

Table A

MRS Background Information

DIRECTIONS: Record the background information below for the MRS to be evaluated. Much of this information is available from Service and DoD databases. If the MRS is located on a FUDS property, the suitable FUDS property information should be substituted. In the **MRS Summary**, briefly describe the UXO, DMM, or MC that are known or suspected to be present, the exposure setting (the MRS's physical environment), any other incidental non-munitions-related contaminants (e.g., benzene, trichloroethylene) found at the MRS, and any potentially exposed human and ecological receptors. If possible, include a map of the MRS.

Munitions Response Site Name: WAAF-006-R-01

Component: Active Army

WEBCASS: 2221A.1024

Installation/Property Name: Wheeler Army Airfield (WAAF)

Location (City, County, State): Oahu, Honolulu County, Hawaii

Site Name/Project Name (Project No.): WAAF-006-R-01; 1940s Small Arms Range

Date Information Entered/Updated: September 29th, 2025

Point of Contact (Name/Phone): Darrin Dukes, (808) 687-2249

Project Phase (check only one):

☐ PA	☐ SI	☐ RI	☐ FS	☐ RD
☐ RA-C	☐ RIP	☐ RA-O	☐ RC	☒ LTM

Media Evaluated (check all that apply):

☐ Groundwater	☐ Sediment (human receptor)
☒ Surface Soil	☐ Surface Water (ecological receptor)
☐ Sediment (ecological receptor)	☐ Surface Water (human receptor)

MRS Summary:

The document referenced in this MRSP consists of the following:

- Stakeholder Involvement (SHI) Notification, Dated **xxxxx 2026**.
- Remedial Action Completion Report (RACR), Dated February 2013.
- Decision Document (DD), Dated July 2012.
- Remedial Investigation (RI), Dated June 2011.

The MRS is a former small arms range and is located in a densely vegetated gulch, encompassing 1.05 acres, used in the 1940s to 1950s (RACR, Section 2.1, Page 2-1).

No source for MEC was identified for the MRS. HRR, the SI, and the RI site investigations confirm the absence of MEC hazards at this MRS (RACR, Section 3.3.1, Page 3-4).

EHE is Rated as NKSH: No source for MEC was identified for the MRS. Historical records, the SI, and the RI site investigations confirm the absence of MEC hazards at this MRS (RACR, Section 3.3.1, Page 3-4).

CHE is Rated as NKSH: Per the RACR, no MEC was found or was used at the MRS. There is no historical use of CWM at the MRS and no documentation of CWM use was found during the review of historical documents for WAAF-006-R-01.

HHE is Rated as NLR: The MRS completed all remedial actions. The only thing remaining is Land Use Controls and Five-Year Reviews (RACR, Section 6.3, Page 6-2).

Stakeholder Involvement: **TBD**

Description of Pathways for Human and Ecological Receptors: Pathways are incomplete for MEC in the surface and subsurface (RACR, Section 3.3.1, Page 3-4).

Exposure pathways for workers, installation personnel engaged in PT, trespassers, recreational users, construction workers, and ecological receptors **are incomplete because the unacceptable risk to those receptors has been removed in this remedial action. Contamination exceeding unrestricted use action levels remains in the surface soil at the MRS (RACR, Section 6.2, Page 6-1).**

TABLE A CONTINUED

Description of Receptors (Human & Ecological): Based on current and future land use, potential receptors include: workers, installation personnel engaged in PT, trespassers and recreational users, future hypothetical residents, construction workers, as well as ecological receptors (RACR, Section 3.3.1, Page 3-3).

Table 1
EHE Module: Munitions Type Data Element Table

DIRECTIONS: Below are 11 classifications of munitions and their descriptions. Circle the scores that correspond with all the munitions types known or suspected to be present at the MRS.

Note: The terms *practice munitions*, *small arms ammunition*, *physical evidence*, and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Sensitive	- UXO that are considered most likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive [HE] grenades, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions). - Hand grenades containing energetic filler. - Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30
High explosive (used or damaged)	- UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." - DMM containing a high-explosive filler that have: - Been damaged by burning or detonation - Deteriorated to the point of instability.	25
Pyrotechnic (used or damaged)	- UXO containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades). - DMM containing a pyrotechnic filler other than white phosphorus (e.g., flares, signals, simulators, smoke grenades) that have: - Been damaged by burning or detonation - Deteriorated to the point of instability.	20
High explosive (unused)	- DMM containing a high-explosive filler that: - Have not been damaged by burning or detonation - Are not deteriorated to the point of instability.	15
Propellant	- UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). - DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are: - Damaged by burning or detonation - Deteriorated to the point of instability.	15
Bulk secondary high explosives, pyrotechnics, or propellant	- DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). - DMM that are bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10
Pyrotechnic (not used or damaged)	- DMM containing a pyrotechnic filler (i.e., red phosphorus), other than white phosphorus filler, that: - Have not been damaged by burning or detonation - Are not deteriorated to the point of instability.	10
Practice	- UXO that are practice munitions that are not associated with a sensitive fuze. - DMM that are practice munitions that are not associated with a sensitive fuze and that have not: - Been damaged by burning or detonation - Deteriorated to the point of instability.	5
Riot control	UXO or DMM containing a riot control agent filler (e.g., tear gas).	3
Small arms	Used munitions or DMM that are categorized as small arms ammunition. (Physical evidence or historical evidence that no other types of munitions [e.g., grenades, subcaliber training rockets, demolition charges] were used or are present on the MRS is required for selection of this category.)	2
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0
MUNITIONS TYPE	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 30).	0

DIRECTIONS: Document any MRS-specific data used in selecting the **Munitions Type** classifications in the space provided.

No MEC was discovered during the HRR, SI, and RI (DD, Section 2.2.1. Page 2-3).

In accordance with Army Policy, Tables 2-9 have been omitted.

Table 10

Determining the EHE Module Rating

	Source	Score	Value
DIRECTIONS: - From Tables 1–9, record the data element scores in the Score boxes to the right. - Add the Score boxes for each of the three factors and record this number in the Value boxes to the right. - Add the three Value boxes and record this number in the EHE Module Total box below. - Circle the appropriate range for the EHE Module Total below. - Circle the EHE Module Rating that corresponds to the range selected and record this value in the EHE Module Rating box found at the bottom of the table. Note: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.	Explosive Hazard Factor Data Elements		
	Munitions Type	Table 1	0
	Source of Hazard	Table 2	0
	Accessibility Factor Data Elements		
	Location of Munitions	Table 3	
	Ease of Access	Table 4	
	Status of Property	Table 5	
	Receptor Factor Data Elements		
	Population Density	Table 6	
	Population Near Hazard	Table 7	
	Types of Activities/Structures	Table 8	
	Ecological and/or Cultural Resources	Table 9	
	EHE MODULE TOTAL		0
	EHE Module Total	EHE Module Rating	
	92 to 100	A	
	82 to 91	B	
	71 to 81	C	
	60 to 70	D	
	48 to 59	E	
	38 to 47	F	
	less than 38	G	
	Alternative Module Ratings	Evaluation Pending	
		No Longer Required	
		No Known or Suspected Explosive Hazard	
	EHE MODULE RATING	NKSH	

Table 11

CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the scores that correspond with all the CWM configurations known or suspected to be present at the MRS.

Note: The terms *CWM/UXO*, *CWM/DMM*, *physical evidence*, and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
CWM, that are either UXO, or explosively configured damaged DMM	The CWM known or suspected of being present at the MRS are: - CWM that are UXO (i.e., CWM/UXO) - Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged.	30
CWM mixed with UXO	The CWM known or suspected of being present at the MRS are undamaged CWM/DMM or CWM not configured as a munition that are commingled with conventional munitions that are UXO.	25
CWM, explosive configuration that are undamaged DMM	The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20
CWM/DMM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS are: - Nonexplosively configured CWM/DMM either damaged or undamaged - Bulk CWM (e.g., ton container).	15
CAIS K941 and CAIS K942	The CWM/DMM known or suspected of being present at the MRS are CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12
CAIS (chemical agent identification sets)	CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10
Evidence of no CWM	Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0
CWM CONFIGURATION	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 30).	0

DIRECTIONS: Document any MRS-specific data used in selecting the **CWM Configuration** classifications in the space provided.

Per the RACR, no MEC was found or was used at the MRS. There is no historical use of CWM at the MRS and no documentation of CWM use was found during the review of historical documents for WAAF-006-R-01.

**IAW Army Guidance, Tables 12-19
have been omitted.**

Table 20
Determining the CHE Module Rating

	Source	Score	Value	
DIRECTIONS: 1. From Tables 11–19, record the data element scores in the Score boxes to the right. 2. Add the Score boxes for each of the three factors and record this number in the Value boxes to the right. 3. Add the three Value boxes and record this number in the CHE Module Total box below. 4. Circle the appropriate range for the CHE Module Total below. 5. Circle the CHE Module Rating that corresponds to the range selected and record this value in the CHE Module Rating box found at the bottom of the table. Note: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.	CWM Hazard Factor Data Elements			
	CWM Configuration	Table 11	0	0
	Sources of CWM	Table 12		
	Accessibility Factor Data Elements			
	Location of CWM	Table 13		
	Ease of Access	Table 14		
	Status of Property	Table 15		
	Receptor Factor Data Elements			
	Population Density	Table 16		
	Population Near Hazard	Table 17		
	Types of Activities/Structures	Table 18		
	Ecological and/or Cultural Resources	Table 19		
	CHE MODULE TOTAL			0
	CHE Module Total		CHE Module Rating	
	92 to 100		A	
	82 to 91		B	
	71 to 81		C	
	60 to 70		D	
	48 to 59		E	
	38 to 47		F	
less than 38		G		
Alternative Module Ratings		Evaluation Pending		
		No Longer Required		
		No Known or Suspected CWM Hazard		
CHE MODULE RATING		NKSH		

Table 21

HHE Module: Groundwater Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's groundwater and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional groundwater contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the groundwater, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum The Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right (maximum value = H).		

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the groundwater migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the groundwater is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in groundwater has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the groundwater receptors at the MRS.

Classification	Description	Value
Identified	There is a threatened water supply well downgradient of the source and the groundwater is a current source of drinking water or source of water for other beneficial uses such as irrigation/agriculture (equivalent to Class I or IIA aquifer).	H
Potential	There is no threatened water supply well downgradient of the source and the groundwater is currently or potentially usable for drinking water, irrigation, or agriculture (equivalent to Class I, IIA, or IIB aquifer).	M
Limited	There is no potentially threatened water supply well downgradient of the source and the groundwater is not considered a potential source of drinking water and is of limited beneficial use (equivalent to Class IIIA or IIIB aquifer, or where perched aquifer exists only).	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

No Known or Suspected Groundwater MC Hazard



Media not evaluated.

Groundwater is 500' bgs at the MRS (RACR, Section 2.1.5, Page 2-9).

Table 22

HHE Module: Surface Water – Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface water contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard with human endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum The Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right (maximum value = H).		

Migratory Pathway Factor		
DIRECTIONS: Circle the value that corresponds most closely to the surface water migratory pathway at the MRS.		
Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

Receptor Factor		
DIRECTIONS: Circle the value that corresponds most closely to the surface water receptors at the MRS.		
Classification	Description	Value
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

No Known or Suspected Surface Water (Human Endpoint) MC Hazard		☐
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Media not evaluated.

There are no surface water sources on the MRS (DD, Section 2.1.2, Page 2-2).

Table 23

HHE Module: Sediment – Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional sediment contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard with human endpoints present in the sediment, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	CHF Value	Sum The Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right maximum value = H).		

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

No Known or Suspected Sediment (Human Endpoint) MC Hazard



Media not evaluated.

There are no surface water sources on the MRS. Therefore, there are no sediment sources (DD, Section 2.1.2, Page 2-2). The sediment sampling mentioned in the RI concerns an adjacent MRS, WAAF-008-R-01 (RI, Figure 5-12, Page 179 (actual)).

Table 24

HHE Module: Surface Water – Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface water contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard with ecological endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right (maximum value = H).		

Migratory Pathway Factor			
DIRECTIONS: Circle the value that corresponds most closely to the surface water migratory pathway at the MRS.			
Classification	Description	Value	
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H	
Potential	Contamination in surface water has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M	
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L	
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).		

Receptor Factor			
DIRECTIONS: Circle the value that corresponds most closely to the surface water receptors at the MRS.			
Classification	Description	Value	
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H	
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M	
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L	
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).		

No Known or Suspected Surface Water (Ecological Endpoint) MC Hazard	☐
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Media not evaluated.

There are no surface water sources on the MRS (DD, Section 2.1.2, Page 2-2).

Table 25

HHE Module: Sediment – Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional sediment contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard with ecological endpoints present in the sediment, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right (maximum value = H).		

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	

No Known or Suspected Sediment (Ecological Endpoint) MC Hazard



Media not evaluated.

There are no surface water sources on the MRS. Therefore, there are no sediment sources (DD, Section 2.1.2, Page 2-2). The Sediment sampling mentioned in the RI concerns an adjacent MRS, WAAF-008-R-01 (RI, Figure 5-12, Page 179 (actual)).

Table 26

HHE Module: Surface Soil Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface soil and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface soil contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the surface soil, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratio
ANTIMONY	12	31	.387
ARSENIC	10	34	.294
COPPER	220	3100	.071
LEAD	190	400	.475
		TOTAL FROM TABLE 27	11.88802
CHF Scale	CHF Value	Sum the Ratios	13.11502
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CONTAMINANT HAZARD FACTOR	DIRECTIONS: Record <u>the CHF Value</u> from above in the box to the right (maximum value = H).		M

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface soil is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface soil has moved only slightly beyond the source (i.e., tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface soil to a potential point of exposure (possibly due to the presence of geological structures or physical controls).	L
MIGRATORY PATHWAY FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	M

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface soil to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface soil to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface soil to which contamination has moved or can move.	L
RECEPTOR FACTOR	DIRECTIONS: Record <u>the single highest value</u> from above in the box to the right (maximum value = H).	M

No Known or Suspected Surface Soil MC Hazard



Soil sampling can be found in the RI, Table 5-8, Page 177 (actual)).

HHE Module: Supplemental Contaminant Hazard Factor Table

DIRECTIONS: Only use this table if there are more than five contaminants in any given medium present at the MRS. This is a supplemental table designed to hold information about contaminants that do not fit in the previous tables. Indicate the **media** in which these contaminants are present. Then record all **contaminants**, their **maximum concentrations** and their **comparison values** (from Appendix B of the Primer) in the table below. Calculate and record the **ratio** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** for each medium on the appropriate media-specific tables.

[illegible]

Table 28

Determining the HHE Module Rating

DIRECTIONS:

1. Record the letter values (H, M, L) for the **Contaminant Hazard, Migration Pathway, and Receptor Factors** for the media (from Tables 21–26) in the corresponding boxes below.
2. Record the media's three-letter combinations in the **Three-Letter Combination** boxes below (three-letter combinations are arranged from Hs to Ms to Ls).
3. Using the **HHE Ratings** provided below, determine each media's rating (A–G) and record the letter in the corresponding **Media Rating** box below.

Media (Source)	Contaminant Hazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value		Three-Letter Combination (Hs-Ms-Ls)		Media Rating (A-G)
Groundwater (Table 21)							
Surface Water/Human Endpoint (Table 22)							
Sediment/Human Endpoint (Table 23)							
Surface Water/Ecological Endpoint (Table 24)							
Sediment/Ecological Endpoint (Table 25)							
Surface Soil (Table 26)	M	M	M		MMM		D

DIRECTIONS (cont.): 4. Select the single highest Media Rating (A is highest; G is lowest) and enter the letter in the HHE Module Rating box. Note: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more media, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.	HHE MODULE RATING		NLR
	HHE Ratings (for reference only)		
	Combination	Rating	
	HHH	A	
	HHM	B	
	HHL	C	
	HMM		
	HML	D	
	MMM		
	HLL	E	
MML			
MLL	F		
LLL	G		
Alternative Module Ratings	Evaluation Pending		
	No Longer Required		
	No Known or Suspected MC Hazard		

The MRS completed all remedial actions. The only thing remaining is Land Use Controls and Five-Year Reviews (RACR, Section 6.3, Page 6-2).

Table 29

MRS Priority

DIRECTIONS: In the chart below, circle the letter **rating** for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Circle the corresponding numerical **priority** for each module. If information to determine the module rating is not available, choose the appropriate alternative module rating. The MRS Priority is the single highest priority; record this relative priority in the **MRS Priority or Alternative MRS Rating** at the bottom of the table.

Note: An MRS assigned Priority 1 has the highest relative priority; an MRS assigned Priority 8 has the lowest relative priority. Only an MRS with CWM known or suspected to be present can be assigned Priority 1; an MRS that has CWM known or suspected to be present cannot be assigned Priority 8.

EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority
		A	1		
A	2	B	2	A	2
B	3	C	3	B	3
C	4	D	4	C	4
D	5	E	5	D	5
E	6	F	6	E	6
F	7	G	7	F	7
G	8			G	8
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Longer Required		No Longer Required		No Longer Required	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	
MRS PRIORITY or ALTERNATIVE MRS RATING				NLR	