



Naval Facilities Engineering Systems Command Southwest
San Diego, California

Final

Proposed Plan

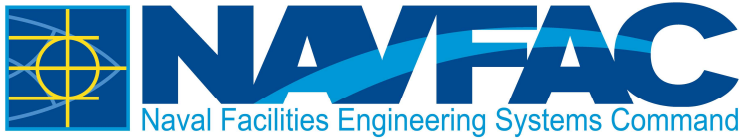
Munitions Response Program Site 4

Naval Air Facility El Centro

El Centro, California

January 2024

Distribution Statement A. Approved for public release: distribution is unlimited.



Naval Facilities Engineering Systems Command Southwest
San Diego, California

Final

Proposed Plan

Munitions Response Program Site 4

Naval Air Facility El Centro

El Centro, California

January 2024

DCN: CH2M-0007-4186-0005

Prepared for:

Department of the Navy
Naval Facilities Engineering Systems Command Southwest
750 Pacific Highway
San Diego, California 92132

Prepared by:



CH2M HILL, Inc.
San Diego, California

Contract Number: N62470-21D-0007; Task Order No. N6247322F4186



FINAL
JANUARY 2024

The Department of the Navy (Navy) is requesting comments from the public on its proposed final **remedial action** for **polycyclic aromatic hydrocarbon (PAHs) compounds** and metals in soil at **Munitions Response Program (MRP) Site 4**, at Naval Air Facility (NAF) El Centro (**Figure 1**). The information presented herein is summarized primarily from the MRP Site 4 **Remedial Investigation (RI)** and **Feasibility Study (FS)**, which can be found in the **Administrative Record**. Information for accessing the Administrative Record is found on **Page 15**.

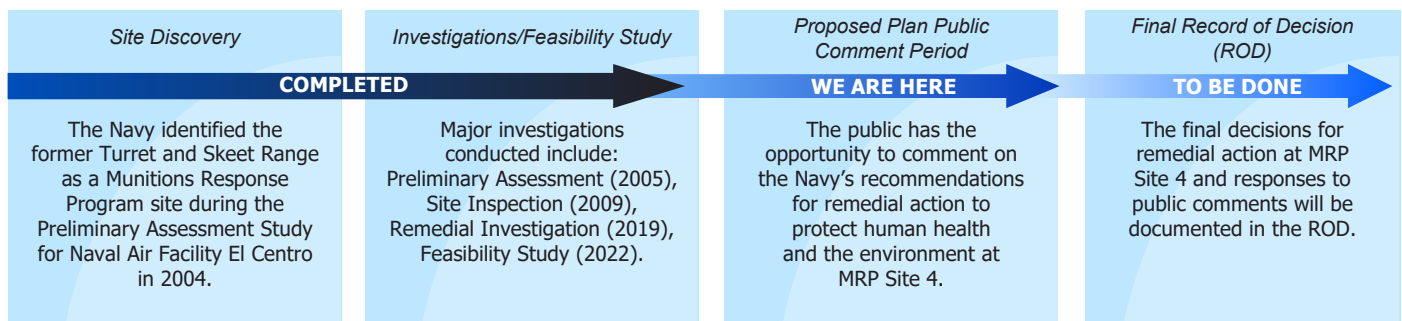
This **Proposed Plan** describes the Navy’s investigations of impact to soil resulting from historical activities at MRP Site 4. The Proposed Plan also presents five options, or alternatives, that have been evaluated by the Navy for addressing soil contaminants at MRP Site 4 and explains the Navy’s rationale for choosing the Preferred Alternative.

The Navy’s Preferred Alternative is Hot Spot Removal and **Institutional Controls (ICs)** to address the soil contamination. This Proposed Plan documents regulatory concurrence with the Navy’s proposed remedy.

The Navy, in consultation with the **California Department of Toxic Substances Control (DTSC)** and the **Colorado River Basin Regional Water Quality Control Board (RWQCB)**, will make the final decision on the remedy for MRP Site 4 after reviewing and considering all information submitted during the **public comment period**, which will be documented in a final **Record of Decision (ROD)**.

We invite you to review and provide comments on this Proposed Plan. You do not have to be a technical expert to comment. If you have questions or concerns, the Navy wants to hear them before making a final decision regarding MRP Site 4. For information on the public comment process and comment period, see the Community Involvement Opportunities text box below.

MUNITIONS RESPONSE PROGRAM PROCESS FOR MRP SITE 4



Community Involvement Opportunities

Virtual Public Meeting – February 7, 2024, 5:00–6:00 p.m.

You are invited to a virtual public meeting to discuss the proposed remedy for MRP Site 4 recommended in this Proposed Plan. Navy and regulatory agency representatives will be on hand to provide information and answer questions. You will have the opportunity to officially comment on the Navy’s proposed remedy. The virtual public meeting can be accessed via the following link: **<http://tinyurl.com/2tkjex9p>** on your web browser and selecting “Join Anonymously” or by calling 1-469-214-8538 and entering the Conference ID number 799866393# when prompted.

Public Comment Period – January 31–February 29, 2024

We encourage you to comment on this Proposed Plan during the 30-day public comment period. Comments may be submitted in writing (postmarked no later than February 29, 2024) to Mr. Roberto Sanchez, Environmental Restoration Program Manager, NAF El Centro, 1605 Third Street, Building 504, Code 45RF, El Centro, CA 92243, or by email (roberto.j.sanchez4.civ@us.navy.mil) no later than February 29, 2024. A comment form is attached to this Proposed Plan. Public comments received during this period will be incorporated into the Responsiveness Summary portion of the ROD and will be considered in the final decision for MRP Site 4.

1 Site Background and Characteristics

NAF El Centro is a 2,289-acre installation located in Imperial County, in the Imperial Valley desert of southeastern California, south of the Salton Sea and approximately 11 miles north of the United States-Mexico border (**Figure 1**). NAF El Centro is a federally owned facility, operated and managed by the Navy.

MRP Site 4 was a former Turret and Skeet Range constructed in 1943 and closed before expansion of the NAF El Centro runways, which took place from 1952 to 1956. The majority of the site currently consists of a former agricultural field. Buildings (magazines) associated with ordnance storage, assembly, and loading facilities (not associated with the Turret and Skeet Range activities) are located in the southern and southeastern portions of the site and are currently in operation.

MRP Site 4 encompasses the former Turret and Skeet Range and associated features. The former Turret and Skeet Range is located north of the runways, north of Big Red Boulevard, and near the northern installation boundary (**Figure 2**). MRP Site 4 also includes the firing line/positions/arc, target areas, impact areas, ricochet trajectory areas, and a portion of secondary danger zones for the former Turret and Skeet Range (**Figure 2**). The southern site boundary was extended during preparation of this Proposed Plan to cover the area where remedial action is necessary. The revised site area is approximately 55 acres. MRP Site 4 is generally flat with an elevation of approximately 50 feet below sea level in an area that has been disturbed through tilling and other agricultural operations.

During the 1940s, the Bombardier and Air Gunnery School used the range for small arms training, including machine gun familiarization, shotgun proficiency, and moving target orientation. Munitions use was limited to machine gun and shotgun ammunition. Based on a review of historical documents and photographs, the former Turret Range was set up as a field target machine gun range to provide primary training in the use of machine guns in aerial combat. The Turret Range consisted of a truck-mounted turret and fixed-mount machine guns that fired north from the firing line, which was located on or very near the southern boundary of the site (**Figure 2**). The Skeet Range was a single field shotgun range, firing northward from the firing arc located on or near the southern boundary of the site. The ranges were closed after the end of World War II and before expansion of the runways, which took place from 1952 to 1956.

Buildings (magazines) and support structures constructed in the late 1990s associated with ordnance storage, assembly, and loading facilities are located in the southern and southeastern portions of the site (**Figure 2**).

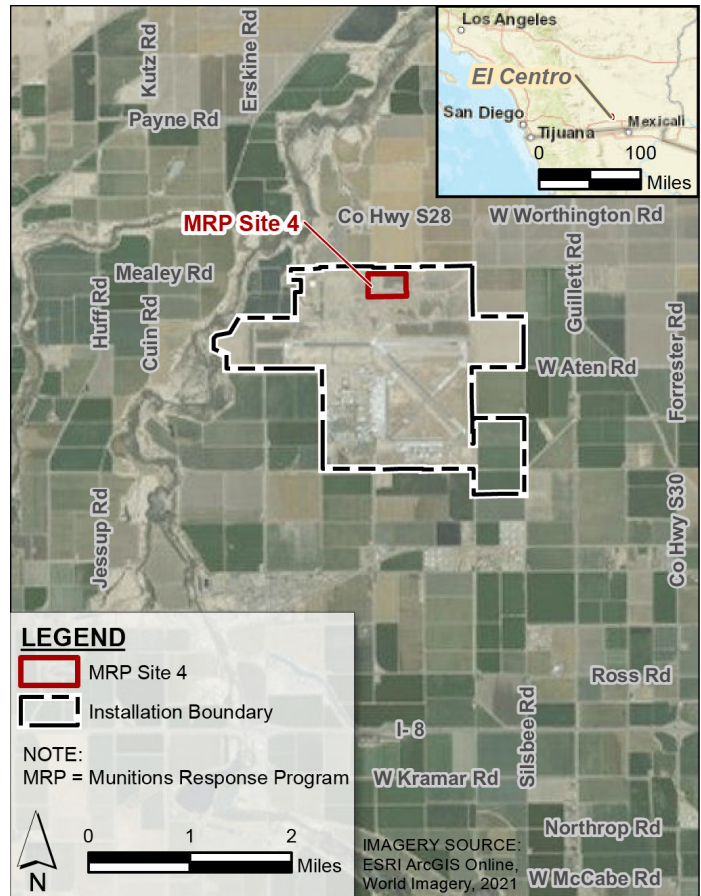


Figure 1 – Installation and MRP Site 4 Location

Before construction of these facilities, soil beneath the magazines was excavated and backfilled with 4 feet of lime-treated soil.

Following the use of the site as a range, the surrounding areas were graded to gently slope toward a drainage swale south of the site. The majority of the remaining portion of the site currently consists of a former agricultural field that was used to grow alfalfa.

During periods of heavy rainfall at the Installation, stormwater runoff collected by the drainage swales is discharged to the New River (located approximately 1 mile west of the range along the Installation's northwestern boundary). Because of the infrequent precipitation events at this site and the high rate of evaporation and infiltration in the area, it is unlikely that surface water from MRP Site 4 will reach the New River.

An aboveground concrete-lined trapezoidal irrigation canal that traverses the central portion of the site was constructed to support former agricultural activities within MRP Site 4 (**Figure 2**). The irrigation canal is constructed with approximately 3-foot-tall soil levees or banks along both sides of the canal. The irrigation canal is approximately 8 feet wide at the top, 2 feet wide at the bottom, and 2.5 feet deep. Construction details about

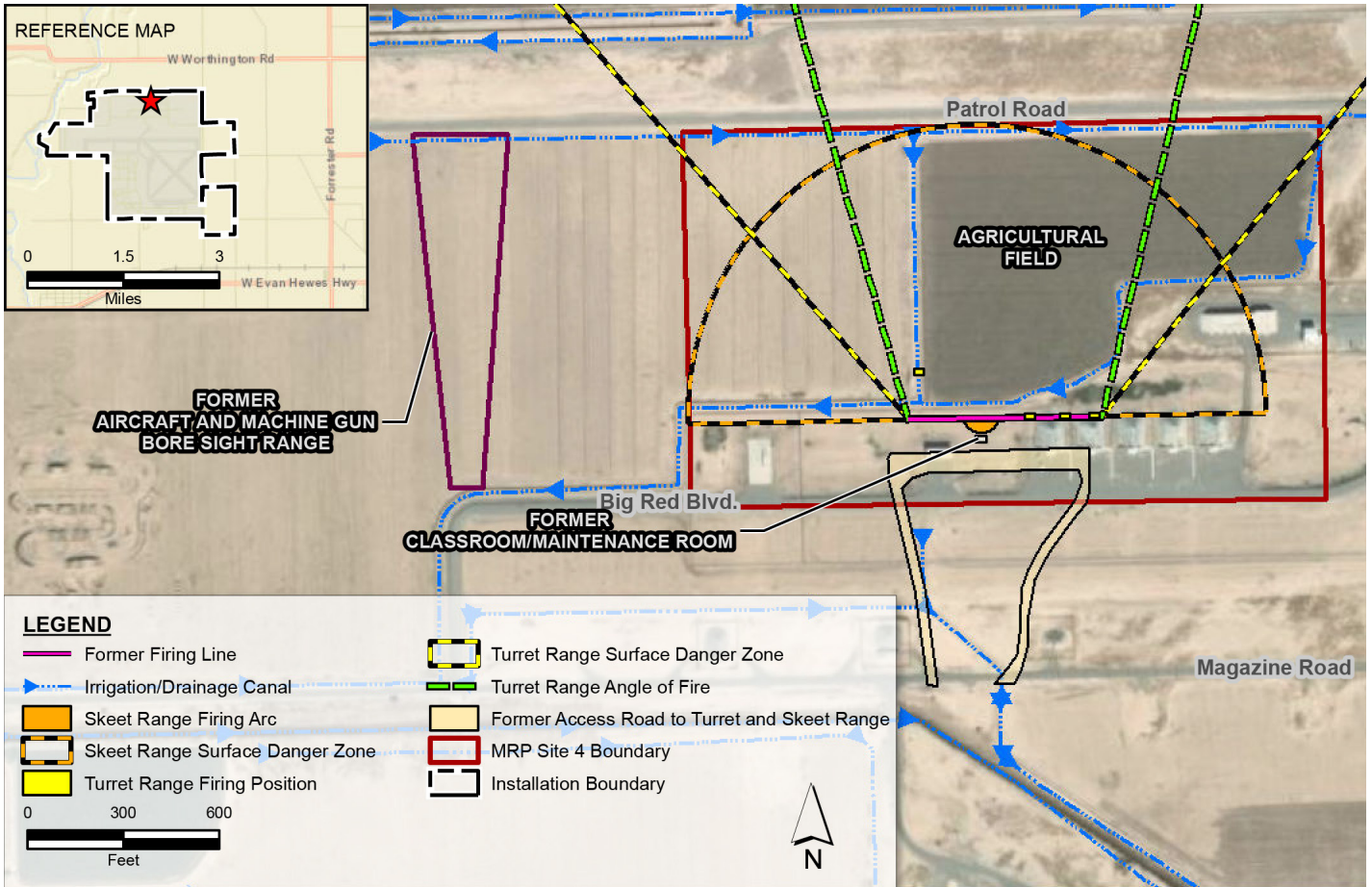


Figure 2 – MRP Site 4 Layout

the irrigation canals are not available. It is assumed that surface soil throughout MRP Site 4 was scraped and dragged over for the construction of the soil banks. Irrigation is no longer occurring, nor is it expected to occur, at MRP Site 4 because the agricultural field has been fallow since 2017, and the Navy does not plan to lease out the field in the future. Therefore, irrigation has been suspended indefinitely, and the irrigation canal does not currently convey irrigation water.

Environmental investigation of the former Turret and Skeet Range has been conducted since 2004 under the regulatory framework of the MRP. The objective of these investigations was to identify the potential presence of contaminants at MRP Site 4 and the nature and extent of these contaminants. **Table 1** provides a summary of the activities and findings of site investigations. **Figure 3** presents soil sample locations from previous investigations.

These studies found that soil is the only **medium of concern** at MRP Site 4. Groundwater has been designated as having municipal and industrial uses and as suitable, or potentially suitable, for municipal or domestic water supply by the Colorado River Basin (Region 7) RWQCB Water Quality Control Plan, with some exceptions. Because

the upper aquifer at NAF El Centro is characterized as having high total dissolved solids, chloride, and sulfate concentrations and low aquifer yields, groundwater generally does not meet the criteria for municipal beneficial use. Therefore, shallow groundwater beneath

Regulatory Framework

The Navy’s MRP follows the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**, commonly known as Superfund (as amended by the **Superfund Amendment and Reauthorization Act of 1986 [SARA]**). The Navy implements the MRP at its facilities to identify, assess, characterize, and clean up or control contamination from past munitions operations. The steps in the MRP process (which follows CERCLA) are shown on **Page 1**.

This Proposed Plan was developed in accordance with Section 117 of CERCLA and applicable provisions of the **National Oil and Hazardous Substance Pollution Contingency Plan (NCP)** and fulfills the public participation requirements of the lead agency, the Navy.

Table 1 – Previous Investigations and Studies

Previous Study	Admin Record Numbers	Activities and Findings
<p>Preliminary Assessment (PA) (Malcolm Pirnie, 2005)</p>	<p>000576</p>	<p>The PA was conducted to evaluate the history of munitions use at former ranges and assess site conditions with respect to munitions and explosives of concern (MEC) and munitions constituents (MC). The PA involved conducting offsite and onsite research and interviews and a visual survey.</p> <p>The PA concluded that only small arms ammunition were used at the site and there is no potential for the presence of MEC. However, MC is potentially present, and the type of MC expected may include lead and other metals associated with small arms ammunition and PAH compounds associated with the broken clay targets. The PA stated that the site boundary includes the firing line/positions/arc, target areas, impact areas, ricochet trajectory areas, and secondary danger areas for the former Turret and Skeet Range.</p>
<p>Site Inspection (SI) (Battelle, 2009)</p>	<p>000634, 000702, 000703, 000704, 000705</p>	<p>An SI was conducted to determine potential impacts from MC from historical range activities and whether further investigation was warranted.</p> <p>A total of 36 composite soil samples were collected from 100- by 100-meter sampling grids (a total of 18 grid cells [TUR01 through TUR18]) (Figure 3) to a depth of 2 feet bgs. Four samples were collected from two locations outside the site boundary (OBTUR01 and OBTUR02) (Figure 3) but within the firing fan to a depth of 2 feet bgs. Samples were analyzed for explosives residues, selected metals (antimony, arsenic, copper, lead, and zinc), and PAH compounds.</p> <p>Explosive residues were detected at low concentrations and below the SI project limits. Antimony, arsenic, lead, and PAH compounds were detected in soil samples above SI project limits.</p> <p>The findings indicated that the distribution of PAH compounds is not consistent with what would be expected from the location of the targets (concentrated further to the north in front of the firing line). The distribution was attributed to the earth movement and land use practices after the range use was discontinued, including agricultural production in the northern portion with tilling and crop remnant burning. Based on the results, an RI was recommended to confirm metal concentrations in selected areas of the site, to further characterize PAH compounds contamination, and to assess the potential risk associated with the contamination.</p>
<p>RI (CH2M, 2019)</p>	<p>000696, 000697, 000698, 000699, 000700, 000701</p>	<p>The RI consisted of soil sampling to further define the nature and extent of MC. This consisted of the collection of composite soil samples from multiple depths in the SI grid cells where MC were detected at concentrations that exceed current human health screening criteria and background threshold values (BTVs). The grids were further refined by subdividing the SI grid cells into quadrants, resulting in 50- by 50-meter subgrid cells (subgrids 1 through 12) (Figure 3).</p> <p>A total of 300 composite samples were collected and analyzed for selected metals (antimony, arsenic, copper, lead, and zinc) and PAH compounds. Most samples were also analyzed for pH and total organic carbon to evaluate the fate and transport of site contaminants.</p> <p>The nature and extent of contamination was defined based on data collected as part of the SI and RI exceeding human and ecological screening levels as follows:</p> <ul style="list-style-type: none"> Metals – Soil impacted with lead, antimony, and arsenic is limited to the central portion of the site at depths up to 1.5 feet bgs. PAH compounds – Soil impacted with PAH compounds is in the central and southern portions of the site to a depth of 2.5 feet bgs (with some exceptions). Lateral distribution of PAH compounds is consistent with the distribution of observed presence of clay skeet fragments in the surface. <p>Based on the visual reconnaissance conducted as part of the RI, the distribution of clay skeet target fragments is inconsistent with the former Turret and Skeet Range layout. It is suspected that the clay skeet target fragments were redistributed during tilling and disking while the site was being used for agriculture and during construction and maintenance of the irrigation drainage channels.</p> <p>A Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) were conducted as part of the RI, and potential risks were identified from exposure to metals and PAH compounds in soil.</p> <p>The RI recommended the completion of an FS to identify and evaluate remedial alternatives to address chemicals of concern (COCs) in soil at concentrations that may pose unacceptable risk to human health and ecological receptors.</p>

Table 1, continued – Previous Investigations and Studies

Previous Study	Admin Record Numbers	Activities and Findings
FS (CH2M, 2022)	To be determined	<p>The FS was prepared to identify the remedial action objectives (RAOs), to identify applicable or relevant and appropriate requirements (ARARs), and to evaluate remedial alternatives for the COCs that would satisfy the RAOs. The following remedial alternatives were evaluated to address metals and PAH compounds in soil:</p> <ul style="list-style-type: none"> Alternative 1 – No Action Alternative 2 – Hot Spot Removal and ICs Alternative 3 – Engineered Cap and ICs Alternative 4 – Hot Spot Removal, Soil Stabilization, and ICs Alternative 5 – Excavation and Offsite Disposal <p>The evaluation of remedial alternatives from the FS are discussed in more detail later in this Proposed Plan.</p>

Sources:

- Battelle. 2009. *Report for Munitions Response Program Site Inspection for the Small Arms Range, Skeet and Trap Range, Turret and Skeet Ranges, and Aircraft and Machine Gun Bore Sight Range at Naval Air Facility El Centro, CA.* August.
- CH2M HILL, Inc. (CH2M). 2019. *Remedial Investigation Report, Munitions Response Program Sites 2 and 4, Naval Air Facility El Centro, El Centro California.* September.
- CH2M. 2022. *Feasibility Study, Munitions Response Program Site 4, Former Turret and Skeet Range, Naval Air Facility El Centro, El Centro California.* September.
- Malcolm Pirnie. 2005. *Preliminary Assessment – Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC) Four Ranges at Naval Air Facility El Centro, California.* May.

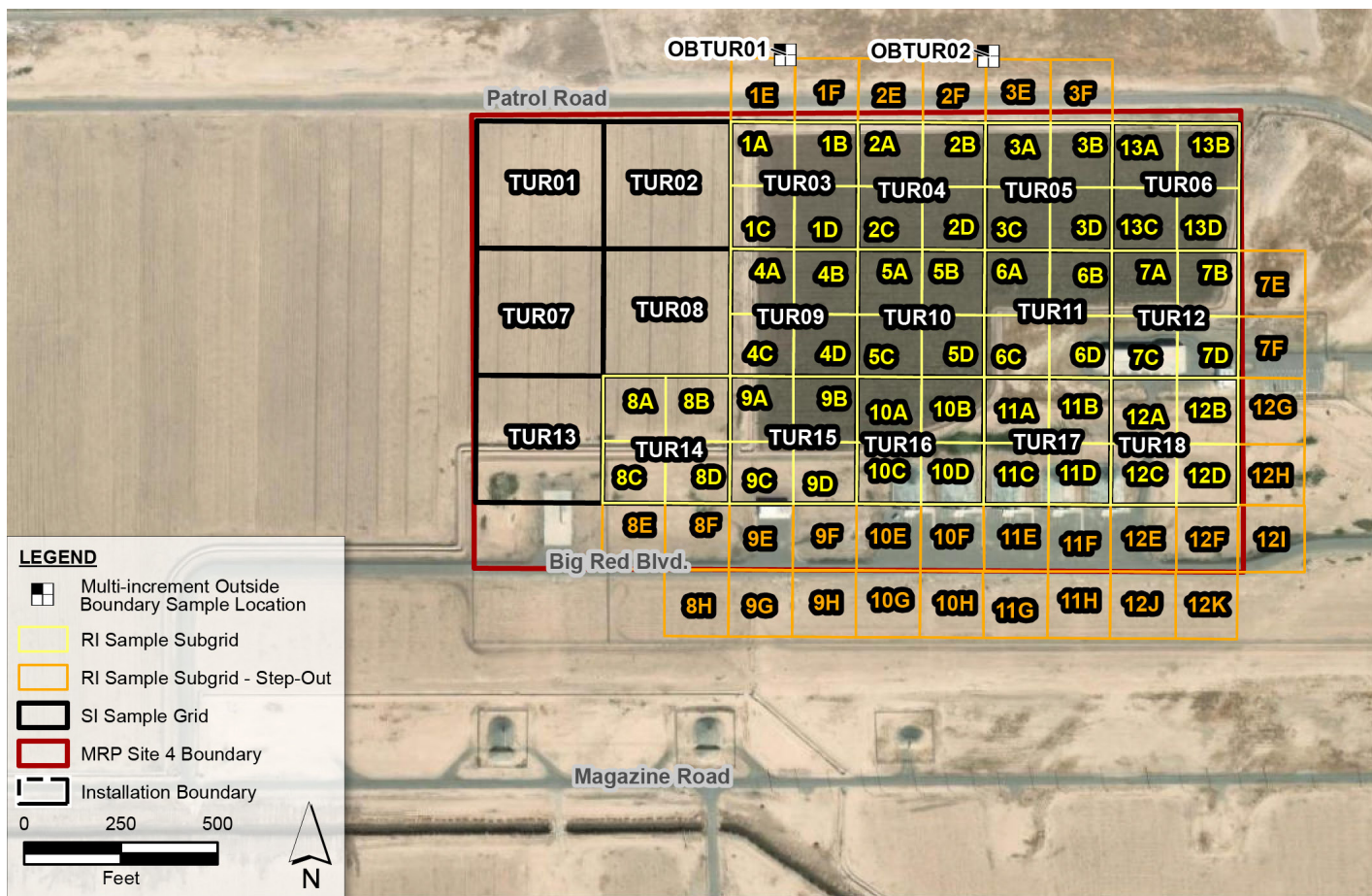


Figure 3 – Investigation Data Collection Locations

MRP Site 4 may be unsuitable for municipal use and is not a medium of concern. Although some industrial uses may be applicable, none are presently known to exist or are planned to be implemented. Surface water and sediments are not media of concern because the closest surface water body is located approximately 1 mile west of MRP Site 4.

The environmental investigations indicated that metals and PAH compounds impacted the soil. Soils impacted with lead, antimony, and arsenic are limited to the central portion of the site at depths up to 1.5 feet below ground surface (bgs). Soil impacted with PAH compounds are in the central and southern portions of the site to a depth of 2.5 feet bgs (with some exceptions). The lateral distribution of PAH compounds is consistent with the distribution of the observed presence of clay silt fragments in the surface.

Figure 4 provides an illustrative representation of the **conceptual site model** for MRP Site 4 based on the findings from previous investigations.

2 Scope and Role of Response Action

MRP Site 4 is one of four MRP sites being addressed at NAF El Centro (MRP Sites 1, 2, 3, and 4). Additionally, 18 Installation Restoration Program (IRP) sites have been identified at NAF El Centro. Of those 18 sites, 14 have been closed (cleaned up), and 3 sites are currently being addressed (IRP Sites 1, 2, 7, and 18). The remedial alternatives evaluated for MRP Site 4 do not directly include or affect any other IRP or MRP site or areas of concern at NAF El Centro.

3 Summary of Site Risks

Risk for MRP Site 4 is based on the likelihood or probability of MC to cause adverse effects to exposed human or ecological receptors. The RI evaluated potential human health and ecological risks from exposure to soil, the only medium of concern at MRP Site 4. The following subsections summarize the risk assessment results.

3.1 Human Health Risk Assessment

The HHRA evaluated the potential impact on current and future receptors from exposure to surface (0 to 0.5 foot bgs) and subsurface (0 to 5.5 feet bgs) soil at MRP Site 4 based on current and reasonably anticipated future land use for active flightline and ordnance storage operations. The following potential human receptors were evaluated as part of the HHRA: current industrial worker, future industrial worker, future construction worker, and hypothetical future resident. Each human receptor was evaluated for incidental ingestion of soil, dermal contact with soil, inhalation of chemicals released to outdoor air from wind erosion of contaminated soil, and inhalation of

chemicals released to outdoor air from volatilization of contaminated soil.

Health risks are based on a conservative estimate of the potential **cancer risk** or the potential to cause other health effects not related to cancer, as indicated by a **hazard index (HI)**. CERCLA requirements as outlined in the NCP identify an acceptable cancer risk range of 1 in 10,000 (1×10^{-4}) to 1 in 1,000,000 (1×10^{-6}), called the "risk management range," and an acceptable noncancer hazard as an HI of less than 1. These criteria were used to determine whether any further actions were required to sufficiently protect human health at MRP Site 4.

The HHRA estimated that cumulative cancer risks exceed the DTSC point of departure of 1 in 1,000,000 but are within the United States Environmental Protection Agency risk management range of 1 in 1,000,000 to 1 in 10,000 for all current and future (nonhypothetical) receptors. Noncancer HIs are less than 1 for surface soil exposure but exceed 1 for subsurface soil exposure for all current and future (nonhypothetical) receptors. The primary chemicals that contributed significantly to these risks include PAH compounds for the current and future industrial workers and arsenic for the future industrial and construction workers.

Although future residential use of MRP Site 4 is considered unlikely, the Navy conservatively developed risk estimates for a hypothetical residential exposure scenario. These risks were estimated to be in the upper end of the risk management range for cancer risk and above a noncancer HI of 1. The primary chemicals that contributed significantly to these risks included PAH compounds in surface soil and PAH compounds and metals (arsenic and antimony) in subsurface soil.

Additionally, the HHRA evaluated the potential for health effects from exposure to lead by comparing the **exposure point concentration** for lead in surface soil and subsurface soil with the California-recommended screening levels for lead of 80 milligrams per kilogram (mg/kg) for residential exposure and 320 mg/kg for industrial exposure (at the time the RI was prepared). The current screening level for industrial exposure is 500 mg/kg. Based on the evaluation, lead was identified as a primary risk contributor for the future industrial and construction worker and future hypothetical resident.

In summary, each of the primary risk contributors identified in the HHRA for surface soil and subsurface soil, metals (antimony, arsenic, and lead) and PAH compounds (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene), were determined to warrant remedial action consideration and were therefore identified as COCs in soil at MRP Site 4.

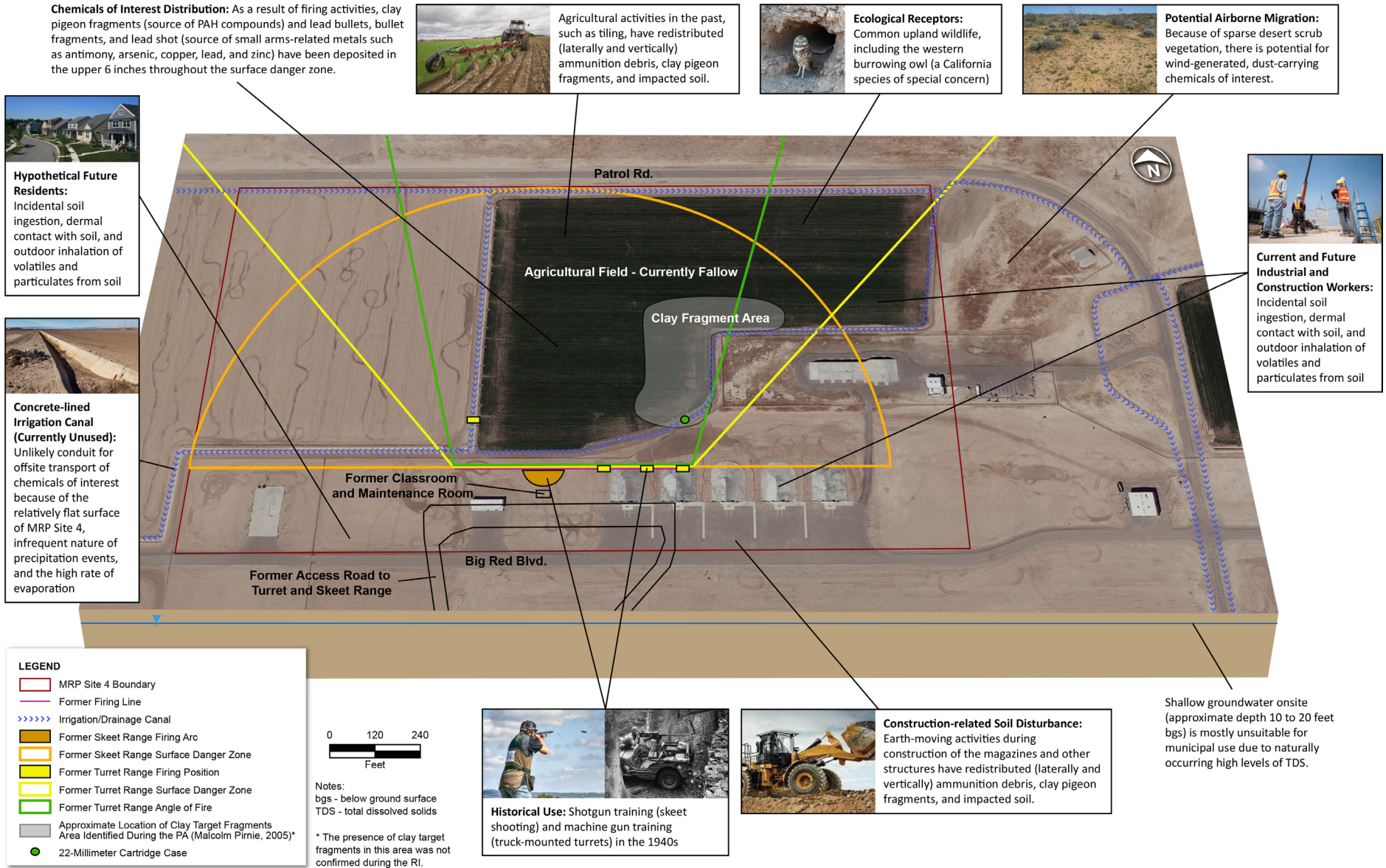


Figure 4 – Conceptual Site Model

3.2 Ecological Risk Assessment

An ERA was completed to evaluate potential impacts to ecological receptors from exposure to soil at MRP Site 4. Representative terrestrial receptors (plants, soil invertebrates, and terrestrial birds and mammals) were selected for the ERA based on a review of current site conditions and potential habitat. There is no potential for a threatened species to occur at MRP Site 4; however, a California protected species, the burrowing owl, is known to be present at MRP Site 4.

Potential risks to ecological receptors are estimated by calculating a **hazard quotient (HQ)** to determine if exposure to a given chemical represents a significant risk of harm to ecological receptors. HQs are calculated based on the types and concentrations of chemicals present and the possible ways ecological receptors could be exposed to them. An HQ less than 1 indicates that the receptor’s estimated exposure to a given chemical parameter is less than the minimum threshold associated with toxicity, and exposure is unlikely to present a significant risk of harm. Therefore, it is determined that if the HQ is less than 1, the risk to ecological receptors is negligible.

The results of the ERA indicate that concentrations of antimony and lead found in surface and subsurface soil pose a potential for unacceptable risk to birds and mammals through incidental soil ingestion and uptake from forage or prey items. Also, because important fossorial animals are known to exist at or near the site (for example, burrowing owls), antimony and lead in surface and subsurface soils were recommended for evaluation of remedial alternatives. Antimony and lead were determined to warrant remedial action consideration and, therefore, were identified as ecological COCs in surface and subsurface soil at MRP Site 4.

4 Remedial Action Objectives

It is the lead agency’s current judgment that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. The following RAOs were developed for MRP Site 4:

- Address unacceptable risk to current and future industrial workers (including maintenance workers), future construction workers, and ecological receptors (birds and mammals) from exposure to COCs (antimony, arsenic, lead, benzo[a]pyrene, and dibenz[a,h]anthracene) in surface and/or subsurface soil.
- Prevent unacceptable exposure of future residents to COCs (antimony, arsenic, lead, benzo[a]anthracene, benzo[a]pyrene, dibenz[a,h]anthracene, benzo[b]-

fluoranthene, and indeno[1,2,3-cd]pyrene) in surface and subsurface soil.

Cleanup goals were developed for COCs contributing to unacceptable cancer risks and noncancer hazards from receptor exposure to soil. The most conservative value between the following was selected as the cleanup goal for each COC in soil:

- The cancer human health **risk-based concentrations (RBCs)** for each specific human receptor using a target cancer risk level (TCRL) of 1×10^{-5}
- The noncancer RBCs for each specific human receptor using a target HI of 1
- The ecological RBCs for each specific ecological receptor using the low-effect ecological screening values and an HQ of 1
- The BTV, if higher than the calculated human health and ecological RBCs

Table 2 presents the cleanup goals for all COCs and specific exposure scenario (that is, receptors) and their basis. The use of a TCRL of 1×10^{-5} assumes the land use at MRP Site 4 remains industrial and military.

Figure 5 displays the remediation target areas for each exposure scenario to achieve RAOs. The hot spot areas in pink address potential unacceptable risks to current and future industrial workers, future construction workers, and ecological receptors. The areas in orange, in addition to the hot spot areas (in pink), address potential unacceptable risks to residential and ecological receptors and achieve **unlimited use and unrestricted exposure (UU/UE)**.

The FS presented the RAOs along with preliminary cleanup goals, which are concentration thresholds for the COCs intended to be protective of the exposures and receptors of concern. The ROD will establish final cleanup goals for MRP Site 4.

5 Summary Of Remedial Alternatives

The following remedial alternatives were developed based on the conceptual site model to address COC-impacted soil at MRP Site 4 and are detailed in the FS:

- Alternative 1 – No Action
- Alternative 2 – Hot Spot Removal and ICs
- Alternative 3 – Engineered Cap and ICs
- Alternative 4 – Hot Spot Removal, Soil Stabilization, and ICs
- Alternative 5 – Excavation and Offsite Disposal

Table 3 presents a summary of the components of each remedial alternative, along with estimated costs. The Navy identified Alternative 2 as the Preferred Alternative.

Table 2 – Cleanup Goals for Soil

Receptor	Chemical of Concern	Soil Depth Interval of Concern ^a			Cleanup Goal (mg/kg)	Cleanup Goal Basis ^{b,c}	
		(feet bgs)					
		0 to 0.5	0 to 6	0 to 10			
Human Health	Current and Future Industrial Worker	Benzo(a)pyrene	X		13	RBC	
		Dibenz(a,h)anthracene	X		3.1	RBC	
	Future Industrial Worker	Arsenic			X	11	Background
		Lead			X	500	RBC
	Future Construction Worker	Arsenic			X	11	Background
		Lead			X	500	RBC
	Future Resident	Antimony			X	31	RBC
		Arsenic			X	11	Background
		Lead	X		X	80	RBC
		Benzo(a)anthracene	X			11	RBC
		Benzo(a)pyrene	X		X	1.1	RBC
	Ecological	Mammal (Deer Mouse)	Antimony	X	X	15.9	RBC
			Lead	X	X	901	RBC
Bird (Horned Lark)		Antimony	X	X	15.9	RBC	
		Lead	X	X	901	RBC	

a An "X" is shown for the soil depth interval(s) of concern applicable to the COC, based on the results of the HHRA and ERA.

b The cleanup goal for soil is based on the higher of the RBC and background level. Human health-based RBCs were calculated based on a TCRL of 1×10^{-5} and a target noncancer HI of 1; the lowest resulting RBC is shown. Human health-based RBCs for lead are based on a biomarker that corresponds to 1 microgram per deciliter incremental blood lead. RBCs based on target cancer risk of 1×10^{-5} and an HI of 1 were deemed acceptable based on an estimate of residual risk (post-remediation) presented in the FS for MRP Site 4 and provided the land use remains industrial and military. DTSC and the Colorado River Basin RWQCB believe that, if the land use changes in the future, the Navy may require additional evaluation to ensure there is no excess health risk or hazard to future site workers, occupants, or residents.

c Background levels (metals only) are based on BTVs developed for NAF El Centro IRP Site 18.

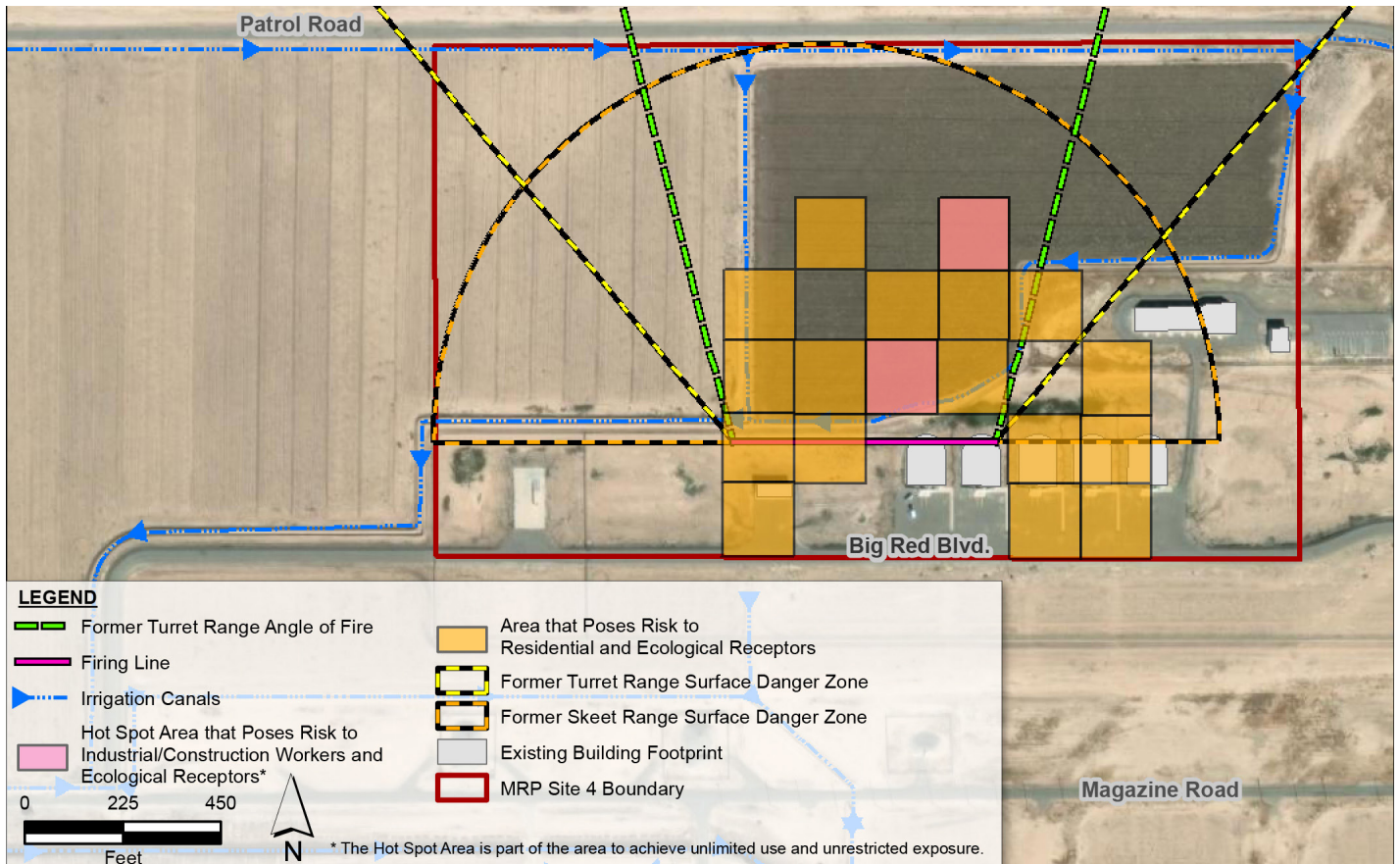


Figure 5 – Remediation Target Areas

Table 3 – Description of Remedial Alternatives

Alternative	Details	Cost	
1 – No Action	<ul style="list-style-type: none"> None 	Total Cost	–
2 – Hot Spot Removal and ICs	<ul style="list-style-type: none"> Conduct a Pre-design Investigation for the collection of soil samples (three sampling locations, two samples per location) beneath the irrigation canal within the hot spot area to confirm the need for action. As a contingency and for cost-estimating purposes, it is assumed that all soil beneath the irrigation canal is impacted. Excavate COC-impacted soils within the hot spot area (2,600 cubic yards; Figure 5) for offsite disposal and backfill with clean material to match the existing grade. Approximately 520 cubic yards of the excavation are estimated to be clean overburden. Excavate soil banks along the irrigation canal within the excavation area and disposed of offsite (approximately 23 cubic yards). Remove and restore approximately 120 linear feet of the existing concrete irrigation canal (pending results of the Pre-design Investigation). Collect two incremental soil samples from the bottom and one incremental soil sample from each sidewall of each excavation area to verify that the remaining concentrations of COCs in the soil meet the cleanup goals. Implement ICs to prohibit residential use. Conduct annual inspections (and reporting) to assess the continuing effectiveness of the ICs. Conduct five-year reviews to ensure the remedy remains protective of human health and the environment. 	Capital Cost	\$957,000
		O&M Cost	\$899,000
		Total Cost ^a	\$2,136,000
		Timeframe	32 years
3 – Engineered Cap and ICs	<ul style="list-style-type: none"> Install an engineered cap over the hot spot area (pink area on Figure 5), consisting of a minimum 2-foot-thick layer of soil, a biotic barrier, and hydroseeding (54,000 square feet). Implement ICs to prohibit residential use. Implement cap inspections, operations, and maintenance. Conduct annual inspections (and reporting) to assess the continuing effectiveness of the ICs. Conduct five year reviews to ensure the remedy remains protective of human health and the environment. 	Capital Cost	\$1,435,000
		O&M Cost	\$988,000
		Total Cost ^a	\$2,803,000
		Timeframe	32 years
4 – Hot Spot Removal, Soil Stabilization, and ICs	<ul style="list-style-type: none"> Conduct a bench-scale study before implementation to test different binding reagents and mix ratios, and the appropriate dosage to achieve proper encapsulation of the COCs. Conduct a Pre-design Investigation for the collection of soil samples (three sampling locations, two samples per location) beneath the irrigation canal within the hot spot area to confirm the need for action. As a contingency and for cost-estimating purposes, it is assumed that all soil beneath the irrigation canal is impacted. Excavate COC-impacted soils within the hot spot area (2,600 cubic yards; pink area on Figure 5) for ex situ stabilization. Approximately 520 cubic yards of the excavation are estimated to be clean overburden. Excavate and stabilize soil banks along the irrigation canal within the excavation area (approximately 23 cubic yards). Collect two incremental soil samples from the bottom and one incremental soil sample from each sidewall of each excavation area to verify that the remaining concentrations of COCs in the soil meet the cleanup goals. 	Capital Cost	\$1,165,000
		O&M Cost	\$1,071,000
		Total Cost ^a	\$2,604,000

Table 3, continued – Description of Remedial Alternatives

Alternative	Details	Cost	
4 – Hot Spot Removal, Soil Stabilization, and ICs	<ul style="list-style-type: none"> Stabilize the soil and immobilize the COCs by mixing a binding reagent, such as lime and Portland cement, within the hot spot area (2,600 cubic yards; pink area on Figure 5). Characterize stabilized soil and place back in the excavation area, as feasible and suitable (depending on results of the characterization). Spread and grade excess soil material suitable for backfill (estimated to be 80 cubic yards) around the hot spot area to match existing surface. Transport material not suitable for reuse (estimated to be 20 cubic yards) offsite and dispose of accordingly. Remove and restore approximately 120 linear feet of the existing concrete irrigation canal (pending results of the Pre-design Investigation). Implement ICs to prohibit residential use. Implement annual inspections (and reporting) to confirm the integrity of the stability of the soil and assess the continuing effectiveness of the ICs. Conduct five-year reviews to ensure the remedy remains protective of human health and the environment. 	Timeframe	32 years
5 – Excavation and Offsite Disposal	<ul style="list-style-type: none"> Conduct a Pre-design Investigation for the collection of soil samples beneath the irrigation canal (23 sampling locations, 2 samples per location) within the remediation target areas (pink and orange areas on Figure 5) to confirm the need for action. As a contingency and for cost-estimating purposes, it is assumed that all soil beneath the irrigation canal is impacted. 	Capital Cost	\$6,082,000
	<ul style="list-style-type: none"> Excavate all surface and subsurface COC-impacted soil up to a depth of 3.5 feet bgs (both remediation target areas; pink and orange areas on Figure 5). This results in approximately 29,540 cubic yards excavated for disposal with approximately 9,000 cubic yards expected to be clean overburden. 	O&M Cost	–
	<ul style="list-style-type: none"> Remove and restore approximately 1,120 linear feet of the existing concrete irrigation canal (pending results of the Pre-design Investigation). Excavate soil banks along the irrigation canal within the excavation area and disposed of offsite (approximately 160 cubic yards). Remove approximately 71,900 square feet of concrete or asphalt pavement. Leave existing buildings in place; however, excavate beneath building to the extent feasible without compromising building integrity. 	Total Cost ^a	\$7,264,000
	<ul style="list-style-type: none"> Collect two incremental soil samples from the bottom and one incremental soil sample from each sidewall of each excavation area to verify that the remaining concentrations of COCs in the soil meet the cleanup goals. Backfill excavation with clean material to match the existing grade. Achieve UU/UE; therefore, achieve site closure. 	Timeframe	3 years

^a Total cost includes the capital and O&M costs, a 20% contingency, and is presented in net present value terms (based on 2022 dollars).
O&M = operations and maintenance

Although Alternative 1 (No Action) does not meet the **threshold criteria (overall protection of human health and the environment and compliance with ARARs)** and, therefore, is not considered a viable remedy, it was included in **Table 2** because the NCP requires providing a baseline for the alternatives comparisons. All other alternatives comply with ARARs and have the same RAOs, expected outcomes, and anticipated future land uses.

The limited excavation alternative (Alternative 2), containment alternative (Alternative 3), and active treatment alternative (Alternative 4) allow for continued military or industrial use of the site by addressing soil contamination that poses unacceptable risk to industrial and construction workers. Additionally, they address unacceptable risk to ecological receptors. The implementation of ICs in Alternatives 2, 3, and 4 prevents activities that may compromise the integrity of the remedial components and prohibit the residential development and use of the site, hence addressing unacceptable risk to hypothetical future residents. An additional excavation alternative (Alternative 5) was developed following Department of Defense policy for considering a UU/UE scenario wherein the site would be released from any further action or controls.

6 Evaluation Of Remedial Alternatives

The NCP outlines the approach for comparing remedial alternatives using **nine evaluation criteria** to identify a preferred alternative for the site. **Table 4** compares the alternatives for MRP Site 4 based on seven of the nine criteria. The last two criteria, the **modifying criteria (state acceptance and community acceptance)**, will be addressed through public comment and regulatory agency review of this Proposed Plan.

A detailed comparative analysis of the alternatives and NCP criteria is provided in the FS and is summarized in the text that follows.

Overall Protection of Human Health and the Environment

All of the alternatives evaluated, with the exception of Alternative 1 (No Action), are protective of human health and the environment by eliminating, reducing, or controlling risks posed by the site through the removal or treatment of soil, **engineering controls**, or ICs to prevent unacceptable exposure to the soil COCs.

Compliance with ARARs

ARARs generally include any federal or state standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate to a CERCLA site or action. ARARs could be chemical-

Table 4 – Comparative Analysis of Remedial Alternatives

Criteria	Alternative 1 – No Action	Alternative 2 – Hot Spot Removal and ICs	Alternative 3 – Engineered Cap and ICs	Alternative 4 – Hot Spot Removal, Soil Stabilization, and ICs	Alternative 5 – Excavation and Offsite Disposal
THRESHOLD CRITERIA					
Protection of Human Health and the Environment	does not meet	meets	meets	meets	meets
Compliance with ARARs ^a	not applicable	meets	meets	meets	meets
BALANCING CRITERIA					
Long-term Effectiveness and Permanence					
Reduction of Toxicity, Mobility, and Volume Through Treatment ^b					
Short-term Effectiveness					
Implementability					
Cost (Total Present Value)	\$0	\$2.14 ^a	\$2.80M ^a	\$2.60M ^a	\$7.26M

^a Present worth (based on 2022 dollars), 30 year period of performance.

Poorly satisfies criterion Moderately satisfies criterion Better satisfies criterion

location-, or action-specific. All of the alternatives, with the exception of Alternative 1 (No Action), are expected to meet the chemical-, location-, and action-specific ARARs. A full list of ARARs is presented in the FS.

Long-term Effectiveness and Permanence

Alternative 5 ranks the highest for the **long-term effectiveness and permanence** criterion because it would remove COC-impacted soil (both remediation target areas, as shown on **Figure 5**). Alternatives 2, 3, and 4 rank moderately because, although they would prevent exposure to the soil hot spots, ICs would be required to prohibit residential use and soil COCs would remain onsite at levels acceptable for UU/UE.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 4 includes an active treatment by mixing soil with a binding agent; however, because the overall volume of impacted soil is increased, Alternative 4 is ranked moderate for the **reduction of toxicity, mobility, or volume through treatment** criterion. Alternatives 2, 3, and 5 are ranked low because they do not include a treatment component.

Short-term Effectiveness

Alternatives 2, 3, and 4 rank moderately for **short-term effectiveness** because each has an element involving some limited disturbance or potential contact with contaminated soil during construction of the remedial action. Alternative 5 has the greatest potential exposure to contaminated soil during excavation and, therefore, is rated low for this criterion.

The duration of short-term exposure risk associated with Alternatives 2, 3, 4, and 5 is expected to be approximately 1 year.

Implementability

All alternatives are technically and administratively feasible for **implementability**, with services and materials readily available.

Alternatives 2, 3, and 5 ranked moderate because they are straightforward and soil disturbance is limited to the excavation areas. Alternative 4 ranks lower because of the greater complexity of excavation and mixing binding agents.

Costs

Alternatives 3 and 4 have similar **costs** at \$2,803,000 and \$2,604,000, respectively, whereas Alternative 2 has slightly lower costs at \$2,136,000. Alternative 5 has the highest cost among the five alternatives at \$7,264,000.

7 Preferred Alternative

The Preferred Alternative is Alternative 2, Hot Spot Removal and ICs (**Figure 6**). **Table 3** provides a more detailed description. Alternative 2 is preferred because it provides overall protection of human health and the environment by addressing risk to industrial workers, construction workers, birds, and mammals by permanently removing COCs in soil above their respective cleanup goals for the lowest cost. Additionally, Alternative 2 has the lowest impact on current Installation operations while protecting the most likely current and future site user (industrial or military).

Alternative 3 does not remove the COCs in soil above cleanup goals; it simply caps it. It is also 40 percent more expensive. Alternative 4 is roughly the same cost as Alternative 2 but is more difficult to implement because its success is dependent on the results of a treatability study and soil geochemistry. Although ICs to prevent residential use would be needed as part of Alternative 2, the site is currently used as a buffer area between the active flightline and ordnance operations and the Installation boundary, and future reasonably anticipated land use is not expected to change. The costs of Alternative 5, resulting in site closure with UU/UE, are 170 percent more expensive than Alternative 2; these costs are not justified because residential use is not anticipated.

Based on information currently available, the lead and support regulatory agencies believe the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the **balancing criteria**. The lead and support regulatory agencies expect the Preferred Alternative to satisfy the following statutory requirements of CERCLA Section 121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; and (4) use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Because there are no highly toxic and mobile hazardous substances (**principal threat waste**) at MRP Site 4, it is not necessary for the Preferred Alternative to satisfy the preference for treatment as a principal element.

In general, ARARs for the Preferred Alternative include characterization and management of excavated soil and waste for proper offsite disposal, management of temporary excavated soil stockpiles, management of stormwater and fugitive dust during construction activities, recording of land restrictions, and protection and conservation of migratory birds (such as the burrowing owl). A full list of ARARs for the selected remedy will be included in the ROD.

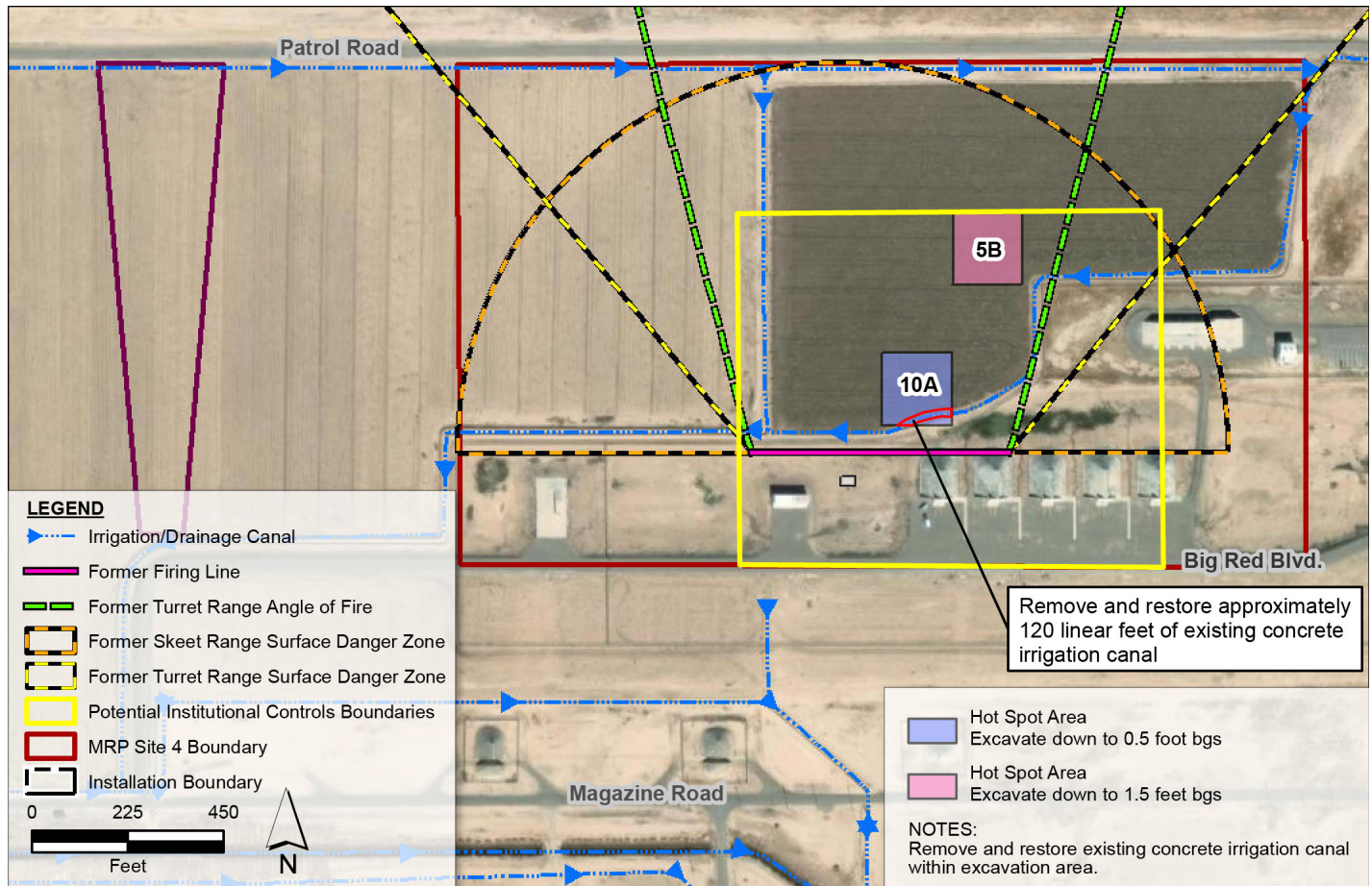


Figure 6 – Alternative 2 (Hot Spot and Institutional Controls) Features

Because COCs will remain at the site above levels that allow for UU/UE, the Navy will review the final remedial action no less than every 5 years after initiation of the remedial action, in accordance with CERCLA Section 121(c) and NCP at 40 Code of Federal Regulations 300.430(f)(4) (ii). If results of the Five-Year Review reveal that remedy integrity is compromised and protection of human health is insufficient, the parties will evaluate and the Navy will implement additional remedial actions.

If MRP Site 4 is transferred to a non-federal entity, the Navy will inform the transferee of its obligation to enter into a land use covenant with DTSC and file the land use covenant with the Imperial County Clerk and Recorder to ensure MRP Site 4 is not redeveloped for residential or sensitive receptor use. Further, the Navy will notify DTSC and the RWQCB prior to any property ownership changes.

8 Community Participation

The Navy, DTSC, and Colorado River Basin RWQCB provide information regarding the cleanup of NAF El Centro sites to the public through public meetings, the Administrative Record file, and announcements published in the local newspaper. The Navy and the State of California

encourage the public to review the administrative file to gain a more comprehensive understanding of the site and the CERCLA activities that have been conducted at MRP Site 4.

A virtual public meeting will be held to discuss the content of this Proposed Plan. A Public Notice will be posted in the local papers and a flyer distributed via mail to the public within a 1-mile radius of NAF El Centro to announce the time and how to access the virtual public meeting. Written or oral comments can be submitted during the public meeting. Official minutes of the public meeting will be recorded to document all public comments made at the meeting.

The comment form attached to this Proposed Plan can be used for public comments during the 30-day public comment period. Please send written comments to Mr. Roberto Sanchez, the Environmental Restoration Program Manager at NAF El Centro.

Public comments on this Proposed Plan, received during the virtual public meeting or during the public comment period (January 31 through February 29, 2024), will be considered by the Navy, in consultation with the regulatory

agencies, before selecting a final remedy for MRP Site 4. The Responsiveness Summary presented in the ROD will address responses to comments. The ROD will formally document the selected remedy for MRP Site 4.

A Public Notice will be posted in the local papers announcing when the ROD is available to the public in the information repositories listed on **Page 15**.

A summary of information related to the community participation is included on **Page 1** and provides the time and place of the public meeting, the dates of the public comment period for the Proposed Plan, the location of the Administrative Record file for MRP Site 4, and the names and contact information of lead and support agency personnel who will receive comments or can supply additional information.

The Next Step...

Public comments on the Proposed Plan are being accepted from January 31–February 29, 2024. A public meeting is scheduled on February 7, 2024, and will be held virtually via conference call or similar. Details regarding how to access the virtual public meeting will be (or have been) released through a Public Notice in the local newspaper. Comments received will be considered in making the final remedial determination in the ROD for MRP Site 4. See the *Community Involvement Opportunities* text box on **Page 1** for more information on submitting comments during the public comment period or at the public meeting.

The Administrative Record: A Source for Reports and Studies

The Administrative Record contains reports and studies used to identify and justify the proposed remedy for MRP Site 4. These documents, as well as other investigation and cleanup information for NAF El Centro, are available to the public in the Administrative Record file.

To access this file, please contact the following:

Ms. Diane Silva
Certified Command Records Manager
Naval Facilities Engineering Systems Command Southwest

750 Pacific Highway, Code EV33
 NBSD Bldg. 3519
 San Diego, CA 92132
 (619) 556-1280
diane.c.silva.civ@us.navy.mil
 Monday through Friday, 8:00 a.m. to 5:00 p.m.

A partial record file for MRP Site 4 is also available for public review at the following locations:

El Centro Public Library
 1140 North Imperial Avenue
 El Centro, CA 92243
 (760) 337-4565

Brawley Library
 400 Main Street
 Brawley, CA 92227
 (760) 344-1891

For more information about MRP Site 4, please contact:

Ms. Amy Tong
Remedial Project Manager, NAF El Centro
Naval Facilities Engineering Systems Command Southwest

750 Pacific Highway, Floor 11
 San Diego, CA 92132-5190
 (619) 705-5437
amy.tong.civ@us.navy.mil

Mr. Roberto Sanchez
Environmental Restoration Program Manager,
NAF El Centro

1605 Third Street, Building 504, Code 45RF
 El Centro, CA 92243
 (760) 339-2258
roberto.j.sanchez4.civ@us.navy.mil

Ms. Irena Edwards
Project Manager
Department of Toxic Substances Control

5796 Corporate Avenue
 Cypress, CA 90630
 (714) 484-5385
irena.edwards@dtsc.ca.gov

Ms. Jessica Bagby
Water Resources Control Engineer
California Regional Water Quality Control Board
Colorado River Basin

73-720 Fred Waring Drive, Suite 100
 Palm Desert, CA 92260
 (760) 776-8972
jessica.bagby@waterboards.ca.gov

GLOSSARY

This glossary defines in nontechnical language the more commonly used environmental terms appearing in this Proposed Plan. The definitions do not constitute the Navy's, DTSC's, or Colorado River Basin RWQCB official use of terms and phrases for regulatory purposes.

Administrative Record – Consists of reports, data, and historical documents used in the selection of remedial or environmental management alternatives. The Administrative Record is available for public review.

Applicable or Relevant and Appropriate Requirements (ARARs) – Applicable requirements are 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 found at a CERCLA site. Relevant and appropriate requirements address problems or situations at a site that are sufficiently similar (that is, relevant) to the circumstances of the proposed response action and that are well suited (that is, appropriate) to the conditions of the site.

Background Threshold Value (BTV) – The amount (concentration) of naturally occurring chemical substances present in the environment that have not been influenced by humans, or anthropogenic levels—concentrations of chemicals that are human-made and present in the environment but are non-site sources.

California Department of Toxic Substances Control (DTSC) – A part of the California Environmental Protection Agency and the lead environmental regulatory agency for NAF El Centro. Its mission is to protect public health and the environment from toxic substances.

Cancer Risk – Cancer risks are expressed as a number reflecting the increased chance that a person will develop cancer if exposed to chemicals or substances. The acceptable risk range as defined in the NCP is 1×10^{-4} to 1×10^{-6} , meaning there is 1 additional chance in 10,000 (1×10^{-4}) to 1 additional chance in 1,000,000 (1×10^{-6}) that a person will develop cancer if exposed to a site that is not remediated.

Chemical of Concern (COC) – Any contaminant that is shown to pose possible human health or ecological risk at a site.

Colorado River Basin Regional Water Quality Control Board (RWQCB) – The California water quality authority, which is part of California Environmental Protection Agency. Its mission is to preserve, enhance, and restore California's water resources.

Composite Soil Sample – Sample consisting of subsamples collected within a specific area or volume of soil. For MRP Site 4, composite soil samples consisted of five aliquots combined as one sample.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) – The federal statute enacted in 1980 and amended in 1986 by SARA that establishes a comprehensive, statutory framework for identifying, investigating, and cleaning up releases of hazardous substances to the environment.

Conceptual Site Model – A written or illustrative representation of the conditions and physical, chemical, and biological processes that control the transport, migration, and potential impacts of contamination to human and ecological receptors.

Ecological Risk Assessment (ERA) – The application of a formal framework, analytical process, or model to estimate the effects of human action(s) on a natural resource and to interpret the significance of those effects in light of the uncertainties identified in each component of the assessment process. Such analysis includes initial hazard identification, exposure and dose response assessments, and risk characterization.

Engineering Controls – Engineered or constructed physical barriers to contain or prevent exposure, such as signs and fences.

Exposure Point Concentrations – Exposure point concentrations are estimated from measured or modeled concentrations, and pathway-specific intakes (doses) are estimated using hypothetical human receptors for evaluation in the subsequent risk calculations.

Feasibility Study (FS) – A cost and engineering study that looks at all of the possible cleanup options that are available and evaluates their ability to clean up contamination at a site.

Hazard Index (HI) – The sum of more than one HQ for multiple substances or multiple exposure pathways. The HI indicates the risk from the presence of multiple substances at one site or exposures to the same chemicals through multiple media and pathways.

Hazard Quotient (HQ) – The potential to cause noncarcinogenic health effects and ecological risks.

Human Health Risk Assessment (HHRA) – The process used to determine potential risks to humans exposed to environmental contaminants.

Institutional Controls (ICs) – Nonengineered methods, such as administrative or legal controls, that help minimize the potential for human exposure to contamination or protect the integrity of the remedy. Examples include

prohibiting access, or prohibitions on activities without written permission.

Medium of Concern – A matrix (soil, groundwater, surface water, sediment, air) that has the potential to be impacted by site operations.

Munitions Constituents (MC) – Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials. MC also includes emission, degradation, or breakdown elements of such ordnance or munitions.

Munitions and Explosives of Concern (MEC) – Refers to specific categories of military munitions that may pose unique explosive risks, including unexploded ordnance, discarded military munitions, or MC when present in high enough concentrations to pose an explosive hazard.

Munitions Response Program (MRP) – The program designed to address munitions response actions, including investigation, removal, and remedial actions to address the explosives safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, materials potentially presenting an explosive hazard, or MC.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – 40 Code of Federal Regulations 300, which provides the organizational structure and procedures for government responses to oil and hazardous substance spills, releases, and sites where these materials have been released.

Nine Evaluation Criteria – The NCP outlines the approach for comparing remedial alternatives using the following evaluation criteria:

- **Threshold Criteria**
 - Overall Protection of Human Health and the Environment – Addresses whether a remedy provides adequate protection and how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or ICs.
 - Compliance with ARARs – A statutory requirement for remedy selection that an alternative will either meet all of the ARARs or that there is a good rationale for waiving an ARAR.
- **Balancing Criteria**
 - Long-term Effectiveness and Permanence – Addresses the expected residual risk that will remain at the site after completion of the remedial action and the ability of a remedy to maintain

a reliable protection of human health and the environment in the future and in the short term.

- Reduction of Toxicity, Mobility, or Volume through Treatment – The anticipated performance of the treatment technologies that a remedy may employ in their ability to reduce toxicity, mobility, or volume of contamination.
- Short-term Effectiveness – The short-term impacts of the alternatives on the neighboring community, the industrial workers, remedial construction workers, and the surrounding environment, including potential threats to human health and the environment associated with the collection, handling, treatment, and transport of hazardous substances. Also includes the time until protectiveness is achieved and the time to achieve cleanup levels.
- Implementability – The technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement an option.
- Cost – Encompasses all construction, operation, and maintenance costs incurred over the life of the project, expressed as the net present value of these costs.
- **Modifying Criteria**
 - State Acceptance – Substantial and meaningful state involvement in the Proposed Plan.
 - Community Acceptance – The public's general response to the alternatives described in the Proposed Plan and the RI/FS Reports. The Responsiveness Summary section of the ROD addresses specific responses to the public comments.

Polycyclic Aromatic Hydrocarbon (PAH) Compounds

– PAH compounds are composed of multiple carbon and hydrogen rings. PAH compounds can occur naturally in coal, crude oil, and gasoline. PAH compounds are also produced by the thermal decomposition (burning) of organic matter. PAH compounds are also found in coal tar, which was used as a binder during the early years of the production of clay skeet targets.

Preliminary Assessment (PA) – An initial investigation that identifies potential areas of contamination for further investigation. Consists of a review of available historical information (also known as a records search), aerial photographs, employee interviews, and site visits to gain information concerning installation activities and land use.

Principal Threat Waste: Wastes that generally will be considered to constitute principal threats include, but are not limited to, the following:

- Liquid source material – Waste contained in drums, lagoons, or tanks; free product in the subsurface (that is, nonaqueous phase liquids) containing contaminants of concern (generally excluding groundwater).
- Mobile source material – Surface soil or subsurface soil containing high concentrations of COCs that are (or potentially are) mobile due to wind entrainment, volatilization (for example, volatile organic compounds), surface runoff, or subsurface transport.
- Highly toxic source material – Buried drummed non-liquid wastes, buried tanks containing non-liquid wastes, or soils containing significant concentrations of highly toxic materials.

Proposed Plan – A document that summarizes remedial alternatives, presents the recommended cleanup action, explains the recommendation, and solicits comments from the community.

Public Comment Period – The time allowed for the members of an affected community to express views or concerns regarding an action proposed to be taken by the Navy, such as a rulemaking, permit application, or remedy selection.

Receptors – Any living organism or environmental medium that is exposed to contamination from a discharge.

Record of Decision (ROD) – A document that documents and records the decision on the cleanup of a site made by the lead and support agencies, with input from the public through the Proposed Plan. The lead agency and the supporting agency sign the ROD.

Remedial Action – Actual construction or implementation phase of a site cleanup (or remedy) to achieve RAOs.

Remedial Action Objectives (RAOs) – Environmental goals established to protect human health and the environment and provide the foundation used to develop cleanup remedies.

Remedial Investigation (RI) – A detailed study that includes media sampling to determine the nature and extent of contamination at a site. The RI emphasizes data collection and site characterization, including sampling and monitoring, as necessary, to gather sufficient information to determine the necessity for remedial action and to support the evaluation of remedial alternatives, if necessary. The RI includes a risk assessment that estimates risks to human health and the environment as a result of the contamination.

Risk-based Concentration (RBC) – The first step in developing cleanup goals is the calculation of RBCs for each COC identified in the RAOs. At MRP Site 4, RBCs were calculated based on both a target cancer risk of 1×10^{-5} (1 in 100,000) and a target noncancer HI of 1 for COCs with cancer and noncancer effects, and the lowest resulting concentration was used as the RBC. RBCs based on target cancer risk of 1×10^{-5} and an HI of 1 were deemed acceptable based on an estimate of residual risk (post-remediation) presented in the FS for MRP Site 4. RBCs based on target cancer risk of 1×10^{-5} and an HI of 1 were concurred by state regulatory agencies during the FS.

Screening Levels – RBC levels established for individual contaminants that are used for initial data comparisons to characterize the potential nature and extent of contamination present at a site. Exceedance of regulatory screening levels does not necessarily represent risk to receptors.

Site Inspection (SI) – An onsite investigation to determine whether there is a release or potential release and the nature of the associated threats. The SI consists of limited sampling and analysis designed to verify the findings of the PA. The data collected must also support the decision to continue to the next phase (RI and possibly FS) or remove the site from further investigation.

Superfund Amendments and Reauthorization Act of 1986 (SARA) – A federal law that amended CERCLA on October 17, 1986. SARA reflected the United States Environmental Protection Agency’s experience in administering the complex CERCLA Program during its first 6 years and made several changes and additions to the program.

Unlimited Use and Unrestricted Exposure (UU/UE) – No unacceptable human health or ecological risks or hazards associated with a CERCLA release are present at the site, and the site can be used for any use without land use controls.

Please print your comments here and/or return via one of the methods listed below

Name: _____

Affiliation (group/agency): _____

Address: _____

Submit comments to:

Mr. Roberto Sanchez
Environmental Restoration Program Manager
 NAF El Centro
 1605 Third Street
 Building 504, Code 45RF
 El Centro, CA 92243
 (760) 339-2258
 roberto.j.sanchez4.civ@us.navy.mil



Mr. Roberto Sanchez
 Environmental Restoration Program Manager
 NAF El Centro
 1605 Third Street
 Building 504, Code 45RF
 El Centro, CA 92243

Public Comment Period: **January 31–February 29, 2024**

Virtual Public Meeting: **February 7, 2024, 5:00–6:00 p.m.**