 1st row, 4th column, 3rd bullet	1 of 4			"…toxicity…" This term was removed in section 5.1 of the comparative analysis. Please make the table text and narrative text consistent and, as requested in a comment on RTC 122, explain why the Navy either retains or deletes the term.	The term "toxicity" has been added back in Table 4-1, indicated location, to be consistent with other text revisions.
225	Table 4-1 2nd row, 3rd column	1 of 4			"Property deed would limit excavation, specify requirements for excavation, and/or limit future site use" What about a state land use covenant?	Please see response to Comment #157. Table 4-1 was revised as follows: "Internal Navy prohibition on ground disturbance (documented in licenses, leases, and base operations documents) except when ~~th deed restrictions and~~ UXO construction support and military munitions recognition and safety training for construction personnel are provided. These LUCs would be enforced by the Navy until a Final ROD is signed."

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
226	Table 4-1 2nd row, 4th column, 1st bullet	1 of 4			"…and low cost" Does this text account for UXO support which is one of the elements of the use restrictions?	Column 4 was revised to contain a single bullet, as follows: "Administrative controls (i.e., dig restrictions and safety training requirements) would be somewhat effective in meeting RAOs through restrictions on excavation activities and safety training for construction personnel, readily implementable, and low cost." UXO construction support costs for hypothetical future construction projects involving intrusive activities were not included in the cost estimate for Alternative 2. Such costs would have to be determined on a case-by-case basis based upon the exact nature of the work to be performed and, therefore, cannot be estimated at this time. The cost components included in Alternative 2 have been added to Section 4.3.3.
227	Table 4-1 2nd row, 4th column, 2nd bullet	1 of 4			"…but somewhat difficult to …" Please revise to: "hazards but, though low cost, somewhat difficult to implement in targeting distribution of notices to affected parties."	The second bullet was deleted. Please see the response to Comment #87 for the revised Alternative 2 components..
228	Table 4-1 3rd row, 3rd column	1 of 4			"Install fences around uncleared area." The EE/CA narrative text states that there already is fencing in place around the berm and that no additional fence is needed (see section 4.2.2.5). Other text also states that there is fencing in place around the berm (see, e.g., sections 2.4.3 and 4.2.2). Please ensure consistency in descriptions of the removal alternative.	Please see the response to Comment #87. No fencing will be installed under any of the remedial alternatives. There is no existing fencing at the Bermed Area. The EECA text has been updated accordingly.
229	Table 4-1 3rd row, 4th column, 1st bullet	1 of 4			"Fencing has limited effectiveness in meeting RAOs since there will be no direct control over the property…" Please clarify the highlighted text; does it mean that the integrity of the fencing cannot be ensured because the Navy won't control the property post-transfer? If so, why should that matter given that the remedy includes deed restrictions some of which concern maintenance of remedy integrity (e.g., monitoring and maintenance)?	Please see the response to Comment #87. The bullet was deleted.
230	Table 4-1 4th row, 3rd column	1 of 4			"…all MEC/MPPEH…" Please insert the term "detectable" to clarify that residual munitions may remain.	The subject text was revised as requested.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
231	Table 4-1 5th row, 3rd column	2 of 4			"…item from…" The text appears to be missing a reference; please insert after the term item, the phrase "being MPPEH or MEC".	The subject text under Alternative 4 was revised as follows: "Use AGC survey equipment in dynamic mode to identify varying electromagnetic fields in soil from multiple aspects to assign likelihood of the buried item being MEC/MPPEH based on classification algorithms."
232	Table 4-1 5th row, 4th column, 1st bullet	2 of 4			Please revise to: "Both methods are effective in identifying potential MPPEH and MEC and removing it and both are readily implementable." Please add a discussion of the differences between the methods per the Navy's 6/22/22 e-mail to EPA RPM Yvonne Fong.	The text in row 5 was revised to only address DGM. AGC is discussed in new row under Alternative 4. The two methods are equally effective, AGC is just more costly and time consuming in this situation. No change was made in response to this comment.
233	Table 4-1 5th row, 4th column, 2st bullet	2 of 4			"it is low cost by manpower intensive." Please clarify whether "manpower intensive" aspect offsets the "low cost" aspect.	The following statement was added: "The lower cost favors consolidated shots whenever possible."
234	A1.1, 1st paragraph	A-1			"…as amended, states that ~~remedial~~ response actions at CERCLA sites..." The statute refers to "remedial actions." Please revise the text to reflect this.	The text has been changed to "remedial."
235	A1.1, 1st paragraph	A-1			"…as amended, states that ~~remedial~~ response actions..." Ditto the preceding comment.	The text has been changed to "remedial."
236	A1.1, 1st paragraph	A-1			"…mandating that CERCLA ~~removal~~ remedial actions "...shall…" 40 CFR 300.415(j) refers to "removal actions." Please revise the text to reflect this.	The text has been changed to "removal."
237	A1.1, 1st paragraph	A-1			"…may be used for ~~removal~~ response actions…" Please revise to return text to original form.	The text has been changed to "removal."

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
238	A1.1	A-4			"…§ 300.5, the on-station areas that comprise…" The Navy replaced the term "on-station" with the term "on-site" in the RDA EE/CA, and further revise the RDA text to reference a figure showing the areas of contamination. It is important in discussing on-site and off-site in the context of CERCLA to remember that on-site isn't, for example, limited just to a facility's boundaries, because a "site" is anywhere that contamination has come to be located. For this reason, in cases in which contamination is located both within and beyond a facility's boundaries it is important to not use the term "site" to refer to the facility (lest such a reference incorrectly be read to suggest that the facility's boundaries define the extent of contamination). Bearing in mind these points, please explain why the Navy opted to revise the analogous RDA text, but not the Bermed Area text given that in both situations it appears that all contamination related to the respective sites is within the boundaries of the former Concord Naval Weapons Station.	The Bermed Area text was revised to more closely mirror the RDA text. There are currently no figure references in the RDA EECA Appendix A.1.1 text and therefore none are included in the Bermed Area Appendix A.1.1 text.
239	A1.2.1, 2nd para	A-5			"~~Removal~~ Response action alternatives…" Please explain why the Navy changed the term "removal" to "response," given that the action under consideration is a removal action. (In this regard, EPA notes that the RDA uses the term "removal.")	The text has been changed to "Removal."
240	A1.2.1, 2nd para	A-5			"The ~~removal~~ response action alternatives…" Ditto the preceding comment.	The text has been changed to "removal."
241	A.1.2.2, 2nd para	A-5			"…proposed response action…" In this case, the Navy did not change the term "removal" to "response" in the Bermed Area EE/CA, but it did so in the RDA EE/CA. Please revise the text here to use the term "removal."	The text has been changed to "removal."
242	A.1.2.3.1, 1st para	A-6			"…identification of response action alternatives…" Please note that technically, the "requirements" (40 CFR 300.515, "Requirements for state involvement in remedial and enforcement response"), refer to remedial actions, so the use of the term "remedial" here, as in the RDA EE/CA where it was not changed, is correct. EPA does not request the Navy to use the term remedial even though it is used in the RDA EE/CA given that the Navy uses the term in the first sentence of this paragraph (as it does in the RDA EE/CA too; the cited EPA guidance is the RI/FS guidance, which concerns the remedial process).	The text has been changed to "remedial."

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Comment #	Section #	Page #	Comment	Response	Comment	Response
243	A.1.3.2, 3rd para	A-8			"…administrative ruling for…" "rulemakeing"?	The text has been changed to "rulemaking."
244	A.1.3.2, 2nd para	A-9			Please clarify the Navy's understanding of the relationship of the screening levels for munitions constituents and the use of the TCR in determining such, and the statement that no removal action goals are being established in the EE/CA so the TCR is not used	If there are toxicity criteria for MC in the California Toxicity Criteria Rule, the Navy will consider those values in establishing project screening levels for soil samples collected from under munitions items. Since numerical removal action goals are not being set in this EE/CA, the California Toxicity Criteria Rule was not used in this EE/CA.
245	A.1.4.1, 1st para	A-9			"…(55 Fed. Reg. 8666, 8758 [1990])." Compare RDA EE/CA which revised citation to 59 Fed.Reg 47384 (1994).	The citation in the Bermed Area's Appendix A is correct. 59 Fed. Reg. 47384 (1994) contains changes made in response to the Oil Pollution Act.
246	A.1.4.1, 1st para	A-11			"…*be characteristic*…" Per RDA EE/CA, insert "a" here.	The subject text was revised as requested.
247	A.1.4.2, 1st para	A-12			"…factor (tenfold). A waste… Please explain why the BA EE/CA doesn't include the following text inserted into the DF RDA EE/CA: "There are other state requirements that may be broader in scope than federal ARARs for identifying non-RCRA wastes regulated by the state. These may be potential ARARs for wastes not covered under federal ARARs. See additional subsections of 22 C.C.R., § 66261.24."	The requested text was added to Appendix A, Section A.1.4.2.
248	A.2.2.2.1	A-17			"The State of California has not yet adopted the federal RCRA Military Munitions Rule and continues to regulate munitions items that meet the definition of "hazardous waste" under 22 C.C.R. hazardous waste regulations." This text is duplicative of text in Section A.2.2.2.2. Please consider whether it is necessary to include in both places.	Agreed. The text in Section A.2.2.2.1 was deleted.
249	A.3.1.4	A-19			A.3.1.4 Biological Resources Conclusions Ensure correct heading number here: A.3.1.1	The heading number was changed to A.3.1.1.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
250	A.3.2.4.2	A-24			"California Fish and Game Code §§ 3503.5 and 3513" Please explain the Navy's different response to the two highlighted citations in the Bermed Area EE/CA and the RDA EE/CA.	The text in the Bermed Area EE/CA has been revised to be consistent with the RDA EE/CA. Because CDFW-OSPR states that it "no longer withdraws its identification" of Fish and Game Code Sections 3503.5 and 3513, the Navy has evaluated these code sections and determined that they are not ARARs. Cal. Fish & Game Code Sections 3503.5 and 3513 are not applicable because the United States of America has not waived sovereign immunity for these State of California requirements. Pursuant to 40 C.F.R. § 300.400(g)(2) of the NCP, the Navy has determined that these requirements are not "relevant and appropriate" because they do not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and are not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP. CERCLA response actions are intended to respond to releases of hazardous substances in order to protect human health and the environment including environmental receptors. In contrast, the purpose of this State requirement is to regulate the "taking" of the species addressed by those requirements. Moreover, that purpose is achieved through the regulation of intentional conduct directed at the species as opposed to incidental "take" (or possession, etc.) of species in the course of lawful activity such as CERCLA remedial action. The focus on intentional conduct is not well-suited to the circumstances at CERCLA sites. In summary, the purposes of these State requirements and the actions that they regulate do not include responding to releases of hazardous substances. Therefore, they are not "relevant and appropriate" based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP. Although these requirements are not ARARs, the Navy will coordinate with other natural resource trustees throughout the CERCLA remedial action process. The Navy's ecological risk assessment process considers representative environmental receptors for the site and final remediation/cleanup goals that will ensure they are adequately protected from exposure to CERCLA hazardous substances that present unacceptable risk. In addition, any species that are present and are federal and/or state endangered, threatened, or fully protected species will be addressed by ARARs related to those designations.

Table 1: Responses to Comments from the US Environmental Protection Agency (EPA) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
					Comments provided by Eric Esler, dated July 18, 2022 *(continued)*	
251	A.4.3.1	A-30			"RCRA" This term appears to be "stranded" text. If so, please delete.	"RCRA" is subheading, similar to "Military Munitions Rule," in Section A.4.3.1. The following introductory sentence was added to Section A.4.3.1 for clarification: 'Federal ARARs were identified under RCRA and the Military Munitions Rule, as discussed below."
252	A.4.3.1	A-30			"OEW materials for the Bermed Area will be managed as a RCRA hazardous waste. Action-specific ARARs and TBC requirements focus primarily on the management of OEW as a reactive hazardous waste. Because the non-time-critical removal action (NTCRA) project is being conducted on a Base Realignment and Closure site, DoD and Navy publications that address the handling, storage, transportation, clearance, and disposal requirements for OEW can be used as guidance for the removal action. The following documents are not ARARs but the Navy will use them for guidance when removing OEW at the Bermed Area: U.S. Navy Manual, Naval Sea Systems Command OP-5. Ammunition and Explosives Ashore, Safety Regulations for Handling, Storing, Production, Renovation, and Shipping DoD Instruction 4145.26M. DoD Contractor's Safety Manual for Ammunition and Explosives DoD Directive 6055.9E. Explosives Safety Management and the DoD Explosives Safety Board. 19 August 2005 DoD 6055.9-STD. DoD Ammunition and Explosives Safety Standards (DoD 2008) Potential ARARs for hazardous wastes managed in accordance with the substantive requirements of the RCRA and California hazardous waste laws follow." Please explain why the Navy deleted this text here, but left it, or analogous text, in the RDA EE/CA	The corresponding text in the RDA EE/CA was removed.
253	A.1.4.1, 3rd para	A-11			The text states: "Table 1 in 22 C.C.R., § 66261.2 ~~Table 1~~ assigns hazardous waste codes beginning with the letter "D" to wastes that exhibit the characteristic of toxicity; D waste codes are limited to "characteristic" hazardous wastes." It is likely that this reference may be incorrect and that the text should reference Table I in 22 CCR 66261.24. Please confirm the citation to Section 66261.2.	The subject citation has been revised to "22 C.C.R. § 66261.2<u>4</u>."

Table 2: Responses to Comments from the Department of Toxic Substances and Control (DTSC) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021				
Comment #	**Section #**	**Page #**	**Comment**	**Response**
Comments provided by Brett Leary (DTSC, Military and Corrective Action Unit), dated September 16, 2021				
1	--	--	Regarding the sampling for MCs, if any chemical or contaminant of concern is found and is also named as an analyte in the "Toxicity Criteria Rule", then the "Toxicity Criteria Rule"; Title 22, California Code of Regulations, sections 68400.5, 69020-69022, must be applied as an "Applicable" or "Relevant and Appropriate" Requirement (ARAR) to prepare human health risk assessments and to calculate screening levels and remediation goals.	No remediation goals have been established for this site; however, the Navy will identify project screening levels in the Sampling and Analysis Plan. If MC are identified at concentrations exceeding the project screening levels, then the need for a risk assessment will be evaluated. The Navy does not accept the Toxicity Criteria Rule as a potential State ARAR. The following text, was added as Section A.1.3.2 in Appendix A: *The Navy does not accept the California Toxicity Criteria Rule (TCR) at 22 C.C.R., Division 4.5, Chapter 51, Article 2 as ARARs for purposes of risk assessments, screening levels, or remediation goals. With respect to conducting risk assessments or identifying screening levels, under CERCLA, the lead agency conducts human health risk assessments during the initial, investigative stage of the process, whereas state-based requirements that the State has identified and proposed as potential ARARs are evaluated as part of the EE/CA, with final selection of any ARARs (both federal and state) made in the Action Memorandum. Accordingly, there is no requirement to attain or to evaluate ARARs for purposes of risk assessments or screening levels.* *With respect to cleanup goals, as the EPA has explained, "[c]hemical-specific ARARs are usually health-or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may remain in, or be discharged to, the ambient environment." The EPA has further stated, "Levels or standards of control are basic performance objectives for (a) remedial action (e.g., acceptable exposure levels after the remedial action is completed)." (See NCP Preamble, Proposed Rule, 53 Fed. Reg. at 51437, 51443.) While the values referenced by the TCR for particular COPCs may potentially be "applied to site-specific conditions," they do not in themselves establish "the acceptable amount or concentration of a chemical that may remain in, or be discharged to, the ambient environment," nor do they represent "basic performance*

Table 2: Responses to Comments from the Department of Toxic Substances and Control (DTSC) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response
Comments provided by Brett Leary (DTSC, Military and Corrective Action Unit), dated September 16, 2021 (*continued*)				
1 *(cont.)*	--	--	Regarding the sampling for MCs, if any chemical or contaminant of concern is found and is also named as an analyte in the "Toxicity Criteria Rule", then the "Toxicity Criteria Rule"; Title 22, California Code of Regulations, sections 68400.5, 69020-69022, must be applied as an "Applicable" or "Relevant and Appropriate" Requirement (ARAR) to prepare human health risk assessments and to calculate screening levels and remediation goals.	*objectives for (a) remedial action (e.g., acceptable exposure levels after the remedial action is completed)."* *Moreover, it does not appear that the State itself intended the TCR values to be viewed as ARARs. As stated in the responses to comments during administrative ruling for the TCR (and in keeping with the TCR stated connection to human health risk-based remediation RGs), "[r]egarding the request to have the rule state that it is not intended to require remediation goals to be set at 1×10^{-6} incremental risk or a HQ of 1, the rule only requires that (risk-based) remediation goals be based on the toxicity criteria in accordance with § 69021. The rule does not set remediation goals at any particular point in the risk management range, and is intentionally silent on that issue to defer to the regular NCP risk-management process and the flexibility provided within that process. The rule neither requires nor prohibits risk managers from setting remediation goals at 1×10^{-6} incremental risk (or HQ of 1), or at any other point within the risk management range. The remediation goal-setting decision is made for each individual site based on site-specific facts and conditions." (See https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/07/Revised-Toxicity-Criteria-Rule-RTCs.pdf at bottom of pg. 33 of 64.)* *The Navy notes that the above response addresses only potential ARARs status and that the Navy will take into consideration the toxicity values associated with the TCR in conducting risk assessments and identifying screening levels for munitions constituents detected at the Bermed Area. No removal action goals are being set for this EE/CA, so the TCR is not being used.*

Table 2: Responses to Comments from the Department of Toxic Substances and Control (DTSC) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021				
Comment #	**Section #**	**Page #**	**Comment**	**Response**
Comments provided by Brett Leary (DTSC, Military and Corrective Action Unit), dated September 16, 2021 (*continued*)				
2	--	--	Regarding decisions of future unrestricted use/unrestricted exposure, removal of the MPPEH/MEC and MDAS in soil on-site, does not guarantee unrestricted use/unrestricted exposure for the Runway Debris Area. Land use covenants per California Civil Code §1471(a) through (d), and land use controls per California Health & Safety Code §25355.5, may still be appropriate even after the completion of Alternative 3. Any decisions for No Further Action, that is unrestricted use/unrestricted exposure, or land use controls or otherwise, should be documented appropriately.	Sections ES.4, 3.2, 5.1, 5.3, and 6.0 of the EE/CA were revised as follows: "…~~unlimited use/unrestricted exposure (UU/UE)~~ no further removal action (NFRA),…." Additionally, references to UU/UE have been removed made globally throughout the EE/CA and replaced with NFRA.
3	--	ES-4, pg8	On page 8 of 152, within bullet "Alternative 3, Berm Removal and MPPEH Detection, Removal, and Treatment" it states "Variation 3B – advanced geophysical classification [AGC]) on the footprint of the berm to confirm no anomalies remain in the subsurface…", but this is not the likely result of using AGC, which would focus the team on the removal of targets of interest while avoiding the excavation of non-explosive anomalies.	The EECA was revised to separate Alternative 3 Variation 3A and Variation 3B into separate Alternatives (i.e., Alternative 3 [DGM survey] and Alternative 4 [DGM survey]). The text for Alternative 4 was revised to state that the AGC survey would be used to confirm no "explosive anomalies" remain. Alternatives 3 and 4 both use geophysical surveys to confirm no explosive anomalies remain; however, the way this is executed is different. Under Alternative 3 (DGM survey) all detected anomalies will be removed. Under Alternative 4 (AGC survey) only target anomalies meeting the criteria of MPPEH will be intrusively investigated and removed. The following text was added to Section 4.2.4 to clarify the difference between Alternative 3 and Alternative 4: "If anomalies are found during the post-removal geophysical survey that meet the target threshold for potential munitions (as developed by a geophysicist and agreed upon by project stakeholders), they would be reacquired, intrusively investigated, and removed."

Table 2: Responses to Comments from the Department of Toxic Substances and Control (DTSC) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021				
Comment #	**Section #**	**Page #**	**Comment**	**Response**
Comments provided by Brett Leary (DTSC, Military and Corrective Action Unit), dated September 16, 2021 (*continued*)				
4	Appendix A, Table A4-1	A-37, pg120	For the suggested ARAR "On-Site Waste Generation" per 22 C.C.R. §66260.10(a) and §66260.11, the Navy determined this was not an ARAR, but the Navy's process as described, is the same as the requirements of the ARAR. The Navy generates waste excavating munitions-related material. The Navy determines if the waste or munitions-related material is hazardous at the time it is generated.	Please see the response to comment #163.
5	Appendix B, Table B-3	B-4, pg136	In Appendix B, the "Table B-3. Alternative 3A" and "Table B-3. Alternative 3B" cost summaries both estimate $88,000 for the cost to complete "Subsurface Anomaly Removal". The cost for "Subsurface Anomaly Removal" should be less for Alternative 3B because of the use of AGC.	DGM or AGC will be done as a post-removal verification after MPPEH is removed from the berm using analog detection methods and the berm has been completely removed. The $88,000 is the cost for the anomaly removal in the berm and is not related to DGM or AGC. The Alternative 3 and Alternative 4, Planning Documents Unit Cost was revised to $110,000 each.
6	--	--	The EE/CA states that a NTCRA Work Plan would be prepared that describe the field and data quality methods and procedures to be performed and would include a Sampling and Analysis Plan (SAP), a Contractor Quality Control Plan, and an Environmental Protection Plan. An Accident Prevention Plan (APP), Site Safety and Health Plan (SSHP), and Explosives Safety Submission (ESS) would be prepared under separate cover. The EE/CA does not reference the inclusion of an MR-QAPP into the NTCRA Work Plan or updating of the MEC Quality Assurance Project Plan (SSI MEC QAPP) that was prepared for the SSI (Multi-Media Environmental Compliance Group, 6 June 2019). DTSC's Engineering and Special Projects Office recommends that NTCRA Work Plan include an updated version of the SSI MEC QAPP that addresses the NTCRA scope of work and includes revised worksheets to address the potential use of AGC methodology as a possible alternative to DGM.	To help facilitate regulatory review, the Work Plan, MC SAP, and MR-QAPP will be combined into one Work Plan/SAP that covers all worksheets and sections required by all three documents. A Contractor Quality Control Plan Community Relations Plan, and Environmental Protection Plan will be included as appendices to the combined Work Plan/SAP. If AGC is not the preferred variation, it will not be included in the Work Plan/SAP. Section 4.2.3.1 has been revised to state that a combined Work Plan/SAP would be prepared as follows: "Prior to excavation activities, a Work Plan, MC SAP, and Munitions Response Quality Assurance Project Plan would be combined into a NTCRA Work Plan/ ~~would be prepared~~ SAP to describe the goals, methods, and procedures for the NTCRA activities that the three documents would have required. The combined NTCRA Work Plan/SAP would describe the field and data quality methods and procedures to be performed and would include ~~a Sampling and Analysis Plan (SAP)~~ the following appendices: a Contractor Quality Control Plan, Community Relations Plan, and an Environmental Protection Plan."

Table 3: Responses to Comments from the San Francisco Bay Regional Water Quality Control Board on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021				
Comment #	**Section #**	**Page #**	**Comment**	**Response**
Comments provided by Max Shahbazian (San Francisco Bay Regional Water Quality Control Board), dated September 8, 2021				
1	--	--	No comments-concurs with Draft EE/CA	Comment noted; Thank you.

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021					**Comments provided by Tami LaBonty, dated June 29, 2022**	
1	3.1	3-1, pg36	The text states, "The overall goal of the NTCRA [Non-Time Critical Removal Action] is to reduce hazards posed to humans from MPPEH/MEC remaining in soil within and beneath the Berm." Please revise the text to state, "The overall goal of the NTCRA is to reduce hazards posed to humans and the environment from MPPEH/MEC remaining in soil within and beneath the Berm" to be consistent with the RAO which states, "Protect human health and the environment…"	Section 3.1 was revised as follows: "The overall goal of the NTCRA is to reduce hazards posed to ~~humans~~ human health and the environment from munitions-related items and explosive hazards (i.e., MPPEH/MEC) remaining in soil within and beneath the berm."	Agreed.	Noted.
2	4.2.3.6 Appendix A ARARs Evaluation, A3.2.4.1.1.1; A3.2.4.1.1.2; and A3.2.4.1.1.3	4-7, pg46 A-26, pg109 A-26, pg109 A-27, pg110	The text states, "A USFWS [U.S. Fish and Wildlife Service]-qualified biologist would be present during all ground-disturbing field activities." Please revise the text to state, "A USFWS and CDFW-OSPR qualified biologist would be present during all ground-disturbing field activities" since special status species which may be present on or adjacent to the site are protected under Federal and/or State ARARs.	Section 4.2.3.6 was revised as follows: "A USFWS–qualified biologist (reviewed by CDFW-OSPR) would be present during all ground-disturbing field activities…." The associated acronyms have been included in the acronym list and defined upon first mention in the text, as appropriate.	Agreed.	Noted.

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
3	4.2.2.2 4.2.3.6 4.4 Appendix A ARARs Evaluation A3.1.4, A3.2.4.1.1.1, A3.2.4.1.1.2, A3.2.4.1.1.3	4-3, pg42 4-7, pg46 4-12, pg51 A-21, pg104 A-26, pg109 A-27, pg110 A-27, pg110	The text states, "Appropriate avoidance and minimization measures would be implemented in accordance with the 'Biological Opinion for the Environmental Investigations on the Former Naval Weapons Station Seal Beach, Detachment Concord, Contra Costa County, California' (USFWS, 2012)." Please revise the text to state, "Appropriate avoidance and minimization measures would be implemented in accordance with the 'Biological Opinion for the Environmental Investigations on the Former Naval Weapons Station Seal Beach, Detachment Concord, Contra Costa County, California' (USFWS, 2012) and the California Department of Fish and Wildlife Provisions (CDFWPs) (CDFW, 2012)."	Sections 4.2.2.3 (formerly 4.2.2.2) and 4.2.3.6 was revised as follows: "Other appropriate avoidance and minimization measures would be implemented in accordance with the 2018 amendment to the Biological Opinion (USFWS, 2018). The CDFW Provisions (CDFWPs) will be considered in the development of protective measures to reduce/prevent impacts to the ecosystem, for threatened, endangered, or fully protected birds (CDFW, 2012)." Similar changes were also made in Appendix A, ARARs.	CDFW-OSPR requested the text be revised to state, "Appropriate avoidance and minimization measures would be implemented in accordance with the 'Biological Opinion for the Environmental Investigations on the Former Naval Weapons Station Seal Beach, Detachment Concord, Contra Costa County, California' (USFWS [U.S. Fish and Wildlife Service], 2012) and the California Department of Fish and Wildlife Provisions (CDFWPs) (CDFW, 2012)" (LaBonty, 2021b). The Navy responded that the text has been revised as follows, "The CDFW Provisions (CDFWPs) will be considered in the development of protective measures to reduce/prevent impacts to the ecosystem, for threatened, endangered, or fully protected birds (CDFW, 2012)." The CDFWPs were implemented for the Final Work Plan Supplemental Site Inspection at Runway Debris Area and Southern Railroad Revetment Area (Multi-Media Environmental Compliance Group [MMEC], 2019), the Final Remedial Investigation Work Plan for Red Rock Main Disposal Area (Adanta, Inc., 2021), and the Final Work Plan Data Gap Investigation for Site 24A (KMEA MACTEC Joint Venture, 2021). Please explain why the CDFWPs will only be "considered" in the development of protective measures for State protected species for the RDA EE/CA rather than "implemented" as was done for other Concord sites.	The CDFW Provisions do not qualify as ARARs because they are not a promulgated law or regulation. Thus they qualify as "to be considered" criteria and are evaluated as such in the EECA. Since we are not at the work plan stage, the CDFW provisions are not being "implemented" pursuant to the EECA. No changes made in response to this comment.
4	4.4	4-12, pg51	The text states, "…the disturbed areas would be reseeded using a seed mix composed of plants native to the area, and no operation and maintenance activities would be required." CDFW-OSPR recommends that contingencies for monitoring and maintenance of the reseeded areas be included (e.g., supplemental seeding and/or watering during drought conditions) to ensure the hydroseeding is successful (e.g., 70% vegetative cover within two years) to restore impacted habitat and prevent erosion. Please revise the text accordingly.	Please see the response to EPA comment #99.	CDFW-OSPR recommended that contingencies for monitoring and maintenance of the reseeded areas be included (e.g., supplemental seeding and/or watering during drought conditions) to ensure the hydroseeding is successful (e.g., 70% vegetative cover within two years) to restore impacted habitat and prevent erosion (LaBonty, 2021b). The Navy responded, "Please see the response to EPA [U.S. Environmental Protection Agency] comment #99." The response to EPA comment #99 does not address CDFW-OSPR's comment. Please explain how the Navy will ensure the hydroseeding is successful and will restore impacted habitat and prevent erosion.	Text in Section 4.4 was revised in a previous version, and has been further revised to as follows: "If needed to restore impacted habitat and prevent erosion, t~~T~~he disturbed areas would be reseeded using a seed mix composed of plants native to the area and watered to ensure successful seeding (e.g., 70% vegetative cover within 2 years) ~~if needed~~."
5	5.0	5-1, pg52	The text states, "Table 5-1 presents the comparative analysis of the alternatives of the alternatives for MEC/MPPEH items…" The words "of the alternatives" is listed twice in this sentence. Please revise.	Please see the response to EPA comment #121	Agreed.	Noted.

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
6	Appendix A ARARs Evaluation, A3.2.4.2.1, A3.2.4.1.1.1, A3.2.4.1.1.2, A3.2.4.1.1.3, A3.2.4.2.3, and Table A3-1	A-24, pg107 A-25, pg108 A-26, pg109 A-27, pg110 A-28, pg111	The text states, "F.G.C. §§1908, 3511, and 2080 is not applicable because the United States of America has not waived sovereign immunity in the federal Endangered Species Act for this State of California requirement." Please note that CERCLA specifically waives sovereign immunity for each "department, agency and instrumentality of the federal government" and waives sovereign immunity at all facilities "owned or operated" by the federal government. (42 U.S.C. 9607). If further information on ARARs is desired please contact Nicole Gleason, Senior Attorney at 916-206-1747.	The Navy acknowledges the commenter's position; however, the Navy has determined that the requirements are relevant and appropriate. Relevant and appropriate requirements must be complied with to the same extent as applicable requirements. So compliance with relevant and appropriate requirements will be the same as if the requirements are identified as applicable. No change has been made to the text in response to this comment.	The text stated, "F.G.C. [Fish and Game Code] §§1908, 3511, and 2080 is not applicable because the United States of America has not waived sovereign immunity in the federal Endangered Species Act for this State of California requirement." CDFW-OSPR commented that CERCLA specifically waives sovereign immunity for each "department, agency and instrumentality of the federal government" and waives sovereign immunity at all facilities "owned or operated" by the federal government (42 U.S.C. 9607). If further information on ARARs is desired please contact Nicole Gleason, Senior Attorney at 916-206-1747 (LaBonty, 2021b). The Navy responded, "The Navy acknowledges the commenter's position; however, the Navy has determined that the requirements are relevant and appropriate. Relevant and appropriate requirements must be complied with to the same extent as applicable requirements. So compliance with relevant and appropriate requirements will be the same as if the requirements are identified as applicable. No change has been made to the text in response to this comment." CDFW-OSPR concurs with the statement that "Relevant and appropriate requirements must be complied with to the same extent as applicable requirements." For the Administrative Record, CDFWOSPR maintains our position with regards to the Navy's claim of sovereign immunity.	Noted.
7	Appendix A ARARs Evaluation, Section A3.2.4.2	A-24, pg107	CDFW-OSPR submitted the To Be Considered (TBC) for Species of Special Concern (SSCs) (LaBonty, 2021), but this TBC was not included in the ARARs evaluation. Several SSCs have the potential to be present on or adjacent to the site, including California red-legged frog, Burrowing Owl, and Northern Harrier. We again request this TBC be included in the ARARs evaluation.	The Navy acknowledges the commenter's position with regards to the inclusion of SSCs as a TBC; however, actions related to SSCs are not explicitly regulated and thus are not included in this ARAR evaluation. Further, the California red-legged frog is a federal threatened species and will be protected under the federal Endangered Species Act identified as a potential federal ARAR. The burrowing owl has not been identified on the site or in the area (on the access road) for the past three years. Further, the previous burrowing owl sightings were in the winter and the ground-disturbing activities evaluated in Alternatives 2 and 3 would not occur in the winter. No change has been made to the text in response to this comment.	Agreed.	Noted.

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
8	Appendix A ARARs Evaluation, Section A3.2.4.2.1	A-24, pg107	a. The text states, "Fully protected birds that are potentially present at the Bermed Area include the golden eagle (Aquila chrysaetos). This species is protected under F.G.C. 3511 and 2080." The Golden Eagle is a fully protected bird species under F.G.C. §3511, but it is no longer State listed as endangered under F.G.C. §2080. Please revise the text accordingly. b. The text states, "The substantive provisions of F.G.C. 1908, 3511, and 2080 meet the pertinent NCP [National Oil and Hazardous Substances Pollution Contingency Plan] criteria under 40 C.F.R. §300.400(g)(2)(vii) and are 'relevant and appropriate' because the Golden Eagle can potentially be present at the site and protection of this vulnerable resource allows it to be 'used' in the sense that it continues to provide its unique value to the State of California." CDFW-OSPR appreciates the Navy accepting these statutes as relevant and appropriate. However, because the Golden Eagle is not protected under F.G.C. §1908 (rare and endangered native plants) or §2080 (California Endangered Species Act), it would be more accurate if the text was revised to state, "The substantive provisions of F.G.C. §§1908, 3511, and 2080 meet the pertinent NCP criteria under 40 C.F.R. §300.400(g)(2)(vii) and are 'relevant and appropriate' because the large-flowered fiddleneck, Golden Eagle, and California tiger salamander can potentially be present at the site and protection of these vulnerable resources allows them to be 'used' in the sense that they continue to provide their unique value to the State of California."	The first three paragraphs of Section A.3.2.4.2.1 have been revised as follows: "A.3.2.4.2.1 California Fish and Game Code §§ 2080 and 3511 The California ESA is set forth in the California Fish and Game Code §§ 2050–2116. The substantive provisions in F.G.C. § 2080 prohibit the "take" of California endangered or threatened species. "Take" is defined in California Fish and Game Code § 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." California Fish and Game Code § 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. California Fish and Game Code §§ 2080 and 3511 are not applicable because the United States of America has not waived sovereign immunity in the federal ESA for this State of California requirement. The California tiger salamander (CTS) and Swainson's hawk, state threatened species, are present or potentially present at the Bermed Area. Fully protected birds that are potentially present at the Bermed Area include the golden eagle and the White-tailed kite. These species are protected under California Fish and Game Code §§ 2080 and 3511. The substantive provisions of California Fish and Game Code §§ 2080 and 3511 meet the pertinent NCP criteria under 40 C.F.R. § 300.400(g)(2)(vii) and are "relevant and appropriate" because the CTS, Swainson's hawk, golden eagle, and White-tailed kite are present or potentially present at the site and protection of these vulnerable resources allows them to be "used" in the sense that they continue to provide their unique value to the State of California." Upon further consideration, the Navy has removed California Fish and Game Code § 1908 because no endangered or rare native plants are on the Bermed Area based on site surveys completed from 2011-2014 and the 2018 amendment to the Biological Opinion that confirmed the finding of no effect on endangered or rare native plants because of their absence from the project area.	Agreed.	Noted.

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
9	Appendix A ARARs Evaluation, Section A3.2.4.2.2 and Table A3-1	A-28, pg111	The text states, "The State has withdrawn its previous identification of this requirement as a state ARAR in light of Navy's identification of the substantive provisions of the MBTA as a relevant and appropriate federal ARAR for this action." This text is listed twice after F.G.C. §3513. Please revise accordingly. a. *Fish and Game Code §3503.5.* CDFW-OSPR no longer withdraws its identification of this requirement as a State ARAR due to the position taken in the U.S. Department of Interior Solicitor's memorandum dated December 22, 2017, titled The Migratory Bird Treaty Act Does Not Prohibit Incidental Take ("M-37050"). California Fish and Game Code §3503.5 prohibits the take, possession, or destruction of any birds in the orders of Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. This code section imposes a substantive, promulgated environmental protection requirement that is more stringent than federal law. This section applies to all locations within the state where such species and/or their nests and eggs are located. According to the Focused Feasibility Study (TriEco-Tt, 2017), Burrowing Owl and Short-eared Owl potentially occur on site. Section 3503.5 is relevant and appropriate. Pre-construction surveys, buffer zones, and other avoidance and minimization measures are available to protect falcon and owl species and their nests and eggs. CDFW-OSPR again requests this requirement be included as an ARAR for the EE/CA.	The duplicated text has been removed as requested. a. The Navy notes that pursuant to U.S. Department of Interior Director's Order No. 225, which became effective on December 3, 2021, the U.S. Fish and Wildlife Service interprets the MBTA to prohibit incidental take of migratory birds. There was no change to the text. b. In order to make the ARARs tables an easy reference to determine which requirements are actually identified as ARARs, requirements determined not to be ARARs, including this requirement, were deleted from the tables. The discussion of California Fish and Game Code §§ 3503.5 and 3513 is still in the text of Appendix A Section 3.2.4.2.2. ~~.~~"	Response to Specific Comment 9a In regard to Fish and Game Code §3503.5, the Navy responded, "The Navy notes that pursuant to U.S. Department of Interior Director's Order No. 225, which became effective on December 3, 2021, the U.S. Fish and Wildlife Service interprets the MBTA [Migratory Bird Treaty Act] to prohibit incidental take of migratory birds. There was no change to the text." CDFW-OSPR acknowledges U.S. Department of Interior Director's Order No. 225. However, we no longer withdraw our identification of this requirement as a State ARAR for the following reasons. California Fish and Game Code §3503.5 prohibits the take, possession, or destruction of any birds in the orders of Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. This code section imposes a substantive, promulgated environmental protection requirement that is more stringent than federal law. This section applies to all locations within the state where such species and/or their nests and eggs are located (LaBonty, 2021). CDFW-OSPR requests that the Navy coordinate with CDFW-OSPR and USFWS when developing and implementing biological avoidance, minimization, and mitigation measures for the protection of birds of prey.	Please see the response to comment #250. No changes made in response to this comment.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
9 *(cont.)*	Appendix A ARARs Evaluation, Section A3.2.4.2.2 and Table A3-1	A-28, pg111	*(continued)* b. Fish and Game Code §3513. CDFW-OSPR no longer withdraws its identification of this requirement as a State ARAR due to the position taken in the U.S. Department of Interior Solicitor's memorandum dated December 22, 2017, titled The Migratory Bird Treaty Act Does Not Prohibit Incidental Take ("M-37050"). Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act prior to January 1, 2017 or after January 20, 2025. This state law is a more stringent than the MBTA and rejects the position taken in the U.S Department of Interior Solicitor's memorandum dated December 22, 2017, titled The Migratory Bird Treaty Act Does Not Prohibit Incidental take ("M37050"). This section is relevant and appropriate to the extent that migratory nongame birds and their habitat are potentially located on or near the site. Suitable habitat for migratory nongame birds at and near the Bermed Area include grasslands and the 5AT-2 pond. According to the Focused Feasibility Study (TriEco-Tt, 2017), bird species potentially occurring at the Bermed Area include Tricolored Blackbird, Golden Eagle, Burrowing Owl, Swainson's Hawk, and Northern Harrier. Section 3513 is relevant and appropriate. Pre-construction surveys, buffer zones, and other avoidance and minimization measures are available to protect migratory birds. CDFW-OSPR again requests this requirement be included as and ARAR for the EE/CA.	*(see response above)*	*(see comment above)*	*(see response above)*

Table 4: Responses to Comments from the California Department of Fish and Wildlife (CDFW) on the Draft Engineering Evaluation/Cost Analysis for Non-Time-Critical Removal Action at the Bermed Area, UXO Site 0012, Former Naval Weapons Station Seal Beach Detachment Concord, Concord, CA, dated July 2021

Comment #	Section #	Page #	Comment	Response	Comment	Response
Comments provided by Tami LaBonty (CDFW Office of Spill Prevention and Response), dated September 3, 2021 *(continued)*					**Comments provided by Tami LaBonty, dated June 29, 2022** *(continued)*	
10	Appendix A ARARs Evaluation, Section A3.2.4.2.3	A-28, pg111	a. The text states, "Pursuant to 40 C.F.R. §300.400(g)(2) of the NCP, the Navy has determined that this requirement is not 'relevant and appropriate' because it does not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP." These ARARs are relevant and appropriate because they do address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action at the site and are well-suited to the site in light of the potential presence of species and the potential for residual MPPEH/MEC and MCs in soil under the MPPEH/MEC in the subsurface to pose explosive and chemical hazards to ecological receptors. F.G.C. §3005 prohibits the taking of birds and mammals by poison. It is relevant and appropriate to locations in the state where birds and mammals encounter poisonous materials, including hazardous substances that are the subject of a CERCLA action. F.G.C. §3503 prohibits the take of the nest or eggs of any bird. Although the Navy may not intend to "take" bird's nest or eggs, the potential for explosive hazards from residual MPPEH/MEC, chemicals from MCs, and impacts from removal activities may result in "take" for purposes of the F.G.C. definitions as explained above. Therefore, these statutes are considered relevant and appropriate to the Bermed Area and should be included as ARARs in the EE/CA.	a. The Navy acknowledges the commenter's position as presented in (a) and (b); however, the text in the Section A.3.2.4.2.3 reflects the Navy and CDFW's agreed upon positions on California Fish and Game Code §§ 3005 (when ecological risk is identified) and 3503 (when measures to avoid harm to nests and eggs have been agreed upon). Section A.3.2.4.2.3has been revised as follows: *"California Fish and Game Code § 3005 makes it is unlawful to take birds or mammals with any net, pound, cage, trap, set line or wire, or poisonous substance, or to possess birds or mammals so taken, whether taken within or without this state.* *California Fish and Game Code § 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.* *The Navy is not going to take any bird or mammal with a net, pound, cage, trap, set line or wire. Further, this NTCRA is addressing potential MEC/MPPEH remaining in subsurface soil at the RDA. The potential MEC/MPPEH does not poison birds or mammals as prohibited in California Fish and Game Code § 3005. Chemical contamination could be considered similar poisoning for chemicals that present ecological risk. Based on the RI, no munitions constituents are present in soil at concentrations that present risk to the environment. Further, under Alternative 3 soil samples would be collected and analyzed for munitions constituents. Therefore, the Navy does not accept California Fish and Game Code § 3005 as a potential ARAR.*	Response to Specific Comments 10a and b. In regards to F.G.C §§ 3005 and 3503, the text stated, "Pursuant to 40 C.F.R. §300.400(g)(2) of the NCP, the Navy has determined that this requirement is not 'relevant and appropriate' because it does not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP." The text further states, "… the purpose of this state requirement is to regulate and set forth conditions for the "taking" of the species addressed by those requirements. Moreover, that purpose is achieved through the regulation of intentional conduct directed at the species as opposed to incidental "take" (or possession, etc.) of species in the course of lawful activity such as CERCLA remedial action. The focus on intentional conduct is not well-suited to the circumstances at CERCLA sites." CDFW-OSPR refuted these statements (LaBonty, 2021b). The Navy responded, "The Navy acknowledges the commenter's position as presented in (a) and (b); however, the text in the Section A.3.2.4.2.3 reflects the Navy and CDFW's agreed upon positions on California Fish and Game Code §§ 3005 (when ecological risk is identified) and 3503 (when measures to avoid harm to nests and eggs have been agreed upon)." Please note that the language referenced by the Navy was taken from the Navy attorneys' letter dated June 16, 2009 (Callaway and Waters, 2009) which provides the Navy's position on ARARs and was refuted by CDFW-OSPR's attorney in the letter dated December 3, 2009 (Johnson, 2009). CDFW-OSPR still maintains that Fish and Game Code § 3503 is an ARAR for this EE/CA. Please include the following agree-to-disagree language in the text, which is based on the Navy attorneys' letter dated April 29, 2010 (Callaway and Waters, 2010): The DON has determined that F&GC Section 3503 is not a state ARAR because it is not applicable or relevant and appropriate. The State of California, through CDFWOSPR, asserts that Section 3503 is a state ARAR because it is relevant and appropriate. Whereas, the DON and the State have not agreed upon whether Section 3503 is an ARAR, this Engineering Evaluation/Cost Analysis (EE/CA) documents each party's position on the statute but does not attempt to resolve the issue. Nonetheless, the DON agrees that it will undertake mutually agreed upon measures in order to generally avoid harm to nests and eggs when there is	Please see the response to Comment #250. With regards to the agree-to-disagree language, this is used by the Navy when there is actual agreement on specific mitigation measures. The requested change by CDFW does not include specific avoidance measures but rather a general statement that the DON will "undertake mutually agreed upon measures. The Navy cannot agree to unspecified future measures. ~~"California Fish and Game Code § 3503 is not applicable because the United States of America has not waived sovereign immunity in the federal ESA for this State of California requirement. Pursuant to 40 C.F.R. § 300.400(g)(2) of the NCP, the Navy has determined that this requirement is not "relevant and appropriate" because it does not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP. CERCLA response actions are intended to respond to releases of hazardous substances in order to protect human health and the environment including environmental receptors. In contrast, the purpose of this State requirement is to regulate and set forth conditions for the "taking" of the species addressed by those requirements. Moreover, that purpose is achieved through the regulation of intentional conduct directed at the species as opposed to incidental "take" (or possession, etc.) of species in the course of lawful activity such as a CERCLA response action. The focus on intentional conduct is not well-suited to the circumstances at CERCLA sites. In summary, the purpose of this State requirement and the actions that it regulates do not include responding to releases of hazardous substances. Therefore, it is not "relevant and appropriate" based upon the pertinent provisions of NCP § 300.400(g)(2)(i) and (iv).~~

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Comment #	Section #	Page #	Comment	Response	Comment	Response
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10 *(cont.)*	Appendix A ARARs Evaluation, Section A3.2.4.2.3	A-28, pg111	*(see comment above)*	*(see response above)*	potential that they may be impacted by response action construction. The State will not dispute the selected remedy for failure to identify F&GC 3503 as an ARAR because the State has determined that the mutually agreed measures to generally avoid harm will result in substantive compliance with the state requirement. Response to Specific Comments 10c. In regard to F.G.C § 3005, the Navy responded, "The Navy will include project screening levels in the SAP [Sampling and Analysis Plan] for the removal action identified in this EE/CA. If MC [Munitions Constituents] are identified at concentrations exceeding screening levels, the need for a risk assessment will be evaluated." If the risk assessment indicates there is unacceptable risk to birds and mammals, then F.G.C § 3005 should be an ARAR.	~~Although this requirement is not an ARAR, the Navy will coordinate with other natural resource trustees throughout the CERCLA response action process. The Navy's ecological risk assessment process takes into account representative environmental receptors for the site and final remediation/cleanup goals will ensure that they are adequately protected from exposure to CERCLA hazardous substances that present unacceptable risk. In addition, any species that are present and are federal and/or state endangered, threatened, or fully protected species will be addressed by ARARs related to those designations.~~ The Navy has determined that California Fish and Game Code § 3503 is not applicable or relevant and appropriate. The State of California, through CDFW, asserts that § 3503 is a state ARAR because it is relevant and appropriate. Whereas the Navy and the State have not agreed upon whether California Fish and Game Code § 3503 is an ARAR, this EE/CA documents each party's position on the statute but does not attempt to resolve the issue. Nonetheless, the Navy agrees that it will undertake the following measures in order to generally avoid harm to nests and eggs when there is the potential that they may be impacted by response action construction: survey the area for nests or eggs prior to removing munitions to see if the removal would affect a nest or eggs; to the extent practicable, try to avoid affecting nests or eggs; and have biological monitors during the removal action. The State will not dispute the selected removal action for failure to identify California Fish and Game Code § 3503 as an ARAR because the State has determined that the mutually agreed-upon measures to generally avoid harm will result in substantive compliance with the State requirement." These avoidance measures apply to birds that are not Federal or State threatened or endangered or State fully protected. The Navy will use the avoidance and minimization measures in the 2018 Biological Opinion Amendment.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
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10 *(cont.)*	Appendix A ARARs Evaluation, Section A3.2.4.2.3	A-28, pg111	b. The text states, "…the purpose of this state requirement is to regulate and set forth conditions for the 'taking' of the species addressed by those requirements. Moreover, that purpose is achieved through the regulation of intentional conduct directed at the species as opposed to incidental 'take' (or possession, etc.) of species in the course of lawful activity such as CERCLA remedial action. The focus on intentional conduct is not well-suited to the circumstances at CERCLA sites." These statutes are resource protection laws to manage the species and take (whether intentional or incident to a lawful activity) of the species in attempt to ensure their continued existence. They are "environmental requirements" since they pertain to protection of the state's natural resources which may occur on site. The Navy believes "take" requires intent and the Navy would not intend to "take," and, therefore, would not be in violation of the provisions. However, "take" can occur despite lack of intent per California F.G.C. section 86, Department of Fish and Game v. Anderson-Cottonwood Irrigation District (1992) 8 Cal. App. 4th 1554; 11 Cal Rptr. 2d 222. CDFW-OSPR disagrees with the Navy's interpretation of the purpose of F.G.C. provisions and while the Navy may not intend to effectuate a "take" of a species, potential MPPEH/MEC and MCs on site or future intrusive activities may result in "take" for purposes of the F.G.C. definition regardless of intent. c. The text states, "The Navy's ecological risk assessment process takes into account representative environmental receptors for the site and final remediation/cleanup goals will ensure that they are adequately protected from exposure to CERCLA hazardous substances that present unacceptable risk.	*California Fish and Game Code§ 3503 is not applicable because the United States of America has not waived sovereign immunity in the federal ESA for this State of California requirement. Pursuant to 40 C.F.R. § 300.400(g)(2) of the NCP, the Navy has determined that this requirement is not "relevant and appropriate" because it does not address problems or situations sufficiently similar to the circumstances of the release or CERCLA response action and is not well-suited to the site based upon the pertinent provisions of Subsections 300.400(g)(2)(i) and (iv) of the NCP. CERCLA response actions are intended to respond to releases of hazardous substances in order to protect human health and the environment, including environmental receptors. In contrast, the purpose of this State requirement is to regulate and set forth conditions for the "taking" of the species addressed by those requirements. Moreover, that purpose is achieved through the regulation of intentional conduct directed at the species as opposed to incidental "take" (or possession, etc.) of species in the course of lawful activity such as a CERCLA removal action. The focus on intentional conduct is not well-suited to the circumstances at CERCLA sites. In summary, the purpose of this State requirement and the actions that it regulates do not include responding to releases of hazardous substances. Therefore, it is not "relevant and appropriate" based upon the pertinent provisions of NCP § 300.400(g)(2)(i) and (iv).* *Although this requirement is not an ARAR, the Navy will coordinate with other natural resource trustees throughout the CERCLA response action process. In addition, any species that are present and are federal and/or state endangered, threatened, or fully protected species will be addressed by ARARs related to those designations."* b. Please see the response to comment 10a above. c. The Navy will include project screening levels in the SAP for the removal action identified in this EE/CA. If MC are identified at concentrations exceeding screening levels, the need for a risk assessment will be evaluated. No change has been made in response to this comment.		The Navy does not accept California Fish and Game Code § 3005 as a potential State ARAR. During the RI, the Navy collected 18 soil samples from beneath the location of MPPEH items. Seventeen of the 18 samples had no detectable concentrations of MC. One sample contained low concentrations of explosives, which were compared with human health and ecological screening criteria and were less than ecological screening criteria. The Navy expects similar results during the NTCRA; however, soil with MC at concentrations greater than project screening levels would be transported off site for disposal.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
10 *(cont.)*	Appendix A ARARs Evaluation, Section A3.2.4.2.3	A-28, pg111	In addition, any species that are present and are federal and/or state endangered, threatened, or fully protected species will be addressed by ARARs related to those designations." d. With regards to the Draft Final Record of Decision, the text states, "Other discussions with public agencies included the establishment of remedial goals to support clean closure of the site. The Navy suggested including established soil screening levels as the 2014 RI purported to have cleared the site of all munitions and therefore, no risk assessment was required. Because a risk assessment was not required for the site, the Navy could not establish remedial goals" (page ES-3). Based on this information it appears no risk assessment was conducted and no remedial goals were established for the site, therefore, F.G.C. §§3005 and 3503 are relevant and appropriate to address any potential impacts from residual MPPEH/MEC, MCs, and removal activities which may result in "take" for purposes of the F.G.C. definitions as explained above. Furthermore, F.G.C. §3503 protects the nest or eggs of any bird, including those not protected under federal and state endangered, threatened, or fully protected species statutes.	*(see response above)*	Agreed.	Noted.
11	Appendix B, Cost Analysis, Table A-2 and Table A-6	B-2, pg134 B-8, pg140	Please clarify whether these tables include cost estimates for a biological monitor. Please clarify whether Table A-6 includes cost estimates for revegetation maintenance and monitoring (e.g., supplemental seeding and/or watering) to ensure the hydroseeding is successful (e.g., 70% vegetative cover within two years) to restore impacted habitat and prevent erosion.	The EE/CA (also including Table ES-1, ES-2, and Section 5.3) was revised to include biological monitor costs, as appropriate. Costs for 2 years of revegetation maintenance and monitoring were added at the same rate as the Annual Inspection. This revision was carried throughout EE/CA as appropriate. The tables in Appendix B were erroneously named and have been revised to indicate Table "B-1," "B-2," etc., throughout.	Agreed.	Noted.
12	Appendix B, Cost Analysis, Table A-2	B-3, pg135	The text under the Source/Notes column is not legible. Please correct table.	The spacing was revised for legibility.	Agreed.	Noted.
13	Appendix B, Cost Analysis, Table A-4 and Table A-6	B-6, pg137 B-9, pg141	Please explain why these tables contain cost estimates for 5-Year Review Reports when Alternative 3 will support future unrestricted use/unrestricted exposure.	With the intent of comparing the cost of all alternatives, all future costs, including the costs for 5-year reviews, are included. No change was made in response to this comment.	Agreed.	Noted.

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Comment #	Section #	Page #	Comment	Response	Comment	Response
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14	Appendix A ARARs Evaluation, Section A.3.1.1	pg A-19			Biological Resources Conclusions The text states, "The grassland habitat at the site has been deemed suitable to support the following federal threatened and endangered animals: California red-legged frog (CRLF), a federal threatened species, the California tiger salamander (CTS), a federal endangered and a State threatened species." Please revise the text to state, "The grassland habitat at the site has been deemed suitable to support the following federal threatened and endangered animals: California red-legged frog (CRLF), a federal threatened species and State species of special concern, and the California tiger salamander (CTS), a federal and State threatened species."	The subject text was revised as requested.
15	Appendix A ARARs Evaluation, Section A.3.2.1	pg A-20			Biological Resources ARARs The text states, "The following are regulated biological resources may be found at the Bermed Area. • CRLF, a federal threatened species • CTS, a federal endangered and a State threatened species." Please revise the text to state: "The following are regulated biological resources that may be found at the Bermed Area. • CRLF, a federal threatened species and a State species of special concern • CTS, a federal and State threatened species."	The subject text was revised as follows: "The following ~~are~~ regulated biological resources may be found at the Bermed Area: • CRLF, a federal threatened species and a State species of special concern • CTS (Central California distinct population segment), a federal and a State threatened species"
16	Appendix A ARARs Evaluation, Table 3-1				Federal and State Location-Specific Applicable or Relevant and Appropriate Requirements a. For Fish and Game Code § 3511(a)(1) and (b)(7) and (12), under the column "Comments," the text states, "If the golden eagle or the White-tailed kits is present…" Please revise "White-tailed kits" to "White-tailed kites." b. For Fish and Game Code § 5650 (a)(6), under the column "Requirement," the text states, "Prohibits the passage of enumerated substances or materials into the waters of the state deleterious to fish, plant life, or birds." Please revise the text to state, "Prohibits the passage of enumerated substances or materials into the waters of the state deleterious to fish, plant life, mammals, or bird life."	The subject text was revised as requested.