Appendix E: MDAS Documentation

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This Memorandum is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. ______

Carrier No. ______

Page 1 of 1 VLS SAN DIEGO, LLC (Name of carrier) (SCAC) Date ______

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:
Consignee TWENTYNINE PALMS MARINE CORP BASE
Street MARINE CORP BASE
City TWENTY NINE PALMS State CA Zip Code 92278

FROM:
Shipper BAUGOY NV BLDG 6093
Street FLH FISH RD UPPER BASE
City BAUGOY State WA Zip Code
24 hr. Emergency Contact Tel. No. ______

Route Vehicle Number

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
34		SCRAP METAL	DU	12,000		
✓						

PLACARDS TENDERED: YES ☐ NO ☐

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding ______ per ______."
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of Item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

______ Signature

REMIT C.O.D. TO: ADDRESS

COD Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

TOTAL CHARGES $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER BAUGOY
PER [redacted]

CARRIER VLS
PER
DATE 3-13-24

3

Permanent post-office address of shipper.

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DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

PREVIOUS EDITION MAY BE USED

1	2	3	4	5	6	7	23	24	25	26	27	28	29	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
DOD AAC			RI FROM	M&S			UI		UNIT		QUANTITY			SER	SUPPLE-MENTARY ADDRESS			SIG	FUND	DIS-TRI-BU-TION	PRO-JECT		PRI	REQD	DEL	DATE	ADV		RI		O/P	COND	MGT																			

UNIT PRICE		DOLLARS	CTS
DOLLARS	CTS		

1. TOTAL PRICE

2. SHIP FROM

3. SHIP TO
CGS Inc.
Riverside,
CA

4. MARK FOR

5. DOC DATE	6. NMFC	7. FRT RATE	8. TYPE CARGO	9. PS

10. QTY. REC'D	11.UP	12. UNIT WEIGHT	13. UNIT CUBE	14. UFC	15. SL

16. FREIGHT CLASSIFICATION NOMENCLATURE
SCRAP metal

17. ITEM NOMENCLATURE
Munitions Debris - MDAS

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
Drum	34	12,000 Pnds	

[redacted]

23. DATE RECEIVED
3-13-24

24. DOCUMENT NUMBER & SUFFIX (30-44)

25. NATIONAL STOCK NO. & ADD (8-22)

26. RIC (4-6)
UI (23-24)
QTY (25-29)
CON CODE (71)
DIST (55-56)
UP (74-80)

Tetra Tech
1899 Powers Ferry Rd., Ste. 400
Atlanta, GA 30339

Inspected b [redacted]
Tony Aguirr
571-232-9224

Certifi [redacted]
Forres
253-666-3400

27. ADDITIONAL DATA

"The material listed on this form has been inspected and processed by DDESB approved means as required by DOD policy and to the best of my knowledge and belief does not pose an explosive hazard."

Site Location/Project Number: 112G08005-NW194112

Container/Seal: MDAS-15/2741; MDAS-16/2792; MDAS-17/2708; MDAS-18/2742; MDAS-19/2775; MDAS-20/2793; MDAS-21/2781; MDAS-22/2794; MDAS-23/2758; MDAS-24/2779; MDAS-25/2706; MDAS-26/2795; MDAS-27/2745; MDAS-28/2724; MDAS-29/2722; MDAS-30/2731; MDAS-31/2711; MDAS-32/2727; MDAS-33/2734; MDAS-34/2720; MDAS-35/2723; MDAS-36/2780; MDAS-37/2772; MDAS-38/2716; MDAS-39/2712; MDAS-40/2718; MDAS-41/2719; MDAS-42/2719 ; MDAS-43/2765; MDAS-44/2748; MDAS-45/2778; MDAS-46/2744; MDAS-47/2785; MDAS-48/2750

FormFlow (DLA)

Appendix F: MEC HA Results

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MEC HA Summary Information

Comments

Site ID: UXO 3 - Site D

Date: 12/14/2023

Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.

A. Enter a unique identifier for the site:

UXO 3 - Site D

Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.

Ref. No. Title (include version, publication date)

1 Site Investigation Report (Final, Oct 2023)

2 Program Preliminary Assessment Report (Final, Feb 2017)

B. Briefly describe the site:

1. Area (include units): 37 acres
2. Past munitions-related use:

OB/OD Area

3. Current land-use activities (list all that occur):

road/utility/culvert maitenance and construction.

4. Are changes to the future land-use planned? No
5. What is the basis for the site boundaries?

Historic documents and field observations.

6. How certain are the site boundaries?

Uncertain; nature and extent have not been defined.

Reference(s) for Part B:

Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

C. Historical Clearances

1. Have there been any historical clearances at the site? No, none

Reference(s) for Part C:

[redacted]

D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)

Add Figure upon completion of step outs

Site ID: **UXO 3 - Site D**
Date: **12/14/2023**

Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Bombs	100	lb	AN-M46	Pyrotechnic	No			0.1	Subsurface Only	Surface items removed during SI. Presumed to be in subsurface based on geophysical data and site history.
2	Fuzes			Mk 19	High Explosive	Yes	Impact	UNK	0.1	Subsurface Only	Surface items removed during SI. Presumed to be in subsurface based on geophysical data and site history.

Reference(s) for table above:
Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

Bulk Explosive Information

Item No.	Explosive Type	Comments
1	Not applicable	

Reference(s) for table above:
Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

Site ID: **UXO 3 - Site D**
Date: **12/14/2023**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Maintenance workers	6	20	**120**	0.1	Maintenance (e.g., culverts) and vegetation management near Escolar Road
2	Visitors	8	1	**8**	0.1	No interest at site attracting any visitors of note, Lower Base site
3	Utility workers	4	20	**80**	5	repairs as needed, utilities present at the site.
			Total Potential Contact Time (receptor hrs/yr):	**208**		
			Maximum intrusive depth at site (ft):		**5**	

Reference(s) for table above:

Site ID: **UXO 3 - Site D**
Date: **12/14/2023**

Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

	Score
Baseline Conditions:	**100**
Surface Cleanup:	**100**
Subsurface Cleanup:	**100**

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS? **369** feet

2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? **No**

MEC Item(s) used to calculate the ESQD for current use activities

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

4. Current use activities are 'Outside of the ESQD arc', based on Question 2.'

	Score
Baseline Conditions:	**0**
Surface Cleanup:	**0**
Subsurface Cleanup:	**0**

Comments

Based on the Hazardous Fragment Distance (HFD).

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities ***Score***

Select the category that best describes the site accessibility under the current use scenario:

Moderate Accessibility

High grass and marsh serves as a limited barrier to entry.

Baseline Conditions: **55**
Surface Cleanup: **55**
Subsurface Cleanup: **55**

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

Current Use Activities :

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **208** hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **15** Score

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

OB/OD Area

Baseline Conditions: **180**
Surface Cleanup: **110**
Subsurface Cleanup: **30**

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: **0.1** ft
The deepest intrusive depth: **5** ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located only subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.' For 'Current Use Activities', only Baseline Conditions are considered.

150 ***Score***

Future Use Activities

Deepest intrusive depth: ft

Not enough information has been entered to determine the input factor category.

Score

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? **Yes**

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion may cause exposure/burial of near surface items.

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.'

	Score
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**10**

Reference(s) for above information:

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.
The 'Amount of MEC' category is 'OB/OD Area'.

Has a technical assessment shown that MEC in the OB/OD Area is DMM? **No**

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: **Yes**

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- Munitions with white phosphorus filler
- High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

The following table is used to determine scores associated with MEC classification categories:

UXO Special Case	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'.

	Score
Baseline Conditions:	**180**
Surface Cleanup:	**180**
Subsurface Cleanup:	**180**

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: **Small**

	Score
Baseline Conditions:	**40**
Surface Cleanup:	**40**
Subsurface Cleanup:	**40**

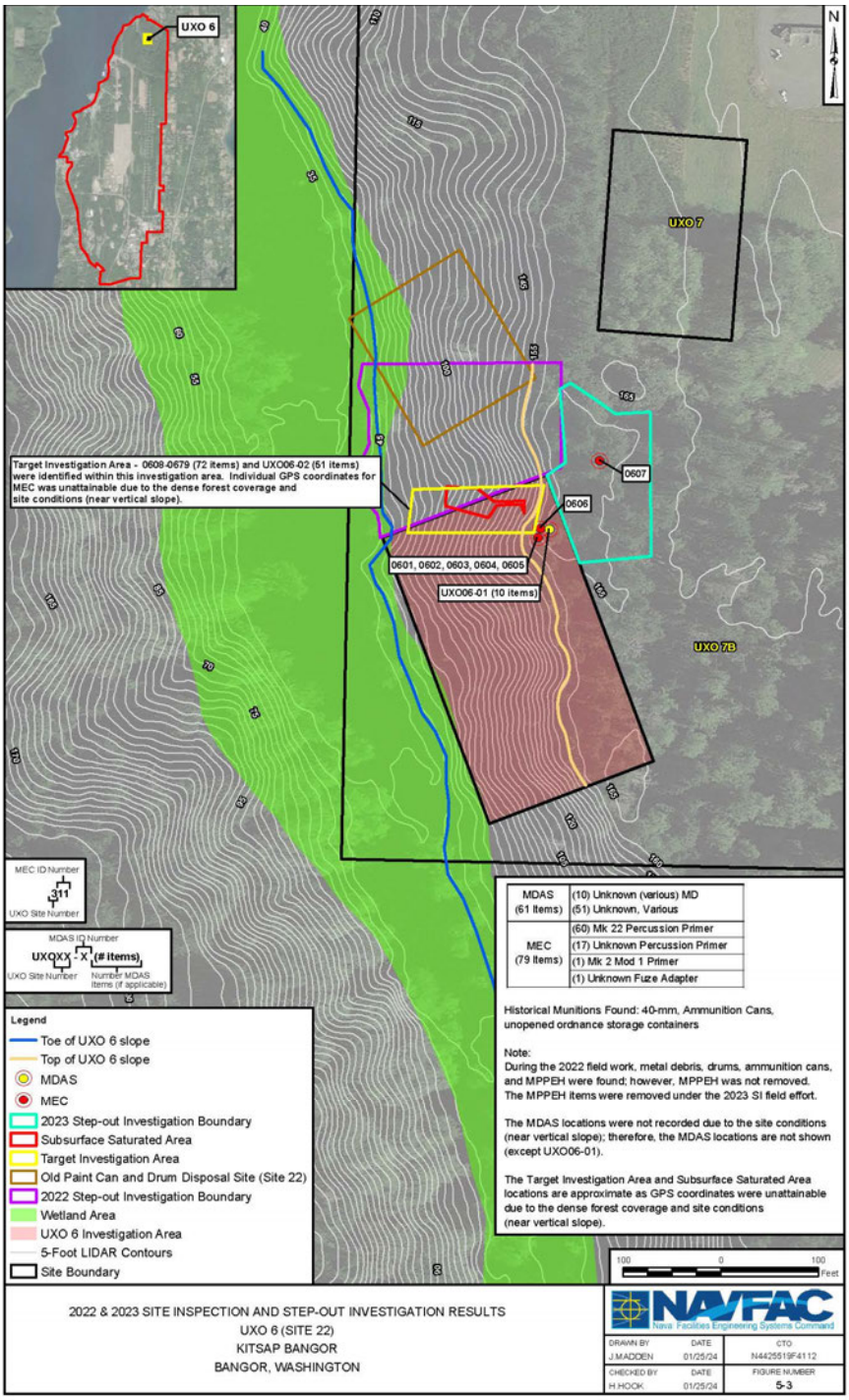
Scoring Summary

Site ID:	UXO 3 - Site D	a. Scoring Summary for Current Use Activities	
Date:	12/14/2023	Response Action Cleanup:	No Response Action
Input Factor		**Input Factor Category**	**Score**
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors		Outside of the ESQD arc	0
III. Site Accessibility		Moderate Accessibility	55
IV. Potential Contact Hours		<10,000 receptor-hrs/yr	15
V. Amount of MEC		OB/OD Area	180
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII. Migration Potential		Possible	30
VIII. MEC Classification		UXO Special Case	180
IX. MEC Size		Small	40
		Total Score	**750**
		Hazard Level Category	**2**

MEC HA Hazard Level Determination		
Site ID: UXO 3 - Site D		
Date: 12/14/2023		
	Hazard Level Category	**Score**
a. Current Use Activities	**2**	**750**
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?		
Are cultural resources located within the MRS or within the ESQD arc?		
Are significant ecological resources located within the MRS or within the ESQD arc?		

MEC HA Summary Information

		Comments
Site ID:	UXO 6 - Site 22	
Date:	12/14/2023	
Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.		
A. Enter a unique identifier for the site:		
UXO 6 - Site 22		
Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.		
Ref. No. Title (include version, publication date)		
1 Site Inspection Report (Final, Oct 2023)		
2 Program Preliminary Assessment Report (Final, Feb 2017)		
B. Briefly describe the site:		
1. Area (include units):	1.65 acres	
2. Past munitions-related use:		
Storage		Surface disposal only expected
3. Current land-use activities (list all that occur):		
4. Are changes to the future land-use planned?	No	
5. What is the basis for the site boundaries?		
Historic documents and field observations.		
6. How certain are the site boundaries?		
Mostly certain; nature still not defined but extent has been defined.		
Reference(s) for Part B:		
Site Inspection Report (Final, Oct 2023) [redacted]		
Program Preliminary Assessment Report (Final, Feb 2017)		
C. Historical Clearances		
1. Have there been any historical clearances at the site?	No, none	A partial surface clearance was performed over 100% of accessible areas including step outs. The survey included a total area of 2.15 acres. The survey is considered incomplete due to the steep slope of the site. All activities were performed using fall protection however no seeding for completeness was performed.
Reference(s) for Part C:	[redacted]	
D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)		


UXO 6
UXO 7
UXO 7B
Target Investigation Area - 0608-0679 (72 items) and UXO06-02 (51 items) were identified within this investigation area. Individual GPS coordinates for MEC was unattainable due to the dense forest coverage and site conditions (near vertical slope).
0607
0606
0601, 0602, 0603, 0604, 0605
UXO06-01 (10 items)
N
MEC ID Number
311
UXO Site Number
MDAS ID Number
UXOXX - X (# items)
UXO Site Number
Number MDAS items (if applicable)
Legend
Toe of UXO 6 slope
Top of UXO 6 slope
MDAS
MEC
2023 Step-out Investigation Boundary
Subsurface Saturated Area
Target Investigation Area
Old Paint Can and Drum Disposal Site (Site 22)
2022 Step-out Investigation Boundary
Wetland Area
UXO 6 Investigation Area
5-Foot LIDAR Contours
Site Boundary
MDAS (61 Items)
(10) Unknown (various) MD
(51) Unknown, Various
MEC (79 Items)
(60) Mk 22 Percussion Primer
(17) Unknown Percussion Primer
(1) Mk 2 Mod 1 Primer
(1) Unknown Fuze Adapter
Historical Munitions Found: 40-mm, Ammunition Cans, unopened ordnance storage containers
Note:
During the 2022 field work, metal debris, drums, ammunition cans, and MPPEH were found; however, MPPEH was not removed. The MPPEH items were removed under the 2023 SI field effort.
The MDAS locations were not recorded due to the site conditions (near vertical slope); therefore, the MDAS locations are not shown (except UXO06-01).
The Target Investigation Area and Subsurface Saturated Area locations are approximate as GPS coordinates were unattainable due to the dense forest coverage and site conditions (near vertical slope).
100 0 100 Feet
2022 & 2023 SITE INSPECTION AND STEP-OUT INVESTIGATION RESULTS
UXO 6 (SITE 22)
KITSAP BANGOR
BANGOR, WASHINGTON
NAVFAC
Naval Facilities Engineering Systems Command
DRAWN BY J.MADDEN
DATE 01/25/24
CTO N4425519F4112
CHECKED BY H.HOCK
DATE 01/25/24
FIGURE NUMBER 5-3

Site ID: **UXO 6 - Site 22**
Date: **12/14/2023**

Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Fuzes			AN-M46	Low Explosive Filler in a fragmenting round	No			0	Surface and Subsurface	Surface MEC encountered during SI. Subsurface burial is not likely due to the presence of steep slopes.
2	Fuzes			Mk 2 Mod 1	Low Explosive Filler in a fragmenting round	No			0	Surface and Subsurface	Surface MEC encountered during SI. Subsurface burial is not likely due to the presence of steep slopes.
3	Fuzes			Unknown	Low Explosive Filler in a fragmenting round	No			0	Surface and Subsurface	Surface MEC encountered during SI. Subsurface burial is not likely due to the presence of steep slopes.

Reference(s) for table above:
Site Inspection Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

Bulk Explosive Information

Item No.	Explosive Type	Comments
1	Not applicable	

Reference(s) for table above:

[redacted]

Site ID: **UXO 6 - Site 22**
Date: **12/14/2023**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Marines training	50	6	**300**	0.1	limited Marines training.
2	Visitors	8	1	**8**	0.1	No interest at site attracting any visitors of note, Lower Base site in restricted EOD training range area.
			Total Potential Contact Time (receptor hrs/yr):	**308**		
			Maximum intrusive depth at site (ft):		**0.1**	

Reference(s) for table above:

[redacted]

Site ID: UXO 6 - Site
22
Date: 12/14/2023

Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

	Score
Baseline Conditions:	100
Surface Cleanup:	100
Subsurface Cleanup:	100

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS? 22 feet

2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? No

MEC Item(s) used to calculate the ESQD for current use activities

Item #1. Fuzes (Low Explosive Filler in a fragmenting round)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

4. Current use activities are 'Outside of the ESQD arc', based on Question 2.'

	Score
Baseline Conditions:	0
Surface Cleanup:	0
Subsurface Cleanup:	0

Comments

Based on the Hazardous Fragment Distance (HFD).

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities ***Score***

Select the category that best describes the site accessibility under the current use scenario:

Very Limited Accessibility

Baseline Conditions:	5
Surface Cleanup:	5
Subsurface Cleanup:	5

MEC is only present in the areas where extremely steep slopes serve as a barrier to entry. SI conducted using fall protection rope access. Also, UXO danger signs installed at site.

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

Current Use Activities :

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **308** hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **15** Score

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

Storage

Surface disposal only expected

Baseline Conditions: **25**
Surface Cleanup: **10**
Subsurface Cleanup: **5**

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: **0** ft
The deepest intrusive depth: **0.1** ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' For 'Current Use Activities', only Baseline Conditions are considered.

240 ***Score***

Future Use Activities

Deepest intrusive depth: ft

Not enough information has been entered to determine the input factor category.

Score

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? **Yes**

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion may cause exposure/burial of near surface items.

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.'

	Score
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**10**

Reference(s) for above information:

Site Inspection Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Storage'. It is assumed that the MEC items in this MRS are DMM.

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: **Yes**

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- Munitions with white phosphorus filler
- High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

None of the items listed in the 'Munitions, Bulk Explosive Info' Worksheet were identified as 'fuzed'.

The following table is used to determine scores associated with MEC classification categories:

Fuzed DMM Special Case	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'Fuzed DMM Special Case'.

	Score
Baseline Conditions:	**105**
Surface Cleanup:	**105**
Subsurface Cleanup:	**105**

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: **Small**

	Score
Baseline Conditions:	**40**
Surface Cleanup:	**40**
Subsurface Cleanup:	**40**

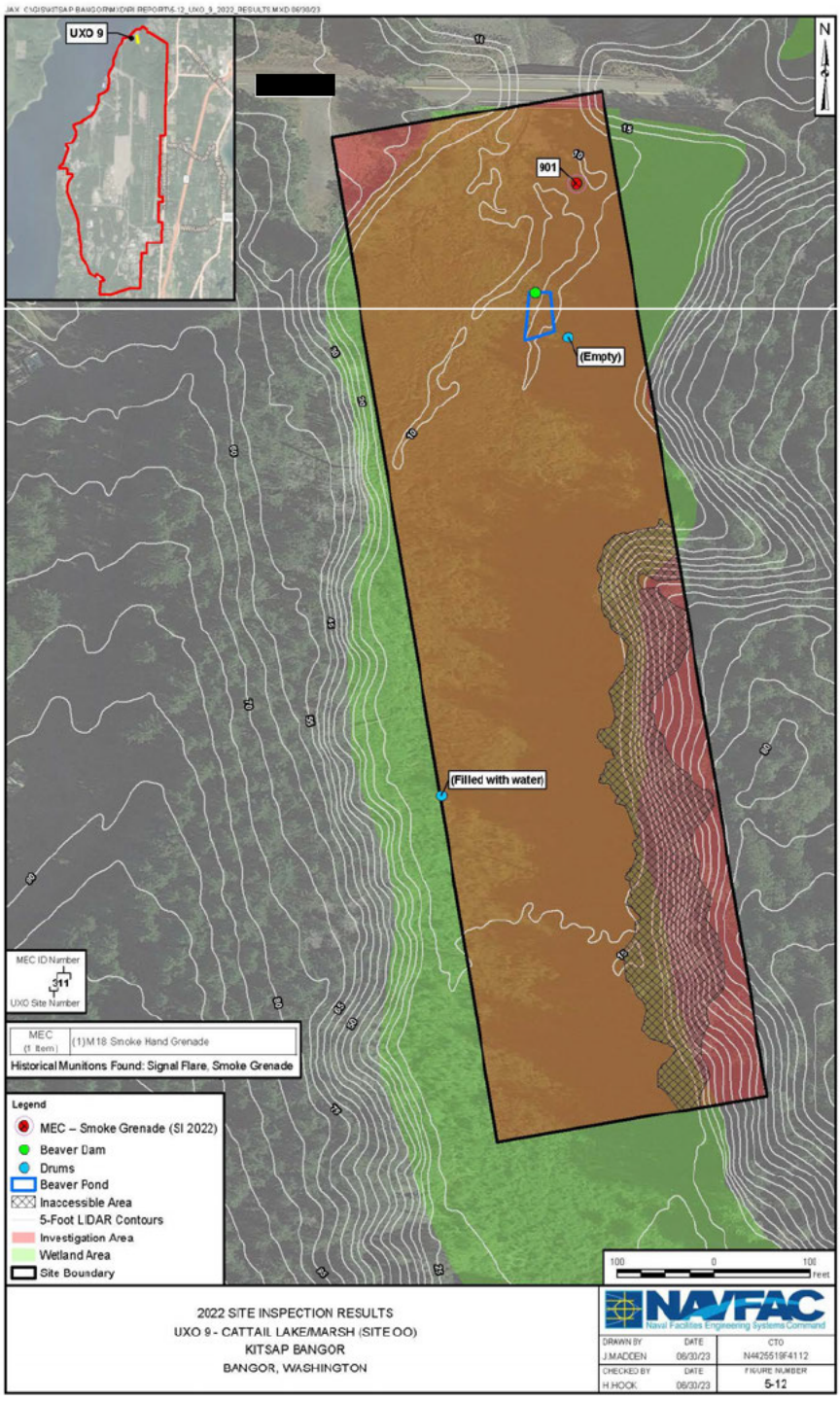
Scoring Summary

Site ID:	UXO 6 - Site 22	a. Scoring Summary for Current Use Activities	
Date:	12/14/2023	Response Action Cleanup:	No Response Action
Input Factor		**Input Factor Category**	**Score**
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors		Outside of the ESQD arc	0
III. Site Accessibility		Very Limited Accessibility	5
IV. Potential Contact Hours		<10,000 receptor-hrs/yr	15
V. Amount of MEC		Storage	25
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240
VII. Migration Potential		Possible	30
VIII. MEC Classification		Fuzed DMM Special Case	105
IX. MEC Size		Small	40
		Total Score	**560**
		Hazard Level Category	**3**

MEC HA Hazard Level Determination		
Site ID: UXO 6 - Site 22		
Date: 12/14/2023		
	Hazard Level Category	**Score**
a. Current Use Activities	**3**	**560**
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	No	
Are cultural resources located within the MRS or within the ESQD arc?	No	
Are significant ecological resources located within the MRS or within the ESQD arc?	Yes	

MEC HA Summary Information

		Comments
Site ID:	UXO 9 - Site OO	
Date:	2/23/2023	
Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.		
A. Enter a unique identifier for the site:		
UXO 9 - Site OO		
Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.		
Ref. No.	Title (include version, publication date)	
1	Site Investigation Report (Internal Draft, Jan 2023)	
2	Program Preliminary Assessment Report (Final, Feb 2017)	
B. Briefly describe the site:		
1. Area (include units):	7 acres	
2. Past munitions-related use:		
Safety Buffer Areas		Reportedly used as a buffer area for an OB/OD range
3. Current land-use activities (list all that occur):		
4. Are changes to the future land-use planned?	No	
5. What is the basis for the site boundaries?		
Historic documents and previous EOD responses.		
6. How certain are the site boundaries?		
Fairly certain, entire site boundary investigated during SI.		
Reference(s) for Part B:		
Site Investigation Report (Internal Draft, Jan 2023) **Program Preliminary Assessment Report (Final, Feb 2017)**	[redacted]	
C. Historical Clearances		
1. Have there been any historical clearances at the site?	No, none	A partial surface clearance was performed during the SI. 6.3 acres of the 7 acre site was surveyed. Inaccessible marsh areas were not surveyed.
Reference(s) for Part C:		
Site Investigation Report (Internal Draft, Jan 2023) **Program Preliminary Assessment Report (Final, Feb 2017)**	[redacted]	
D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)		


UXO 9
N
901
(Empty)
(Filled with water)
MEC ID Number
11
UXO Site Number
MEC (1 Item)
(1)M18 Smoke Hand Grenade
Historical Munitions Found: Signal Flare, Smoke Grenade
Legend
MEC – Smoke Grenade (SI 2022)
Beaver Dam
Drums
Beaver Pond
Inaccessible Area
5-Foot LIDAR Contours
Investigation Area
Wetland Area
Site Boundary
100 0 100 Feet
2022 SITE INSPECTION RESULTS
UXO 9 - CATTAIL LAKE/MARSH (SITE OO)
KITSAP BANGOR
BANGOR, WASHINGTON
NAVFAC
Naval Facilities Engineering Systems Command
DRAWN BY J.MADDEN DATE 06/30/23
CTO N4425519F4112
CHECKED BY H.HOCK DATE 06/30/23
FIGURE NUMBER 5-12

Site ID: **UXO 9 - Site OO**
Date: **2/23/2023**

Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Pyrotechnic			L312	Pyrotechnic	No			0.1	Surface and Subsurface	Signal Flare; Surface item removed during SI. Presumed to be in subsurface based on site history.
2	Pyrotechnic			M18	Pyrotechnic	Yes	Time	UNK	0.1	Surface and Subsurface	Smoke Grenade; Surface item removed during SI. Historical item presumed to be in subsurface based on site history.

Reference(s) for table above:
Site Investigation Report (Internal Draft, Jan 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

Bulk Explosive Information

Item No.	Explosive Type	Comments
1	Not applicable	

Reference(s) for table above:

Site Investigation Report (Internal Draft, Jan 2023)

[redacted]

Site ID: **UXO 9 - Site OO**
Date: **2/23/2023**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Recreational users/visitors	150	120	**18,000**	0.25	Walking trail at site; assumed 10hrs/month
2	USACE seeding/tree planting	4	120	**480**	3	Assumed 10hrs/month
			Total Potential Contact Time (receptor hrs/yr):	**18,480**		
			Maximum intrusive depth at site (ft):		**3**	

Reference(s) for table above:

[redacted]

Site ID: UXO 9 - Site
OO
Date: 2/23/2023

Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'Pyrotechnic'.

	Score
Baseline Conditions:	60
Surface Cleanup:	60
Subsurface Cleanup:	60

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS?	0 feet	Non-fragmenting munitions items with no overpressure hazard
2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc?	No	
MEC Item(s) used to calculate the ESQD for current use activities		

Item #1. Pyrotechnic (Pyrotechnic)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

4. Current use activities are 'Outside of the ESQD arc', based on Question 2.'

	Score
Baseline Conditions:	0
Surface Cleanup:	0
Subsurface Cleanup:	0

Comments

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities ***Score***

Select the category that best describes the site accessibility under the current use scenario:

Moderate Accessibility

Baseline Conditions: **55**

Surface Cleanup: **55**

Subsurface Cleanup: **55**

Surface water and soft sediment are natural barriers to accessing the site

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

Current Use Activities :

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **18,480** hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **40** Score

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

Safety Buffer Areas

Baseline Conditions: **30**
Surface Cleanup: **10**
Subsurface Cleanup: **5**

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: **0.1** ft
The deepest intrusive depth: **3** ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located only subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.' For 'Current Use Activities', only Baseline Conditions are considered.

150 ***Score***

Future Use Activities

Deepest intrusive depth: ft

Not enough information has been entered to determine the input factor category.

Score

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? **Yes**

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion is possible due to surface water flooding.

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.' *Score*

Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**10**

Reference(s) for above information:

Site Investigation Report (Internal Draft, Jan 2023)

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Safety Buffer Areas'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: **No**

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- Munitions with white phosphorus filler
- High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

The following table is used to determine scores associated with MEC classification categories:

UXO	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'UXO'. *Score*

Baseline Conditions:	**110**
Surface Cleanup:	**110**
Subsurface Cleanup:	**110**

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: **Small**

Score

Baseline Conditions:	**40**
Surface Cleanup:	**40**
Subsurface Cleanup:	**40**

Scoring Summary

Site ID:	UXO 9 - Site OO	a. Scoring Summary for Current Use Activities	
Date:	2/23/2023	Response Action Cleanup:	No Response Action
Input Factor		**Input Factor Category**	**Score**
I. Energetic Material Type		Pyrotechnic	60
II. Location of Additional Human Receptors		Outside of the ESQD arc	0
III. Site Accessibility		Moderate Accessibility	55
IV. Potential Contact Hours		10,000 to 99,999 receptor-hrs/yr	40
V. Amount of MEC		Safety Buffer Areas	30
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII. Migration Potential		Possible	30
VIII. MEC Classification		UXO	110
IX. MEC Size		Small	40
		Total Score	**515**
		Hazard Level Category	**4**

MEC HA Hazard Level Determination		
Site ID: UXO 9 - Site OO		
Date: 2/23/2023		
	Hazard Level Category	**Score**
a. Current Use Activities	**4**	**515**
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	No	
Are cultural resources located within the MRS or within the ESQD arc?	No	
Are significant ecological resources located within the MRS or within the ESQD arc?	Yes	

MEC HA Summary Information

Site ID: UXO 16 - Site LL

Date: 12/14/2023

Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.

A. Enter a unique identifier for the site:

UXO 16 - Site LL

Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.

Ref. No.	Title (include version, publication date)
1	Site Investigation Report (Final, Oct 2023)
2	Program Preliminary Assessment Report (Final, Feb 2017)

B. Briefly describe the site:

1. Area (include units): 10 acre
2. Past munitions-related use:

OB/OD Area

3. Current land-use activities (list all that occur):

performed for road/utility/culvert maitenance and construction.

4. Are changes to the future land-use planned? No
5. What is the basis for the site boundaries?

Historic documents and field observations.

6. How certain are the site boundaries?

Uncertain; nature and extent have not been defined.

Reference(s) for Part B:

Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

C. Historical Clearances

1. Have there been any historical clearances at the site? No, none

Reference(s) for Part C:

Site Investigation Report (Final, Oct 2023)

[redacted]

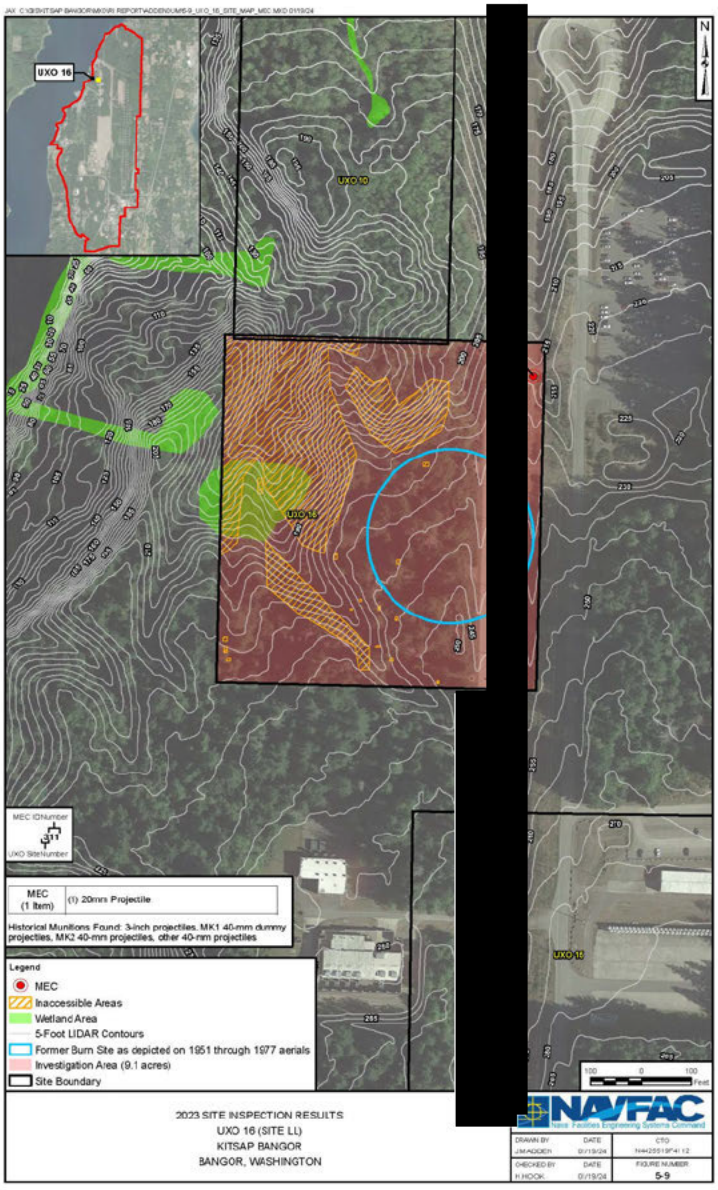
D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)

Comments

Burn Pit

A partial surface clearance was performed during the SI. A detector aided surface survey was performed on a total of 7.3 acres of the 10 acre site. Inaccessible sloped areas were not surveyed.

Previously during security fence installation activities within the eastern portion of the site a munitions response action was conducted within the fence installation area consisting of excavation and screening of soils and debris for the presence of MEC and MPPEH. Over 1,000 pounds of MDAS (Inert/Dummy Rounds) were recovered. No MEC or MDEH were recovered.


UXO 16
UXO 10
UXO 15
UXO 18
N
MEC IDNumber
UXO SiteNumber
MEC (1 Item)
(1) 20mm Projectile
Historical Munitions Found: 3-inch projectiles, MK1 40-mm dummy projectiles, MK2 40-mm projectiles, other 40-mm projectiles
Legend
MEC
Inaccessible Areas
Wetland Area
5-Foot LIDAR Contours
Former Burn Site as depicted on 1951 through 1977 aerials
Investigation Area (9.1 acres)
Site Boundary
100 0 100
Feet
2023 SITE INSPECTION RESULTS
UXO 16 (SITE LL)
KITSAP BANGOR
BANGOR, WASHINGTON
NAVFAC
DRAWN BY
DATE
CTO
JIM ADDER
01/19/24
CHECKED BY
DATE
FIGURE NUMBER
H. HOOK
01/19/24
5-9

Site ID: **UXO 16 - Site LL**
Date: **12/14/2023**

Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Artillery	20	mm		High Explosive	No			0.01	Surface and Subsurface	Anticipated Dummy Round
2	Artillery	40	mm		High Explosive	No			0.01	Surface and Subsurface	Anticipated Dummy Round
3	Artillery	3	inches		High Explosive	No			0.01	Surface and Subsurface	Anticipated Dummy Round
4	Artillery	5	inches		High Explosive	No			0.01	Surface and Subsurface	Anticipated Dummy Round
5	Artillery	6	inches		High Explosive	No			0.01	Surface and Subsurface	Anticipated Dummy Round

Reference(s) for table above:
Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

[redacted]

Bulk Explosive Information

Item No.	Explosive Type	Comments
1	Not applicable	

Reference(s) for table above:

[redacted]

Site ID: **UXO 16 - Site LL**
Date: **12/14/2023**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Maintenance workers	6	20	120	0.1	Maintenance such as vegetation management.
2	Visitors	8	1	8	0.1	No interest at site attracting any visitors of note, Lower Base site inside highly secured area
			Total Potential Contact Time (receptor hrs/yr):	128		
			Maximum intrusive depth at site (ft):		0.1	

Reference(s) for table above:
Site Investigation Report (Final, Oct 2023)
Program Preliminary Assessment Report (Final, Feb 2017)

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Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

	Score
Baseline Conditions:	**100**
Surface Cleanup:	**100**
Subsurface Cleanup:	**100**

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS?	450 feet
2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc?	Yes

3. Please describe the facility or feature.

Buildings are present

MEC Item(s) used to calculate the ESQD for current use activities

Item #1. Fuzes (20mm, Propellant)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

4. Current use activities are 'Inside the MRS or inside the ESQD arc', based on Question 2.'	*Score*
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**30**

Comments

Based on the Hazardous Fragment Distance (HFD).

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities — ***Score***

Select the category that best describes the site accessibility under the current use scenario:

Limited Accessibility

Site located in highly secure area and in dense woods/vegetation.

	Score
Baseline Conditions:	15
Surface Cleanup:	15
Subsurface Cleanup:	15

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

***Current Use Activities*:**

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **128** receptor hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **15** Score

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

OB/OD Area

Baseline Conditions: **180**
Surface Cleanup: **110**
Subsurface Cleanup: **30**

Surface/Subsurface disposal

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: **0.01** ft
The deepest intrusive depth: **0.1** ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located only subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.' For 'Current Use Activities', only Baseline Conditions are considered.

150 ***Score***

Future Use Activities

Deepest intrusive depth: ft

Not enough information has been entered to determine the input factor category.

Score

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? Yes

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion may cause exposure/burial of near surface items.

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.'

	Score
Baseline Conditions:	30
Surface Cleanup:	30
Subsurface Cleanup:	10

Reference(s) for above information:

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.
The 'Amount of MEC' category is 'OB/OD Area'.

Has a technical assessment shown that MEC in the OB/OD Area is DMM?

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: No

- Submunitions
- Rifle-propelled 40mm projectiles (often called 40mm grenades)
- Munitions with white phosphorus filler
- High explosive anti-tank (HEAT) rounds
- Hand grenades
- Fuzes
- Mortars

None of the items listed in the 'Munitions, Bulk Explosive Info' Worksheet were identified as 'fuzed'.

The following table is used to determine scores associated with MEC classification categories:

Unfuzed DMM	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'Unfuzed DMM'.

	Score
Baseline Conditions:	45
Surface Cleanup:	45
Subsurface Cleanup:	45

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: Small

	Score
Baseline Conditions:	40
Surface Cleanup:	40
Subsurface Cleanup:	40

Scoring Summary

Site ID:	UXO 16 - Site LL
Date:	12/14/2023

a. Scoring Summary for Current Use Activities

Response Action Cleanup: **No Response Action**

Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Inside the MRS or inside the ESQD arc	30
III. Site Accessibility	Limited Accessibility	15
IV. Potential Contact Hours	<10,000 receptor-hrs/yr	15
V. Amount of MEC	OB/OD Area	180
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150
VII. Migration Potential	Possible	30
VIII. MEC Classification	Unfuzed DMM	45
IX. MEC Size	Small	40
	Total Score	**605**
	Hazard Level Category	**3**

MEC HA Hazard Level Determination		
Site ID: UXO 16 - Site LL		
Date: 12/14/2023		
	Hazard Level Category	**Score**
a. Current Use Activities	**3**	**605**
Characteristics of the MRS		
Is critical infrastructure located within the MRS or within the ESQD arc?	Yes	
Are cultural resources located within the MRS or within the ESQD arc?	No	
Are significant ecological resources located within the MRS or within the ESQD arc?	No	

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