MEC HA Summary Information

Comments

Site ID:
Ricochet Area MRS
State Game Lands 211

Date: 10/5/2011

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:

Ricochet Area MRS

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)

Ref. No.	Title
1	Inventory, Final, 2003
2	Historical Records Review, Final, 2007
3	Site Inspection, Final, 2008
4	Community Relations Plan, Final, 2010
5	Remedial Investigation Report, 2011
6	
7	
8	
9	
10	
11	
12	

B. Briefly describe the site:

1. Area (include units): 3,262 acres

2. Past munitions-related use:

Safety Buffer Areas

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

Recreational- State Game Lands 211

4. Are changes to the future land-use planned?   No

5. What is the basis for the site boundaries?

The 0.5 anomalies per acre contour line, taken from the Category 1-3 anomaly density calculations, were used as the boundary between Ricochet Area MRS and Sharp Mountain MRS. The boundary is interpolated between the large contiguous area to the west and the smaller dispersed areas to the east. The area also includes the former Cold Spring firing point.

6. How certain are the site boundaries?

Confident in boundaries

Reference(s) for Part B:

[Select Ref(s)]

C. Historical Clearances

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

2. If a clearance occurred:

    a. What year was the clearance performed?

    b. Provide a description of the clearance activity (e.g., extent, depth, amount of munitions-related items removed, types and sizes of removed items, and whether metal detectors were used):

Reference(s) for Part C:

[Select Ref(s)]

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

Site ID: **Ricochet Area MRS**   **State Game Lands 211**
Date: **10/5/2011**

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	155	mm	1	High Explosive	No	UNK	UNK	0	Surface and Subsurface	Found on Surface
2	Artillery	75	mm		High Explosive	Yes	Impact	Armed	0	Surface and Subsurface	Total 2 found on the surface
3	Artillery	75	mm		High Explosive	UNK	UNK	UNK	0	Surface and Subsurface	Total 5 found 0-0.25 ft bgs
4	Artillery	75	mm		High Explosive	Yes	Impact	Armed	0.25	Subsurface Only	75mm APHE
5	Artillery			MK-2A4	Propellant	UNK	UNK	UNK	1	Subsurface Only	DMM found at a depth of 1 ft (4 items). MK2A4 Primer filled with black powder.
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Reference(s) for table above:

Select Ref(s)

Bulk Explosive Information

Item No.	Explosive Type	Comments
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Reference(s) for table above:

Select Ref(s)

Site ID: **Ricochet Area MRS**   **State Game Lands 211**
Date: **10/5/2011**

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	Recreation (hunting, hiking, fishing)	5,000	150	**750,000**	1	High use recreational months (April-December) area at 16 hours/month x 9 months = 144 hours Low use recreational months (January - March) are 4 hours/month x 3 months = 12 hours Grand Total = 156 hours rounded to 150 hours
2	PGC Maintenance (trail, food plots)	6	312	**1,872**	2	SGL 211 staff is 6 people at 6hrs/week x 52 weeks = 312 hrs/individual
3	Timbering operations	4	720	**2,880**	2	See notes
4						
5						
6						
7						
8						
9						
10						
11						
12						

Total Potential Contact Time (receptor hrs/yr):   **754,752**

Maximum intrusive depth at site (ft):   **2**

Reference(s) for table above:

Select Ref(s)

Site ID: **Ricochet Area MRS**   **State Game Lands 211**
Date: **10/5/2011**

Planned Remedial or Removal Actions

Response Action No.	Response Action Description	Expected Resulting Minimum MEC Depth (ft)	Expected Resulting Site Accessibility	Will land use activities change if this response action is implemented?	What is the expected scope of cleanup?	Comments
1	No Action	0	Moderate Accessibility	No	No MEC cleanup	
2	Containment and Controls	0	Moderate Accessibility	No	No MEC cleanup	Includes sigange, awareness program, brochures, videos, and UXO Construction Support
3	Surface Removal with Containment and Controls	0.5	Moderate Accessibility	No	Cleanup of MECs located on the surface only	Done over 3,262 acres
4	Focused Surface Removal with Containment and Controls	0.5	Moderate Accessibility	No	Cleanup of MECs located on the surface only	Only done over 1,334 acres
5	Subsurface Removal to Instrument Detection Depth with Containment and Controls	2.5	Moderate Accessibility	No	Cleanup of MECs located both on the surface and subsurface	Done over 3,262 acres

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Select Ref(s)

Ricochet Area MRS

Site ID: **State Game Lands 211**

Date: **10/5/2011**

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? **234** 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.

Nature classes, studies, hikers, hunters, etc can congregate within the MRS and on trails.

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

105 MM HEAT   [Select MEC(s)]

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**

5. Are there future plans to locate or construct features or facilities where people may congregate within the MRS, or within the ESQD arc?

6. Please describe the facility or feature.

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

[Select MEC(s)]

The following table is used to determine scores associated with the location of additional human receptors (future 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

7. Please answer Question 5 above to determine the scores.   *Score*

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

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**

Future Use Activities

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

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Reference(s) for above information:

Select Ref(s)

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Moderate Accessibility'.

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

Response Alternative No. 2: Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Moderate Accessibility'.

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

Response Alternative No. 3: Surface Removal with Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Moderate Accessibility'.

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

Response Alternative No. 4: Focused Surface Removal with Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Moderate Accessibility'.

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

Response Alternative No. 5: Subsurface Removal to Instrument Detection Depth with Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Moderate Accessibility'.

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: **754,752** receptor hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **70** Score

Future Use Activities :

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

Based on the table above, this corresponds to a input factor score of: **#NAME?** Score

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **754,752**

Based on the table above, this corresponds to input factor scores of: *Score*

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 2: Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **754,752**

Based on the table above, this corresponds to input factor scores of: *Score*

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 3: Surface Removal with Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **754,752**

Based on the table above, this corresponds to input factor scores of: *Score*

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 4: Focused Surface Removal with Containment and Controls

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **754,752**

Based on the table above, this corresponds to input factor scores of: *Score*

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 5: Subsurface Removal to Instrument Detection Depth with

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **754,752**

Based on the table above, this corresponds to input factor scores of: **Score**

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

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** ft
The deepest intrusive depth: **2** 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*

Response Alternative No. 1: No Action
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0** ft
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **2** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. 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.' *Score*

Baseline Conditions: **240**
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 2: Containment and Controls
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0** ft
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **2** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. 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.' *Score*

Baseline Conditions: **240**
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 3: Surface Removal with Containment and Controls
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0.5** ft
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **2** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. 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.' *Score*

Baseline Conditions:
Surface Cleanup: **150**
Subsurface Cleanup:

Response Alternative No. 4: Focused Surface Removal with Containment and Controls
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0.5** ft
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **2** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. 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.' *Score*

Baseline Conditions:
Surface Cleanup: **150**
Subsurface Cleanup:

Response Alternative No. 5: Subsurface Removal to Instrument Detection Depth with Containment and
Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **2.5** ft
Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.
Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **2** ft

Because the shallowest minimum MEC depth is greater than the deepest intrusive depth, the intrusive depth does not overlap. 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 does not overlap with subsurface MEC.' *Score*

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

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).

Frost heave or movement from original placement from human processes (e.g., construction)

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:

Select Ref(s)

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.

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

At least one item listed in the 'Munitions, Bulk Explosive Info' Worksheet was identified as 'fuzed'.

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:	Ricochet Area MRS	S	a. Scoring Summary for Current Use Activities	
Date:	10/5/2011		Response Action Cleanup: No MEC cleanup	
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 Receptor			Inside the MRS or inside the ESQD arc	30
III. Site Accessibility			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	70
V. Amount of MEC			Safety Buffer Areas	30
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			UXO	110
IX. MEC Size			Small	40
			Total Score	**705**
			Hazard Level Category	**3**

Site ID:	Ricochet Area MRS	S	c. Scoring Summary for Response Alternative 1: No Action	
Date:	10/5/2011		Response Action Cleanup: No MEC cleanup	
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			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	70
V. Amount of MEC			Safety Buffer Areas	30
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			UXO	110
IX. MEC Size			Small	40
			Total Score	**705**
			Hazard Level Category	**3**

Site ID:	Ricochet Area MRS	S	d. Scoring Summary for Response Alternative 2: Containment and Controls	
Date:	10/5/2011		Response Action Cleanup: No MEC cleanup	
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			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	70
V. Amount of MEC			Safety Buffer Areas	30
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			UXO	110
IX. MEC Size			Small	40
			Total Score	**705**
			Hazard Level Category	**3**

Site ID:	Ricochet Area MRS	S	e. Scoring Summary for Response Alternative 3: Surface Removal with Containment and Controls	
Date:	10/5/2011		Response Action Cleanup: Cleanup of MECs located on the surface only	
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			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	50
V. Amount of MEC			Safety Buffer Areas	10
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth			Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	150
VII. Migration Potential			Possible	30
VIII. MEC Classification			UXO	110
IX. MEC Size			Small	40
			Total Score	**575**
			Hazard Level Category	**3**

Site ID:	Ricochet Area MRS	S	f. Scoring Summary for Response Alternative 4: Focused Surface Removal with Containment and Controls	
Date:	10/5/2011		Response Action Cleanup: Cleanup of MECs located on the surface only	
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			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	50
V. Amount of MEC			Safety Buffer Areas	10
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth			Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	150
VII. Migration Potential			Possible	30
VIII. MEC Classification			UXO	110
IX. MEC Size			Small	40
			Total Score	**575**
			Hazard Level Category	**3**

Site ID:	Ricochet Area MRS	S	g. Scoring Summary for Response Alternative 5: Subsurface Removal to Instrument Detection Depth with Containment and Controls	
Date:	10/5/2011		Response Action Cleanup: Cleanup of MECs located both on the surface and subsurface	
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			Moderate Accessibility	55
IV. Potential Contact Hours			100,000 to 999,999 receptor hrs/yr	20
V. Amount of MEC			Safety Buffer Areas	5
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth			Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	25
VII. Migration Potential			Possible	10
VIII. MEC Classification			UXO	110
IX. MEC Size			Small	40
			Total Score	**395**
			Hazard Level Category	**4**

MEC HA Hazard Level Determination - Ricochet Area MRS, Safety Buffer Zone/Ricochet Area		
Site ID: State Game Lands 211		
Date: 10/5/2011		
	Hazard Level Category	Score
a. Current Use Activities	3	705
c. Response Alternative 1: No Action	3	705
d. Response Alternative 2: Containment and Controls	3	705
e. Response Alternative 3: Surface Removal with Containment and Controls	3	575
f. Response Alternative 4: Focused Surface Removal with Containment and Controls	3	575
g. Response Alternative 5: Subsurface Removal to Instrument Detection Depth with Containment and Controls	4	395
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?	Yes	
Are significant ecological resources located within the MRS or within the ESQD arc?	Yes	