DEPARTMENT OF DEFENSE

Office of the Secretary

32 CFR Part 179

Munitions Response Site Prioritization Protocol

AGENCY: Department of Defense.

ACTION: Proposed rule.

SUMMARY: The Department of Defense (DoD) is proposing a rule that establishes the Munitions Response Site Prioritization Protocol (hereinafter referred to as the ''Protocol''). The purpose of the Protocol is to assign a relative priority for munitions responses to each location in the inventory of munitions response sites known or suspected of containing unexploded ordnance, discarded military munitions, or munitions constituents.

DATES: Written comments on this proposed rule will be accepted until November 20, 2003.

ADDRESSES: Written comments should be mailed to: Munitions Response Site Prioritization Protocol, P.O. Box 4231, McLean, Virginia 22103–4231. Comments will also be accepted via electronic mail (''e-mail'') at *mmrp@www.denix.osd.mil* or via the World Wide Web at *http://www.denix.osd/mil/MMRP.* For comments submitted via electronic mail, please include in the subject line the statement ''Comments on Proposed Protocol.''

FOR FURTHER INFORMATION CONTACT: If there are specific questions, please contact Ms. Patricia Ferrebee, Office of the Deputy Under Secretary of Defense (Installations & Environment) (ODUSD(I&E)), 703–695–6107. This proposed rule along with relevant background information is available on the World Wide Web at the Defense Environmental Network & Information eXchange Web site, *http://www.denix.osd.mil/MMRP.*

SUPPLEMENTARY INFORMATION:

I. Protocol

The Protocol reflects the statement in 10 U.S.C. 2710(b)(2) that the priority assigned should be based on the overall conditions at each location, taking into consideration various factors relating to safety and environmental hazard potential. As required under 10 U.S.C. 2710(b)(1), the priority assigned to each munitions response site will be included with the inventory information made publicly available. The requirement for an inventory of munitions response sites known or suspected of containing unexploded ordnance, DMM, or MCs is found at 10 U.S.C. 2710(a). The assigned priority will be updated annually to reflect new information that becomes available.

The Protocol evaluates the following potential explosive safety and environmental hazards:

- Explosive hazards posed by unexploded ordnance (UXO) and discarded military munitions (DMM)
- Hazards associated with the effects of chemical warfare materiel (CWM)
- The chronic health and environmental hazards posed by munitions constituents (MC) or other chemical constituents.

DoD recognizes the different hazards inherent to each class of materials. To address these differences, the Protocol has three hazard evaluation modules, each of which is specific to one type of hazard, specifically:

- Explosive hazards are evaluated using the Explosives Hazard Evaluation (EHE) module.
- CWM-related hazards are evaluated using the Chemical Warfare Materiel Hazard Evaluation (CHE) module.
- Health and environmental hazards posed by MC are evaluated using the Relative Risk Site Evaluation (RRSE) module.

DoD recognizes that sufficient data to apply all three of the hazard evaluation modules may not be immediately available for some munitions response sites. In such cases where data are available for only one or two of the modules, the priority will be assigned based on the modules for which sufficient data are available. This initial priority may change when additional data are collected and all three modules are evaluated. Modules for which there are insufficient data will be assigned a status of ''evaluation pending.''

Upon completion of all necessary munitions responses at a munitions response site, the status ''prioritization no longer required'' will be assigned. The sequencing of munitions response sites for environmental restoration activities will be based primarily on the priority assigned using this Protocol, but may also reflect other relevant information, such as stakeholder concerns, economic issues, and program management considerations.

DoD is proposing to promulgate this Protocol as a Federal regulation. When promulgated as a Federal regulation, per 10 U.S.C. 2710(b)(3), the priority assigned to each munitions response site ''* * * shall not impair, alter, or diminish any applicable Federal or State authority to establish requirements for the investigation of, and response to, environmental problems'' at the munitions response site. It is also important to note that the priority assigned does not impact the actions taken during a munitions response. All munitions response sites known or suspected to contain UXO, DMM, or MC will be investigated and, as required by site-specific conditions, the UXO, DMM, or MC present will be addressed through removal actions, remedial actions, or a combination of removal and remedial actions.

II. Legal Authority

This part is proposed under the authority of 10 U.S.C. 2710(b).

III. Background

Through the Defense Environmental Restoration Program (DERP), the Department of Defense (DoD) is protecting human health and the environment at its active and closing installations, as well as at Formerly Used Defense Sites. In all 50 States, the District of Columbia, and U.S. territories, DoD is making measurable progress in cleaning up chemical contamination from past defense activities to protect its forces, their families, and civilian neighbors from environmental health and safety hazards. DoD is now beginning to undertake similar efforts under the DERP to address potential health and safety hazards associated with its past use of military munitions.

A. Scope of the Defense Environmental Restoration Program

Section 211 of the Superfund Amendments and Reauthorization Act (SARA) of 1986 [1] (codified at 10 U.S.C. 2701) established the DERP. Per the provisions in 10 U.S.C. 2701(a), the ''Secretary of Defense shall carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary.'' The phrase ''under the jurisdiction of the Secretary'' is further described by 10 U.S.C. 2701(c), which states: ''The Secretary shall carry out (in accordance with the provisions of this chapter and CERCLA) all response actions with respect to releases of hazardous substances from each of the following: (A) Each facility or site owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary. (B) Each facility or site which was under the jurisdiction of the Secretary and owned by, leased to, or otherwise

[1] SARA was signed into law on October 17, 1986, amending the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 42 U.S.C. 9601 *et seq.* Related sections in Title 10 of the United States Code, 10 U.S.C. 2702–2710 and 2810–2811, further define the DERP.

possessed by the United States at the time of actions leading to contamination by hazardous substances. (C) Each vessel owned or operated by the Department of Defense.''

The scope of the DERP is defined at 10 U.S.C. 2701(b), which states: ''Goals of the program shall include the following: (1) The identification, investigation, research and development, and cleanup of contamination from hazardous substances, and pollutants and contaminants. (2) Correction of other environmental damage (such as detection and disposal of unexploded ordnance) which creates an imminent and substantial endangerment to the public health or welfare or to the environment.* * *''

B. Military Munitions Use

Military munitions are used in training for combat, in munitions testing, and in weapons research, development, testing, and evaluation. When a military munition is used, but remains unexploded either by malfunction, design, or any other cause, it is called unexploded ordnance (UXO) and may pose an explosive hazard. Other military munitions may have been disposed of or abandoned, becoming what is known as a discarded military munitions (DMM). DMM are sometimes disposed of or abandoned through an attempt at treatment by burning or open detonation; other times DMM are directly disposed of or abandoned. When UXO or DMM are present at a location where DoD no longer intends to use military munitions, there are potential hazards. DoD established the Military Munitions Response program (MMRP) as part of the DERP specifically to address potential explosive and environmental hazards associated with UXO, DMM, and the chemical constituents of these munitions (*i.e.*, munitions constituents). The purpose of this Protocol is to assign a relative priority to locations where a munitions response is needed to mitigate these potential hazards.

C. Implementing Guidance for the DERP

DoD's primary implementing guidance for the DERP is the Management Guidance for the Defense Environmental Restoration Program (September 28, 2001), hereinafter referred to as the Management Guidance. The Management Guidance is issued by the Deputy Under Secretary of Defense (Installations & Environment) (DUSD (I&E)) and is available on the World Wide Web at *http://www.dtic.mil/envirodod/Policies/PDDERP.html.* The Management Guidance defines the basic program structure for DoD's environmental restoration activities and includes specific provisions addressing munitions responses. These provisions include:

- Establishing the Military Munitions Response program category within the DERP to implement and track munitions responses
- Defining munitions responses as actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or MC
- Directing the DoD Components to identify and establish an inventory of certain locations where a munitions response may be required
- Requiring DoD Components to evaluate the hazards posed where the presence of UXO, DMM, or MC are known or suspected to be present, and to conduct an appropriate munitions response
- Requiring the DoD Components to conduct munitions responses in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. 9601 *et seq.*), Executive Order (E.O.) 12580, Superfund Implementation (January 23, 1986) and E.O. 13016 Superfund Amendments (August 28, 1996), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR part 300).

D. The National Defense Authorization Act for Fiscal Year 2002

As DoD began to implement these requirements, Congress passed and the President signed into law several new requirements related to UXO, DMM, and MC. These provisions, found in the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107–107), Sections 311–313, were codified 10 U.S.C. 2703 and 2710.

One of these requirements, specifically 10 U.S.C. 2710(a), directed the Secretary of Defense to develop an inventory of munitions response sites that are known or suspected to contain UXO, DMM, or MC. Per 10 U.S.C. 2710(b), DoD is also required to develop, in consultation with representatives of the States and Indian Tribes, a proposed protocol for assigning to each munitions response site in this inventory a relative priority for response activities related to UXO, DMM, and MC based on the overall conditions at the munitions response site. Further, after public notice and comment on the proposed protocol, DoD is to issue a final protocol and apply the final protocol to all munitions response sites listed on the inventory.

The statute specifically excludes from the inventory required under 10 U.S.C. 2710(a) and, therefore, from application of this Protocol all locations that are:

- Not currently or were not previously owned by, leased to, or otherwise possessed or used by DoD (excluded because these locations do not meet the definition of a defense site)
- Not known or suspected of containing UXO, DMM, or MC (excluded because these locations are not included in the inventory)
- Outside the United States (excluded per 10 U.S.C. 2710(d)(1))
- Locations where the presence of military munitions is a result of combat operations (excluded per 10 U.S.C. 2710(d)(2))
- An operating storage or manufacturing facility (excluded per 10 U.S.C. 2710(d)(3))
- Used for, or were permitted for, the treatment or disposal of military munitions (excluded per 10 U.S.C. 2710(e)(1))
- An operational range (excluded per 10 U.S.C. 2710(d)(4) and 10 U.S.C. 2710(e)(1)).

As of the end of FY02, DoD has identified 2,307 munitions response sites in the inventory, an increase of 553 from the number DoD initially reported at the end of FY01. The FY02 inventory is comprised of 1,691 munitions response sites at FUDS, 542 at active installations, and 74 at installations subject to closure as part of the Base Realignment and Closure program. The current estimate of the costs of munitions responses for munitions response sites in the inventory exceeds $11.5 billion. More detailed information on the inventory can be found in the Fiscal Year 2002 Defense Environmental Restoration Program Annual Report to Congress. This report can be accessed via the World Wide Web at *http://www.dtic.mil/envirodod/DERP/DERP.htm.*

IV. Development of the Protocol

Soon after enactment of 10 U.S.C. 2710, the Office of the Deputy Under Secretary of Defense (Installations & Environment) convened a working group with representatives from the DoD Components knowledgeable in explosive safety or environmental restoration. This DoD work group led the effort to develop the Protocol for prioritizing munitions response sites, including conducting preliminary discussions and interviews, constructing and testing the Protocol, and consulting with stakeholders

throughout the process to gain their input and address their concerns.

A. Preliminary Interviews

As part of the initial effort in the development of the Protocol, the DoD work group conducted a small number of preliminary interviews of people within and outside DoD, including representatives of the DoD Components, other Federal and State agencies, American Indian and Alaska Native Tribes, and the public. The intent of these preliminary interviews was to query a small number of people familiar with or interested in the prioritization of DoD's munitions response sites to establish a baseline for the development effort. Approximately 100 people were interviewed.

The interviews involved a standard questionnaire requiring a combination of structured (*e.g.*, multiple choice) and narrative answers related to four areas the work group thought important to developing the Protocol:

- General characteristics for the Protocol
- The respondents' knowledge of the requirements for developing the Protocol, as those requirements were detailed in 10 U.S.C. 2701(b)
- The respondents' views on the importance of various data elements found in similar priority setting models, and
- Whether or not the respondent had any additional comments not covered in the structured questions

In general, the responses indicated that the Protocol should:

- Be simple in approach and operation
- Be easy to understand
- Have standardization of application
- Provide consistent and repeatable results
- Prioritize all munitions response sites into between 3 and 6 categories, and
- Keep the evaluation of the explosive hazards and the environmental hazards separate

The information gathered during these interviews provided the DoD work group with ideas for the initial characteristics that the Protocol should and should not contain. The work group considered these characteristics throughout the process of constructing the Protocol, including during the review of selected priority setting models.

B. Review of Selected Priority-Setting Models

Reflecting on the preferred characteristics identified during the preliminary interviews, DoD reviewed six existing tools used to prioritize sites for environmental restoration activities and analyzed the characteristics of each. Among the characteristics reviewed, the DoD work group sought to understand the means each tool used to balance differing concerns so that no one type of information dominated the model. One characteristic that became readily apparent was the number of major factors considered. Adopting the term ''axis'' to describe each major factor in the construct of the models reviewed, the work group sought to determine the number of axes the Protocol should have as the number of axes determines or limits the weight that can be applied to any one type of information. To achieve sufficient differentiation among sites, it is important that no one axis dominate the method.

Risk Assessment Code (RAC). Since 1990, the U.S. Army Corps of Engineers (USACE) has applied the RAC at both Formerly Used Defense Sites (FUDS) and Base Realignment and Closure installations as a tool for prioritizing ordnance and explosives response actions. In the Management Guidance, DoD adopted the RAC as an interim tool for prioritizing munitions response sites. The RAC is a two-axis model that assumes risk is a function of (1) exposure and (2) the hazard posed by the munitions present. The RAC assigns sites to one of five classes from high risk (RAC Score 1) to negligible risk (RAC score 5). It is a simple model that can be applied with limited information.

Range Rule Risk Methodology (R3M). The R3M was developed during DoD's effort to promulgate the DoD Range Rule. The Qualitative Risk Evaluation (QRE) is the first of three evaluations under the R3M. It is a three-axis, qualitative system designed as a screening tool for determining which sites required additional risk evaluation for explosive hazards. Its three factors (*i.e.*, axes) are UXO density, frequency of entry to the site, and UXO type. The Detailed and Streamlined Risk Evaluation (DRE and SRE) are the other two elements of the R3M and are applied to sites that were not screened out by the QRE. The SRE estimates the maximum quantitative degree of UXO risk to which receptors may be exposed. The DRE is a comprehensive assessment that uses site characterization data. The SRE and the DRE essentially are one-axis, quantitative models that focus on the probability of exposure.

Former Lowry Bombing and Gunnery Range Prioritization Tool. USACE and stakeholders developed this site-specific model to prioritize sites that encompass a very large FUDS. It is a one-axis system with multiple data elements. It requires extensive information and input from internal and external stakeholders.

Interim Range Rule Risk Methodology (IR3M) Baseline Explosives Hazard Evaluation. The IR3M baseline explosives risk evaluation tool was derived from the R3M and focused on the comparative evaluation of response alternatives against the baseline (*i.e.*, the amount of potential risk prior to response). It is a three-axis system, which assigns sites to one of five classes. The three axes are accessibility, overall hazard, and exposure. Modeling has suggested that application of the IR3M to sites results in reasonable distribution among the five classes.

Native American Lands Environmental Mitigation Program (NALEMP) Model. DoD developed this model to assist in prioritizing actions to be conducted under the NALEMP. It is a three-axis, quantitative system, specifically designed to consider risk and non-risk-based factors, such as life ways, programmatic, government-to-government, and economic considerations that are unique to Indian lands. The NALEMP model uses RRSE and RAC for the risk evaluation components. It also takes into consideration a range of potential impacts affecting traditional and customary uses of land and cultural and ecological resources vital to American Indian and Alaska Native life ways.

Hazard Ranking System (HRS). The U.S. Environmental Protection Agency developed this system to score sites for inclusion on the National Priorities List. It is a quantitative system that assigns a numerical score to each site based on the contaminant hazards in the groundwater, surface water, soil, and air. The HRS requires extensive data to operate and does not address explosive hazards.

While the USACE has used RAC for 13 years as a means of assigning a relative priority to FUDS, the DoD work group determined that neither RAC nor any of the other models reviewed provided the characteristics necessary to meet all the requirements in 10 U.S.C. 2710(b). The analysis of each model's strengths and weaknesses provided DoD with critical information regarding the characteristics the Protocol should possess. Based on information from this review and the preliminary interviews, the DoD work group began constructing a new model (*i.e.*, the Protocol) to more effectively evaluate the explosive safety and environmental hazards posed by UXO, DMM, and MC at munitions response sites.

C. Consultation With States, Tribes, and Others

As DoD worked to develop this Protocol, it engaged in extensive consultation with States, Tribes, and other Federal agencies. DoD also provided opportunity for interested members of the public to provide input during the development. DoD's efforts to engage stakeholders in the development process are summarized in a subsequent section. Although DoD notified all American Indian and Alaska Native Tribes of the Protocol development effort, DoD's consultation concentrated on those Tribes with interest in lands that are known or suspected of containing UXO, DMM, or MC.

V. Scope and Applicability

A. Terms Pertinent to the Protocol

In developing the Protocol, DoD realized the need for a term to describe the universe of locations subject to inclusion in the inventory and prioritization using the Protocol. DoD is creating the term ''munitions response site'' for this purpose. Although 10 U.S.C. 2710 had introduced the term ''defense site,'' this term is not considered appropriate for the purposes of prioritization as not all locations that meet the definition of defense sites are known or suspected to contain UXO, DMM, or MC. By definition, the term ''defense site'' refers to all locations that are or were owned, leased, or otherwise used by DoD (and contains several exclusions related to the types of activities occurring at the location). For a specific location to be included in the inventory (*i.e.*, a munitions response site), it must be (1) a location that is, or was, owned by, leased to, or otherwise possessed or used by DoD (*i.e.*, a defense site), and (2) known or suspected to contain UXO, DMM, or MC.

DoD formally established its Military Munitions Response program, a subset of the DERP, in September 2001. DoD is working to build the MMRP into a robust program to address the safety and environmental hazards associated with UXO, DMM, and MC. With the exception of FUDS properties, which have been further characterized, DoD is just beginning to identify the locations where it knows of or suspects the presence of UXO, DMM, and MC remaining from its past use of military munitions. In many cases, the identified locations are large geographic areas, sometimes encompassing an entire former range. Former ranges, often comprising hundreds of thousands of acres, supported various activities on different parts of the range. These locations meet the criteria for inclusion in the inventory, as they are (1) defense sites, and (2) known or suspected to contain UXO, DMM, or MC. DoD proposes to use the term ''munitions response area (MRA)'' for these large locations. MRA is defined as ''. . . any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples are former ranges or munitions burial areas. A munitions response area is comprised of one or more munitions response sites.''

Because an MRA may be large and complex, DoD will work to characterize each MRA and subdivide it into discrete locations so that munitions responses specific to local conditions can be conducted. Subdivision of an MRA is not required, but permitted as needed for purposes of implementing a munitions response. A munitions response site (MRS) is defined as ''. . . a discrete location within an MRA that is known to require a munitions response.'' Because every MRA is associated with at least one MRS and the MRS is defined by the need for a munitions response, consistent with the statutory requirement to assign a priority for response activities, the Protocol will be applied to MRS.

DoD will track the acreage of the MRA as well as each MRS to ensure that all acreage is accounted for regardless of whether or not an MRA is subdivided into more than one MRS. The total acreage of all MRS associated with the MRA must equal the total acreage of the MRA. Information about the size of each MRA and each MRS will be included with the other information in the inventory disclosed in response to the requirements of 10 U.S.C. 2710(a)(2).

B. Definitions

This proposed rule includes definitions for terms that describe the scope and applicability of the Protocol as well as terms that are integral to the hazard evaluation modules that comprise the Protocol. These definitions, unless codified elsewhere in the U.S. Code or Code of Federal Regulations (CFR) apply only to this part. Many of the terms relevant to this part are already defined in 10 U.S.C. 2710(e) and the CFR. Where this is the case, the existing statutory and regulatory definitions will be adopted for use in this part and are repeated here strictly for ease of reference.

American Indian and Alaska Native Tribes are any Federally recognized American Indian and Alaska Native tribal entity as defined by the most current Department of Interior/Bureau of Indian Affairs list of tribal entities published in the **Federal Register** pursuant to section 104 of the Federally Recognized Tribe Act.

Barrier means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), or a combination of natural and man-made obstacles.

Chemical agent identification sets (CAIS) are military training aids containing small quantities of various chemical warfare agents and other chemicals.

Chemical warfare agents (CWA) are the V- and G-series nerve agents, H-series (*i.e.*, ''mustard'' agents) and L-series (*i.e.*, lewisite) blister agents, and certain industrial chemicals used by the military as weapons, including hydrogen cyanide (AC), cyanogen chloride (CK), or carbonyl dichloride (called phosgene or CG)). CWA do not include riot control agents (*e.g.*, w-chloroacetophenone (CN) and o-chlorobenzylidenemalononitrile (CS) tear gas), chemical herbicides, smoke or incendiary compounds, and industrial chemicals that are not configured as a military munition.

Chemical Warfare Material (CWM) is a general term that includes four subcategories of specific materials:

- *CWM, explosively configured* are all munitions that contain a CWA fill and any explosive component. Examples include M55 rockets with CWA, the M23 VX mine, and the M360 105-millimeter GB artillery cartridge.
- *CWM, nonexplosively configured* are all munitions that contain a CWA fill but that do not include any explosive components. Examples include any chemical munition that does not contain an explosive component and VX or mustard agent spray canisters.
- *CWM, bulk container* are all non-munitions-configured containers of CWA (*e.g.*, a ton container).
- *Chemical agent identification sets (CAIS).* All forms of CAIS are scored the same except for CAIS K941, toxic gas set M–1; and K942, toxic gas set M–2/E11, which are scored higher due to the relatively large quantities of agent they contain.

In the Protocol, the general term ''CWM'' means all four subcategories. Where the name of one or more of the subcategories is used, the statement is specific to the subcategories specified.

Cultural resources means there are recognized cultural, traditional, spiritual, religious, or historical features or properties (*e.g.*, structures, artifacts, symbolism) on the munitions response site. For example, American Indians and Alaska Natives deem portions of or the entire munitions response site sacred.

Another example of cultural resources are areas that American Indians and Alaska Natives use for subsistence activities (*e.g.*, hunting, fishing). (**Note:** Specific requirements for determining if a particular feature is a cultural resource may be found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act.).

Defense site means locations that are or were owned by, leased to, or otherwise possessed or used by the Department of Defense. The term does not include any operational range, operating storage or manufacturing facility, or facility that is used for or was permitted for the treatment or disposal of military munitions. (10 U.S.C. 2710(e)(1)).

Department of Defense (DoD) Components means the Office of the Secretary of Defense, the Military Departments, the Defense Agencies, the DoD Field Activities, and any other DoD organizational entity or instrumentality established to perform a government function.

Discarded military munitions (DMM) means military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2)).

Ecological resources means: (1) A threatened or endangered species (designated under the Endangered Species Act (ESA)) is present on the munitions response site; or (2) the munitions response site is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the munitions response site.

Former (as in ''former range'') means the munitions response site is a location that was: (1) Closed by a formal decision made by the DoD Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

In the subsurface means the munition or CWM is: (1) Entirely beneath the ground surface, or (2) fully submerged in a water body.

Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, except that the term does include non nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.*) have been completed. (10 U.S.C. 2710(e)(3) and 40 CFR 260.10)

Military range means designated land and water areas set aside, managed, and used to research, develop, test, and evaluate military munitions, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas. (40 CFR 266.201).

Munitions constituents (MC) means any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710(e)(4))

Munitions response means response actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or MC.

Munitions response area (MRA) means any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges or munitions burial areas. An MRA is comprised of one or more munitions response sites.

Munitions response site (MRS) means a discrete location within an MRA that is known to require a munitions response.

On the surface means the munition or CWM is: (1) Entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).

Operational range means a military range that is used for range activities, or a military range that is not currently being used but that is still considered by the Secretary to be a range area, is under the jurisdiction, custody, or control of the Department of Defense, and has not been put to a new use that is incompatible with range activities. (10 U.S.C. 2710(e)(5)).

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

Practice munitions means munitions that contain an inert filler (*e.g.*, wax, sand, concrete), a spotting charge (*i.e.*, a pyrotechnic charge), and a fuze. For a munition to be classified as a ''practice munition,'' the fuze cannot be considered ''sensitive.''

Range activities means research, development, testing, and evaluation of military munitions, other ordnance, and weapons systems; and the training of military personnel in the use and handling of military munitions, other ordnance, and weapons systems.

Small arms ammunition means ammunition that is .50 caliber or smaller and shotgun shells.

Unexploded ordnance (UXO) means military munitions that: (1) Have been primed, fuzed, armed, or otherwise prepared for action; (2) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (3) remain unexploded either by malfunction, design, or any other cause. (10 U.S.C. 2710(e)(9) and 40 CFR 266.201).

United States means, in a geographic sense, the States, territories, and possessions and associated navigable waters, contiguous zones, and ocean waters of which the natural resources are under the exclusive management authority of the United States. (10 U.S.C. 2710(e)(10).

I. Application of the Munitions Response Site Prioritization Protocol

A. General Requirements

There are a number of activities that the DoD Components must undertake as part of the application of the Protocol. Among other requirements, the DoD Components will:

(1) Ensure the total acreage of each MRA is evaluated and apply the Protocol to all MRS under their administrative control.

(2) Involve the local community in the munitions response process as early as possible and seek continued involvement of the local community throughout the process.

(3) Use a team approach, where each team includes members with the expertise needed to apply the Protocol at a specific MRS. Each team should be comprised of DoD Component representatives from required functional areas (*e.g.*, explosives or chemical safety, environmental) and EPA, State regulators, and other Federal land managers, where appropriate. The DoD Component is also expected to seek involvement from American Indian or Alaskan Native Tribes when any portion of the MRS affects tribal lands, the affected local restoration advisory board (RAB) or technical review committee (TRC), and local stakeholders in the application of the Protocol. DoD is committed to working with Tribes on a government-to-government basis in recognition of their sovereignty and in a continuing effort to implement the 1998 DoD American Indian and Alaska Native Policy. To ensure American Indian and Alaskan Native Tribes, EPA, other Federal agency, State regulatory agencies, and local government officials are aware of the opportunity to participate in the application of the Protocol, the DoD Component organization responsible for implementing a munitions response at the MRS will send a certified letter to the heads of these organizations (or their designated point-of-contact), as appropriate, seeking their involvement. A copy of these letters will be placed in the Administrative Record and Information Repository for the MRS.

(4) Develop and maintain records on the application of this Protocol for each MRS. At a minimum, the records will contain references to all information and documents used for the evaluation (*e.g.*, data from preliminary assessments, worksheets). These records will be included in the Administrative Record and the Information Repository for the MRS.

(5) Document in a Management Action Plan (MAP) or its equivalent all aspects of the munitions responses required at all MRS for which that MAP is applicable. DoD guidance requires that MAPs are developed and maintained at an installation (or FUDS property) level. For the FUDS program, a State-wide MAP may also be developed.

(6) Establish a quality assurance panel to review all MRS prioritization decisions. To ensure objectivity, this panel will not include any person that was directly involved with the application of the Protocol to a specific MRS. If the panel concludes that a different priority should be assigned to a given MRS, the DoD Component will report the rationale for this change to ODUSD(I&E) with their inventory data. The DoD Component will also provide this rationale to the appropriate regulators and stakeholders for review and comment before finalizing the change.

(7) Update the priority as necessary to reflect new information that has become available.

(8) Following the panel review, report the priority for each MRS and the ratings for each hazard evaluation module to ODUSD (I&E) (or successor organizations) for inclusion in the inventory of MRS that is made publicly available.

A. Application of the Protocol

Components will apply the Protocol at an MRS when there are sufficient data to populate all the data elements in at least one of the three hazard evaluation modules (*i.e.*, the Explosive Hazard Evaluation, the CWM Hazard Evaluation, and Relative Risk Site Evaluation modules) that comprise the Protocol. It is expected that this will occur after the CERCLA preliminary assessment phase is completed but before the CERCLA site inspection phase is completed.

Any hazard evaluation module for which there is insufficient information to complete the evaluation will be assigned the ''evaluation pending'' rating for that module, and the MRS's relative priority will be assigned based on the ratings of the hazard evaluation modules for which sufficient data are available to complete the hazard evaluation. The Protocol will be reapplied as soon as the data to run the hazard evaluation modules assigned ''evaluation pending'' ratings becomes available.

The Protocol will be reapplied at a MRS under the following circumstances:

(1) Upon completion of a response action that could change the site conditions evaluated by the hazard evaluation modules at the MRS.

(2) To update or validate a previously rated hazard evaluation module when new information is available.

(3) To update or validate an MRS priority that was previously assigned based on evaluation of only one or two of the three hazard evaluation modules.

(4) Upon further delineation and characterization of an MRA into MRS.

(5) To categorize MRS previously classified as ''evaluation pending.''

When a munitions response is fully completed and no additional munition response is required, as agreed to by appropriate Federal and State regulatory agencies, the MRS will be assigned the rating ''no longer required.''

It is important to note that the Protocol is a prioritization tool only and does not impact the actions taken at an MRS. The responsible DoD Component will thoroughly investigate all MRS known or suspected to contain UXO, DMM, or MC and, as required by site-specific conditions, address any UXO, DMM, or MC through removal actions, remedial actions, or a combination or removal and remedial actions.

VII. The Hazard Evaluation Modules

The three modules that evaluate the potential hazards present at an MRS are the central feature of the Protocol. Using a hazard evaluation module developed specifically to address the unique characteristics of each type of hazard, DoD will evaluate each MRS in three distinct areas:

- Explosive hazards posed by UXO and DMM through the Explosives Hazard Evaluation (EHE) module,
- Chemical hazards associated with the physiological effects of CWM through the Chemical Warfare Materiel Hazard Evaluation (CHE) module, and
- Health and environmental hazards posed by MC using the Relative Risk Site Evaluation (RRSE) module.

Each hazard evaluation module is constructed using three categories, or factors, of information. As discussed earlier in the Preamble, this is a three-axis construct as three primary factors of information are used to derive the results of each hazard evaluation module. This characteristic is important as it limits the influence of any one factor on the outcome. Although the specifics of the three factors vary for each of the three hazard evaluation modules, each module is comprised of standard factors for source of hazard, pathways for exposure, and receptors. Further, each factor is comprised of multiple data elements that are intended to capture site-specific information. While developing the data elements, the

DoD work group worked to ensure that each data element within the three modules was:

- Essential for characterization of site conditions;
- Easily collected during the early phases of the CERCLA process; and
- Sufficiently defined to ensure consistent, repeatable, and supportable results for prioritizing an MRS.

The structure, application, and output of each of these modules are discussed in detail in the following parts of this section. Figure 1 is an illustration of the structure of the Protocol.

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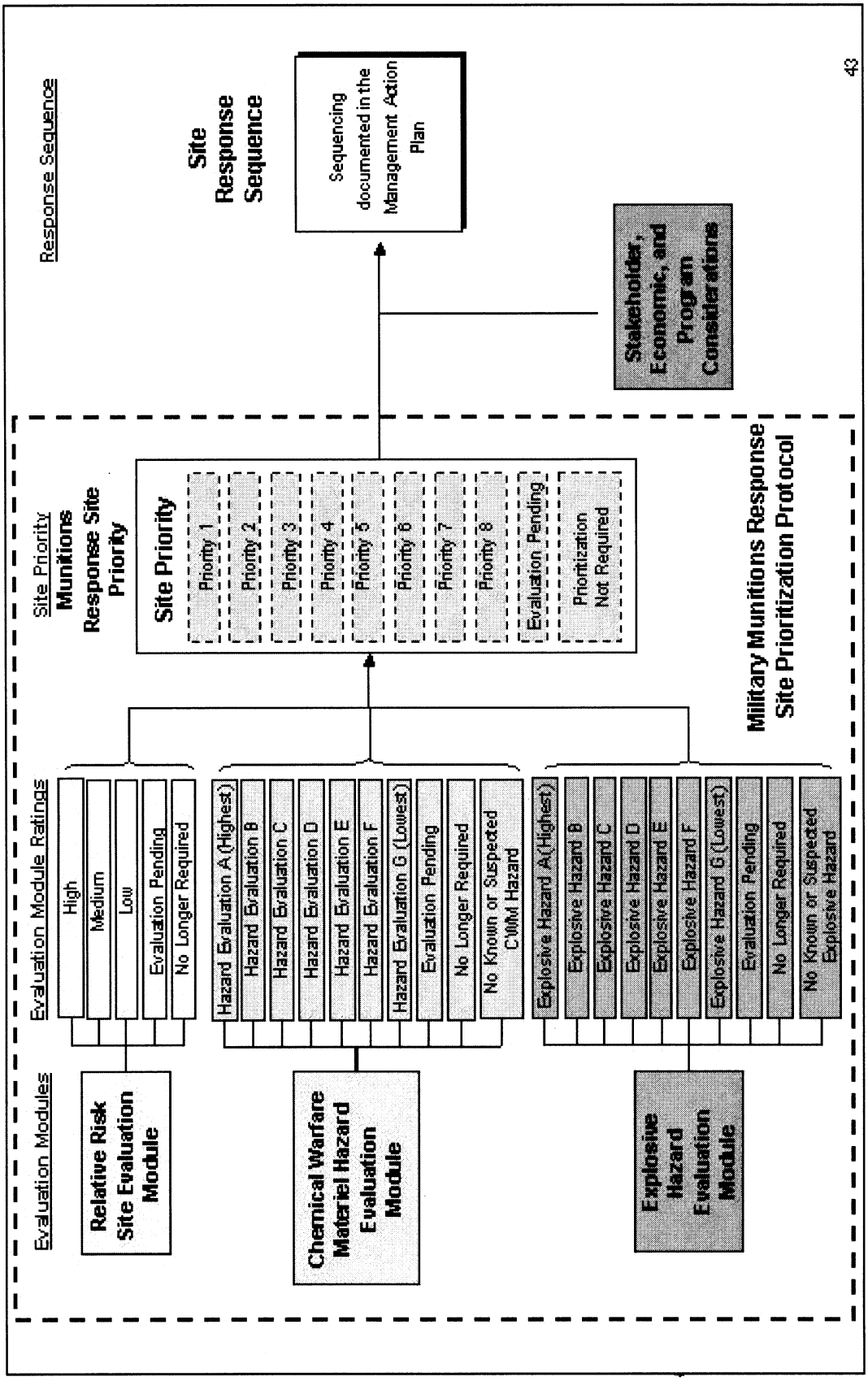

Figure 1: Overall Protocol Structure

A. The Explosive Hazard Evaluation (EHE) Module

The EHE module is used to conduct a relative comparison of the potential explosive hazards posed by UXO or DMM at an MRS. The EHE module determines the explosive hazard through evaluation of three general factors (*i.e.*, categories of information), each of which is comprised of two to four specific data elements. The factors comprising the EHE module are:

- Explosive hazard, which has the elements Munitions Type and Source of Hazard and characterizes the cause of the hazard;
- Accessibility, which has the elements Information on the Location of Munitions, Ease of Access, and Status of Property and characterizes the pathway or means by which a receptor can encounter the hazard; and
- Receptors, which has the elements Population Density, Population Near Hazard, Types of Activities/Structures, and Ecological and/or Cultural Resources and accounts for any receptors likely to be impacted by exposure to the hazard.

Each data element is assigned a maximum numerical value and consists of several classifications (each of which is assigned a numeric value ranging up to the maximum value of the data element) that are intended to capture certain site-specific conditions. The DoD work group developed these values based on the knowledge of technical experts within DoD and comments received from stakeholders. The values were adjusted based on the results of extensive testing of the Protocol and stakeholders' comments. The total value assigned to each data element as well as the value of the specific classifications within each element are relative evaluations of each element's contribution to the overall explosive hazard. The sum of these values is the EHE module score for the MRS, which is used to derive the EHE module hazard evaluation rating. Additional information on each factor and data element is provided in the text.

(1) Explosive Hazard Factor

The Explosive Hazard factor of the EHE module is comprised of two data elements, Munitions Type and Source of Hazard, and constitutes 40 percent of the numerical score of the EHE module.

The Munitions Type data element classifies munitions according to their potential to detonate and their inherent explosive power. Portability, the ability for a munition to be readily transported, is indirectly accounted for in this element. The DoD work group initially considered including portability as a distinct data element under the Accessibility factor, but because UXO can be found in many different configurations (*e.g.*, intact warheads, fuzes or other components that have separated from the munitions) that would be considered portable, DoD found it too difficult to define the criteria necessary to address portability separately in the EHE module.

In developing the data elements within this factor, the DoD work group determined the need for separate classifications for many common munitions types but also recognized that there are exceptions to several categories. For example, although there is a separate classification for practice munitions, when the associated fuze is determined to be sensitive by a technically qualified individual, the munition will be classified as sensitive not as practice to more accurately reflect the greater explosive hazard presented by sensitive fuzes. Similarly, while the Protocol provides a separate classification for small arms ammunition to reflect the limited explosives hazard they posed because they lack an explosive charge. To select the small arms ammunition classification, there must be evidence that only small arms ammunition was used at the MRS. If there is evidence that munitions other than small arms ammunition were used or could be present on the MRS, the munition type with the highest numeric value (*i.e.*, the greatest potential hazard) is used for the evaluation. DoD has also included an ''evidence of no munitions'' classification, which can only be used if, after investigation, there is physical or historical evidence that indicates there are no munitions present. The definition for ''evidence of no munitions'' is important as it requires DoD to investigate all MRS for the presence of UXO or DMM. Further, DoD adopted the criteria for physical and historical evidence as an affirmation that the DoD Components will collect information upon which to base decisions. This approach to physical or historical evidence is intended to preclude decisions based on the logic that ''* * * there is no physical/historical evidence of * * *,'' which could mean there is an absence of information on what physical or historical evidence is available.

The classifications, the definition for each classification, and associated numerical scores for the Munitions Type data element are presented in Table 1.

TABLE 1.—CLASSIFICATIONS WITHIN THE EHE MODULE TYPE DATA ELEMENT

Classification	Description	Score
Sensitive	• All UXO that are considered likely to function upon any interaction with exposed persons, including: submunitions, cluster munitions, 40mm high-explosive grenades, white phosphorus (WP) munitions (including practice munitions with sensitive fuzes, but excluding all other practice munitions), and high-explosive anti-tank (HEAT) munitions. • All hand grenades containing an explosive filler.	30
High explosive (used or damaged)	• All UXO containing a high-explosive filler (*e.g.*, RDX, Composition B) that are not considered ''sensitive''. • All DMM containing a high-explosive filler that have been damaged by burning or detonation. • All DMM containing a high-explosive filler that have deteriorated to the point of instability.	25
Pyrotechnic	• All UXO containing pyrotechnic fillers other than white phosphorous (*e.g.*, flares, signals, simulators, smoke grenades). • All DMM containing pyrotechnic fillers other than white phosphorous (*e.g.*, flares, signals, simulators, smoke grenades) that have been damaged by burning or detonation or that have deteriorated to the point of instability.	20

TABLE 1.—CLASSIFICATIONS WITHIN THE EHE MODULE TYPE DATA ELEMENT—Continued

Classification	Description	Score
High explosive (unused)	• All DMM containing a high-explosive filler that have not been damaged by burning or detonation.. • All DMM containing a high explosive filler that are not deteriorated to the point of instability.	15
Propellant	• All UXO containing only a single-, double-, or triple-based propellant, or composite propellants (*e.g.*, a rocket motor). • All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (*e.g.*, a rocket motor).	15
Bulk HE, pyrotechnics, or propellant	• Bulk high explosives, including: demolition charges (*e.g.*, C4 blocks), high explosives not contained in a munition, and concentrated mixtures of high explosives or other munitions constituents mixed with environmental media or debris in concentrations that result in the mixture being explosive (*e.g.*, ''explosive soil''). • All pyrotechnic material that is not contained in a munition (*i.e.*, ''bulk pyrotechnics''). • All single-, double-, or triple-based propellant, or composite propellants that are not contained in a munition (*i.e.*, ''bulk propellant'').	10
Practice	• All UXO that are a practice munition not associated with a sensitive fuze • All DMM that are a practice munition not associated with a sensitive fuze that have been damaged by burning or detonation. • All DMM that are a practice munition not associated with a sensitive fuze that have deteriorated to the point of instability.	5
Riot control	• All UXO or DMM containing only a riot control agent (*e.g.*, tear gas)	3
Small arms	• All UXO or DMM that are classified as small arms ammunition. Evidence that no other munitions type (*e.g.*, grenades, subcaliber training rockets, demolition charges) was used or is 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 there are no UXO or DMM present or there is historical evidence indicating that no UXO or DMM are present.	0

Notes:

• Former (as in ''former range'') means the MRS is a location that was: (1) Closed by a formal decision made by the DoD Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.

• Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

• Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

• Practice munitions means munitions that contain an inert filler (*e.g.*, wax, sand, concrete), a spotting charge (*i.e.*, a pyrotechnic charge), and a fuze.

• The term small arms ammunition means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

The Source of Hazard data element considers the previous uses of the MRS. It reflects the type of munitions that may be present and the manner and extent munitions were used or disposed of at the MRS. The classifications provided are the common locations where a munition can be found during its lifecycle.

The classification former range has the maximum value within the Source of Hazard data element. Former ranges will have supported live-fire training and testing and consist of locations, such as impact areas, that are expected to contain large concentrations of UXO and, therefore, pose the greatest potential explosive hazard. Although some areas on a former range are not expected to contain high concentrations of UXO (*e.g.,* the firing point), there is still a potential for UXO or DMM to be present. The DoD work group provided a distinct classification for firing points that are separated from other parts of a former range.

Other classifications within Source of Hazard include manufacturing, storage, and transfer facilities—reflecting the early parts of the munition lifecycle—and treatment units and burial pits, which represent the end of the lifecycle. As with the Munitions Type data element, DoD has provided an ''evidence of no munitions'' classification for the Source of Hazard data element. This classification can only be selected if an investigation finds there is physical or historical evidence indicating there is no UXO or DMM present. The definition for ''evidence of no munitions'' is important as it requires DoD to investigate all MRS for the presence of UXO or DMM. Further, DoD adopted the criteria for physical and historical evidence as an affirmation that the DoD Components will collect information upon which to base decisions. This approach to physical or historical evidence is intended to preclude decisions based on the logic that ''* * * there is no physical/historical evidence of * * *'' which could mean there is an absence of information on what physical or historical evidence is available.

The eleven classifications, the definition for each classification, and associated numerical scores for the Source of Hazard data element are presented in Table 2.

TABLE 2.—CLASSIFICATIONS WITHIN THE EHE MODULE SOURCE OF HAZARD DATA ELEMENT

Classification	Description	Score
Former range	• The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include: impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10
Former munitions treatment (i.e., OB/OD) unit.	• The MRS is a location where UXO or DMM (*e.g.,* munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8
Former practice munitions range	• The MRS is a former range on which only practice munitions without sensitive fuzes were used.	6
Former maneuver area	• The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5
Former burial pit or other disposal area	• The MRS is a location where DMM were buried or disposed of (*e.g.*, disposed of into a water body) without prior thermal treatment.	5
Former industrial operating facilities	• The MRS is a location that is a former munitions manufacturing or demilitarization facility.	4
Former firing points	• The MRS is a firing point, when the firing point is delineated as an MRS separate from the rest of a former range.	4
Former missile or air defense artillery emplacements.	• The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a range.	2
Former storage or transfer points	• The MRS is a location where munitions were stored or handled for transfer between modes (*e.g.*, rail to truck, truck to weapon system).	2
Former small arms range	• The MRS is a former military range where only small arms were used. There must be evidence that no other type of munitions (*e.g.*, grenades) were used or are present at the location to place an MRS into this category.	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0

Notes:
• Former (as in ''former range'') means the MRS is a location that was: (1) closed by a formal decision made by the DoD Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
• Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
• Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.
• Practice munitions means munitions that contain an inert filler (*e.g.*, wax, sand, concrete), a spotting charge (*i.e.*, a pyrotechnic charge), and a fuze.
• The term small arms ammunition means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

(2) Accessibility Factor

The Accessibility factor of the EHE module focuses on the potential for receptors to encounter the UXO or DMM that may be present on a MRS. This factor consists of three data elements that constitute 40 percent of the numerical score of the EHE module.

The data element Information on the Location of Munitions is an evaluation of the following three conditions that were combined into one data element to best represent the potential for encountering munitions.

• The confirmed or suspected presence of munitions based on physical evidence (*e.g.*, presence or absence of munitions, fragments, firing records, anecdotal information)

• The likelihood for direct contact with the munition based on its proximity to the surface

• The potential for the munitions to be brought to the surface by dynamic site conditions (*e.g.*, erosion).

This data element differentiates among MRS where intact UXO or DMM are present, as opposed to the MRS where only munitions fragments are found. This data element also differentiates between ''confirmed'' versus ''suspected'' evidence. As with both data elements in the Explosive Hazard factor, this data element has an ''evidence of no munitions'' classification, which can only be used if, after investigation, there is physical or historical evidence that indicates there are no munitions present. The definition for ''evidence of no munitions'' is important as it requires DoD to investigate all MRS for the presence of UXO or DMM. Further, DoD adopted the criteria for physical and historical evidence as an affirmative that the DoD Components will collect information upon which to base decisions. This approach to physical or historical evidence is intended to preclude decisions based on the logic that ''* * * there is no physical/historical evidence of * * *, which could mean there is an absence of information on what physical or historical evidence is available.

The classifications, the definition for each classification, and associated numerical scores for the Information on the Location of Munitions data element are presented in Table 3.

TABLE 3.—CLASSIFICATIONS WITHIN THE EHE INFORMATION ON THE LOCATION OF MUNITIONS DATA ELEMENT

Classification	Description	Score
Confirmed surface	• Physical evidence indicates there are UXO or DMM on the surface of the MRS ..... • Historical evidence (*e.g.*, a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.	25

TABLE 3.—CLASSIFICATIONS WITHIN THE EHE INFORMATION ON THE LOCATION OF MUNITIONS DATA ELEMENT—Continued

Classification	Description	Score
Confirmed, subsurface, active	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose UXO or DMM. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose UXO or DMM.	20
Confirmed subsurface, stable	• Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause UXO or DMM to be exposed. • Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause UXO or DMM to be exposed	15
Suspected (physical physical evidence)	• There is physical evidence other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	10
Suspected (historical evidence)	• There is historical evidence indicating that UXO or DMM may be present at the MRS.	5
Subsurface, physical constraint	• There is physical or historical evidence indicating the UXO or DMM may be present in the subsurface, but there is a physical constraint (*e.g.*, pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2
Small arms (regardless of location)	• The presence of small arms ammunitions is confirmed or suspected, regardless of other factors such as geological stability. There must be evidence that no other types of munitions (*e.g.*, grenades) were used or are present at the MRS to include it in this category.	1
Evidence of no munitions	• Following investigation of the MRS, there is physical evidence there are no UXO or DMM present or there is historical evidence indicating that no UXO or DMM are present.	0

Notes:
• Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
• Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.
• In the subsurface means the munition (*i.e.*, a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
• On the surface means the munition (*i.e.*, a DMM or UXO) is: (1) entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).
• The term small arms ammunition means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

The *Ease of Access* data element focuses on the means for a receptor to encounter a munition based on the extent of controls preventing access or entry to the MRS. Both natural obstacles (*e.g.*, dense vegetation, rugged terrain, water) and man-made controls (*e.g.*, fencing) are considered in this analysis. DoD initially deliberated over numerous data elements and associated definitions to best capture these conditions. DoD found the conditions within this data element difficult to capture, especially for large MRS that have not been fully characterized and have varying conditions across the MRS (*e.g.*, short grass and dense swamp).

The classifications, the definition for each classification, and associated numerical scores for the *Ease of Access* element are presented in Table 4.

TABLE 4.—CLASSIFICATIONS WITHIN THE EHE EASE OF ACCESS DATA ELEMENT

Classification	Description	Score
No barrier	• There is no barrier preventing access to all parts of the MRS (*i.e.*, all parts of the MRS are accessible).	10
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS but not the entire MRS	8
Barrier to MRS access is complete but not monitored.	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (*e.g.*, by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5

TABLE 4.—CLASSIFICATIONS WITHIN THE EHE EASE OF ACCESS DATA ELEMENT—Continued

Classification	Description	Score
Barrier to MRS access is is complete and monitored.	• There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (*e.g.*, by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0

Notes: Barrier means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), or a combination of natural and man-made obstacles.

The last data element in the *Accessibility* factor is *Status of Property*. Its purpose is to differentiate between MRS that DoD controls and MRS that DoD does not control. Based on input received during the development of the Protocol, DoD revised the definition of Non-DoD control to specifically include all Indian lands (*i.e.*, trust lands, allotments, and Alaska Native Claims Settlement Act (ANCSA)-conveyed property). DoD also included property transferring from DoD control within 3 years in this data element to address those MRS that may be currently controlled by DoD but are planned for transfer to non-DoD entities in the near future. There are three property classifications, *DoD control, Scheduled for transfer from DoD control,* and *Non-DoD control.*

The classifications, the definition for each classification, and associated numerical values for the *Status of Property* data element are presented in Table 5.

TABLE 5.—CLASSIFICATIONS WITHIN THE EHE STATUS OF PROPERTY DATA ELEMENT

Classification	Description	Score
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by American Indian or Alaskan Native Tribes, or State or local governments; and lands or water bodies managed by other Federal agencies.	5
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD, and DoD plans to transfer that land or water body to the control of another entity (*e.g.*, a State, American Indian, Alaskan Native, or local government; a private party; or another Federal agency) within 3 years from the date the Protocol is applied.	3
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the DoD. With respect to property that is leased or otherwise possessed, DoD must control access to the MRS 24-hours per day, every day of the calendar year.	0

(3) Receptor Factor

The *Receptor* factor focuses on the human and ecological populations that may be impacted by the presence of UXO or DMM. Its four data elements constitute 20 percent of the numerical score of the EHE module.

The *Population Density* data element is used to assess the number of persons that could potentially access the MRS and potentially be at risk from any known or suspected UXO or DMM present. Using U.S. Census Bureau statistics, *Population Density* is based on the number of people per square mile in the county in which the MRS is located. If the MRS is located in more than one county, DoD will use the largest population value among the counties. DoD selected county population density for this data element because city population information was not consistently available for all MRS, especially those in rural or remote locations. If the MRS is within or borders on city limits, the population density of the city should be used instead of the county population density. During consultation with States, Tribes, and other Federal agencies, some agencies expressed a desire to use alternate and other readily available data (*e.g.*, daily visitor counts to national recreational areas) in place of census data. DoD considered this approach but, for consistency in the Protocol's application, determined that such site-specific data would best be addressed through implementation guidance or possibly considered as ''risk plus'' or ''other'' factors when determining the sequencing for MRS. DoD also initially considered differentiating between on-site and off-site populations but found such an approach unworkable.

The classifications, the definition for each classification, and associated numerical scores for the *Population Density* data element are presented in Table 6.

TABLE 6.—CLASSIFICATIONS WITHIN THE EHE POPULATION DENSITY DATA ELEMENT

Classification	Description	Score
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5
100–500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1

Notes: If an MRS is in more that one county, the DoD Component will use the largest population value among the counties. If the MRS is within or borders a city or town, the population density for the city or town instead of the county population density is used.

The *Population Near Hazard* data element is estimated based on the number of inhabited structures [2] on the MRS and within a 2-mile distance, extending out from the boundary of the MRS. Although this data element is defined based on the number of inhabited structures, DoD's focus is on the potential for people to be present in the structures, not on the structures themselves.

The classifications, the definition for each classification, and associated numerical scores for the *Population Near Hazard* data element are presented in Table 7.

TABLE 7.—CLASSIFICATIONS WITHIN THE EHE POPULATION NEAR HAZARD DATA ELEMENT

Classification	Description	Score
26 or more structures	• There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5
16 to 25	• There are 16–25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4
11 to 15	• There are 11–15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3
6 to 10	• There are 6–10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2
1 to 5	• There are 1–5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0

Notes: The term inhabited structures means permanent or temporary structures, other than DoD munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

The *Types of Activities/Structures* data element is used to assess the nature of the population near the hazard. Through this element, DoD strives to address multiple factors, including the amount, type, and intrusiveness of activities that may result in an encounter with UXO or DMM and the likelihood of people to congregate on-site and within a 2-mile radius of the MRS. Residential and recreational areas are weighted highest to reflect the greater number and types of activities and population that may be in their vicinity. In response to Tribal comments, DoD also included subsistence issues in the highest classification.

The classifications, the definition for each classification, and associated numerical scores for the Types of Activities/Structures data element are presented in Table 8.

TABLE 8.—CLASSIFICATIONS WITHIN THE EHE TYPES OF ACTIVITIES/STRUCTURES DATA ELEMENT

Classification	Description	Score
Residential, educational, commercial, or subsistence.	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or, within the MRS's boundary that are associated with any of the following purposes: residential, educational, child care, critical assets (*e.g.,* hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, play grounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5
Parks and recreational areas	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with parks, nature preserves or other recreational uses.	4
Agricultural, forestry	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with agriculture or forestry.	3
Industrial or warehousing	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with industrial activities or warehousing.	2
No known or recurring activities	• There are no known or recurring activities occurring up to 2 miles from the MRS's boundary or within the MRS's boundary.	1

Notes:
• The term *inhabited structures* means permanent or temporary structures, other than DoD munitions-related structures, are routinely occupied by one or more persons for any portion of a day.

Through the *Ecological and/or Cultural Resources* data element, DoD recognizes the importance of ecological and cultural resources present on an MRS. This data element considers threatened and endangered species, critical habitat, sensitive ecosystems, natural resources, historical sites, historic properties, cultural items, archaeological resources, and American Indian and Alaska Native sacred sites. Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, Executive Order 13007, and the

[2] Under the DoD Explosives Safety Standards, inhabited structures are considered as structures, including schools, churches, residences, aircraft passenger terminals, stores, shops, factories, hospitals, and theaters, other than DoD munitions-related structures, routinely occupied for any portion of the day, both within and outside of DoD facilities. Occupied temporary structures are also included.

American Indian Religious Freedom Act. The greatest weight is awarded to MRS with both cultural and ecological resources.

The classifications, the definition for each classification, and associated numerical scores for the *Ecological and/or Cultural Resources* data element are presented in Table 9.

TABLE 9.—CLASSIFICATIONS WITHIN THE EHE ECOLOGICAL AND/OR CULTURAL RESOURCES DATA ELEMENT

Classification	Description	Score
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS	5
Ecological resources present	• There are ecological resources present on the MRS	3
Cultural resources present	• There are cultural resources present on the MRS	3
No ecological or cultural resources present.	• There are no ecological resources or cultural resources present on the MRS	0

Notes:

• Ecological resources means that: (1) A threatened or endangered species (designated under the Endangered Species Act (ESA)) is present on the MRS; or (2) the MRS id designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.

• Cultural resources means there are recognized cultural, traditional, spiritual, religious, or historical features (*e.g.*, structures, artifacts, symbolism) on the MRS. For example, American Indians or Alaska Natives deem the MRS to be of religious significance or there are areas that are used by American Indians or Alaska Natives for subsistence activities (*e.g.*, hunting, fishing). Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act.

(4) EHE Module Rating

As described earlier in discussion of the EHE module, each data element provides a numeric value that contributes to the EHE module score. The sum of the nine data elements is the EHE module score.

There are seven EHE module ratings derived from the EHE module scores, as illustrated in Table 10, plus three alternatives to account for the explosive hazard potential at an MRS.

TABLE 10.—DETERMINING THE EHE RATING FROM THE EHE MODULE SCORE

Overall EHE Module Score	EHE Rating
The MRS has an overall EHE module score from 92 to 100	EHE Rating A
The MRS has an overall EHE module score from 82 to 91	EHE Rating B
The MRS has an overall EHE module score from 71 to 81	EHE Rating C
The MRS has an overall EHE module score from 60 to 70	EHE Rating D
The MRS has an overall EHE module score from 48 to 59	EHE Rating E
The MRS has an overall EHE module score from 38 to 47	EHE Rating F
The MRS has an overall EHE module score less than 38	EHE Rating G

In addition, there are three other possible outcomes:

• *Evaluation pending.* This category is used when UXO or DMM are believed or known to be present at an MRS, but sufficient information is not available to conduct the evaluation.

• *No longer required.* Within the EHE module, this category is reserved for MRS that no longer require evaluation for an explosives hazard potential because DoD has conducted a response, all response objectives set out in the decision document for the MRS have been achieved, and no further action, except for long-term management and recurring reviews, is required.

• *No known or suspected explosive hazard.* This category is reserved for MRS that do not require evaluation under the EHE module because no potential explosive hazard was identified.

B. The Chemical Warfare Materiel Hazard Evaluation (CHE) Module

The second hazard evaluation module comprising an MRS priority is evaluation of the chemical hazards associated with the physiological effects of chemical warfare materiel (CWM). The CHE module is used only when CWM are known or suspected of being present at an MRS.

CWM is a general term that is comprised of four subcategories:

• *CWM, explosively configured* are all munitions that contain a CWA fill and any explosive component. Examples are M55 rockets with CWA, the M23 VX mine, and the M360 105-millimeter GB artillery cartridge.

• *CWM, nonexplosively configured* are all munitions that contain a CWA but that do not include any energetic material. Examples are any chemical munition that does not contain explosive components (*e.g.*, a burster, fuze), and VX or mustard agent spray canisters.

• *CWM, bulk container* are all non-munitions-configured containers of CWA (*e.g.*, ton containers).

• *Chemical agent identification sets (CAIS)* are military training aids containing small quantities of various CWA and other chemicals. All forms of CAIS are scored the same in this Protocol, except CAIS K941, toxic gas set M–1; and K942, toxic gas set M–2/E11, which are scored higher due to the relatively large quantities of agent they contain.

The CWA contained in each of the subcategories of CWM are chemicals chosen for military applications, and are intended to kill, seriously injure, or incapacitate a person through physiological effects. CWA is comprised of V- and G-series nerve agents, H-series (*i.e.*, ''mustard'' agents) and L (*i.e.*, lewisite) blister agents, and certain industrial chemicals used by the military as weapons, including phosgene, hydrogen cyanide (AC), cyanogen chloride (CK), or carbonyl dichloride (called phosgene or CG). CWA does not include riot control agents (*e.g.*, w-chloroacetophenone (CN) and o-chlorobenzylidenemalononitrile (CS) tear gas), chemical herbicides, smoke or incendiary compounds, and

industrial chemicals that are not configured as military munitions.

Some CWM will be UXO (*e.g.*, a fired Stoke's mortar round that contains a phosgene fill); some will be DMM (*e.g.*, a discarded munition containing a chemical fill, or CAIS that were buried as a means of disposal).

This module is not used to evaluate environmental media and debris containing chemical warfare agents (*i.e.*, CWA-media and CWA-debris), as they are evaluated using the Relative Risk Site Evaluation module.

Under the CHE module, nine data elements of MRS information comprising three areas are evaluated: *CWM Hazard, Accessibility,* and *Receptors.* The CWM Hazard factor is structured to evaluate the unique characteristics of CWM. The data elements in the *Accessibility* factor and *Receptor* factor are identical with those in the EHE module.

(1) CWM Hazard Factor

The *CWM Hazard* factor is comprised of two data elements, CWM *Configuration* and *Sources of CWM,* and constitutes 40 percent of the CHE module score. The *CWM Hazard* factor is similar to the *Explosive Hazard* factor of the EHE module, but has been modified to address the unique characteristics of CWM.

The *CWM Configuration* data element estimates the potential hazard based on the amount of CWA that may be contained in the munition, its likelihood to be dispersed, and the condition of the munition. Similar to the *Munitions Type* data element in the EHE module, DoD has also included an ''evidence of no CWM'' classification, which can only be used if, after investigation, there is physical or historical evidence that indicates there is no CWM present. The definition for ''evidence of no CWM'' is important as it requires DoD to investigate all MRS for the presence of CWM. Further, DoD's adoption of the criteria for physical and historical evidence serves as an affirmation that the DoD Components will collect information upon which to base decisions. This approach to physical or historical evidence is intended to preclude decisions based on the logic that ''* * * there is no physical/historical evidence of * * *'' where the phrase could mean that there is an absence of information on what physical or historical evidence is available.

The classifications, the definition for each classification, and associated numerical scores for the *CWM Configuration* data element are presented in Table 11.

TABLE 11.—CLASSIFICATIONS WITHIN THE CHE CWM CONFIGURATION DATA ELEMENT

Classification	Description	Score
CWM, explosive configuration, either UXO or damaged DMM.	The CWM known or suspected of being present at the MRS is: ..... • Explosively configured CWM that are UXO (*i.e.*, CWM/UXO). • Explosively configured CWM that are DMM that have been damaged (CWM/DMM)	30
CWM mixed with UXO	• The CWM known or suspected of being present at the MRS are CWM/DMM that are co-mingled with conventional munitions that are UXO.	25
CWM, explosive configuration that are DMM (unused).	• The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20
CWM, not-explosively configured or CWM, bulk container.	The CWM known or suspected of being present at the MRS is: ..... • Non-explosively configured CWM/DMM • Bulk CWM/DMM (*e.g.*, ton container)	15
CAIS K941 and CAIS K942	• The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M–1 or CAIS K942-toxic gas set M–2/E11.	12
CAIS (chemical agent identification sets) ..	• The CWM known or suspected of being present at the MRS are only CAIS/DMM. The CAIS present cannot include CAIS K941, toxic gas set M–1; and K942, toxic gas set M–2/E11 for the MRS to be assigned this rating.	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

Notes:
- The notation CWM/DMM means CWM that are DMM.
- The term CWM /UXO means CWM that are UXO.
- Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
- Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

The *Sources of CWM* data element addresses the type of activities that were conducted at the MRS and how and to what extent CWM were used or may be present. The source expected to pose the greatest hazard is a range that supported live-fire testing or training using explosively configured CWM. MRS where chemical munitions were only stored or transferred during transport pose the least hazard. As with the *CWM Configuration* data element, DoD has provided an ''evidence of no CWM'' classification for the *Sources of CWM* data element.

The classifications, the definition for each classification, and associated numerical scores for the *Sources of CWM* data element are presented in Table 12.

TABLE 12.—CLASSIFICATIONS WITHIN THE CHE SOURCES OF CWM DATA ELEMENT

Classification	Description	Score
Live-fire involving CWM	• The MRS is a range that supported live-fire of explosively configured CWM, and the CWM/UXO are known or suspected of being present on the surface or in the subsurface • The MRS is a range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface co-mingled with conventional munitions that are UXO	10
Damaged CWM/DMM or CAIS/DMM, surface or subsurface.	• There are damaged CWM/DMM on the surface or in the subsurface at the MRS	10
Undamaged CWM/DMM or CAIS/DMM, surface.	• There are undamaged CWM/DMM on the surface at the MRS	10
Undamaged CWM/DMM, or CAIS/DMM, subsurface.	• There are undamaged CWM/DMM in the subsurface at the MRS	5
Production facilities of CWM or CAIS	• The MRS is a facility that engaged inproduction of CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface	3
Research, Development, Testing, and Evaluation (RDT&E) facility using CWM or CAIS.	• The MRS is at a facility that was involved in non-live fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface	3
Training facility using CWM or CAIS	• The MRS is a location that was involved in training activities involving CWM and/or CAIS (*e.g.*, training in recognition of CWA, decontamination training), and CWM/DMM are suspected of being present on the surface or in the subsurface	2
Storage or transfer points of CWM	• The MRS is a former storage facility or transfer point (*e.g.*, inter-modal transfer) for CWM	1
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

Notes:
• The notation CWM/DMM means CWM that are DMM.
• The term CWM /UXO means CWM that are UXO.
• Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
• Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.
• In the subsurface means the CWM (*e.g.*, a DMM or UXO) is: (1) Entirely beneath the ground surface, or (2) fully submerged in a water body.
• On the surface means the CWM (*i.e.*, a DMM or UXO) is: (1) Entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).

(2) Accessibility Factor

The *Accessibility* factor of the CHE module focuses on the potential for receptors to encounter the CWM known or suspected to be present on a MRS. This factor consists of three elements that constitute 40 percent of the CHE module numerical score.

The data element *Information on the Location of CWM* is an evaluation of the following three conditions that were combined into one data element to best represent the potential for encountering CWM:

• The confirmed or suspected presence of CWM based on physical evidence (*e.g.*, presence or absence of munitions fragments, firing records, anecdotal information)

• The likelihood for direct contact with CWM based on its proximity to the surface

• The potential for the CWM to reach the surface due to dynamic site conditions (*e.g.*, erosion).

This data element attempts to differentiate MRS where a true hazard is present opposed to the numerous MRS where only CWM fragments remain or where CWM were only transferred or stored. It also differentiates between ''known'' versus ''suspected'' evidence.

The classifications, the definition for each classification, and associated numerical scores for the Information on the Location of CWM element are presented in Table 13.

TABLE 13.—CLASSIFICATIONS WITHIN THE CHE INFORMATION ON THE LOCATION OF CWM DATA ELEMENT

Classification	Description	Score
Confirmed surface	• Physical evidence indicates there are CWM on the surface of the MRS • Historical evidence (*e.g.*, a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS.	25
Confirmed subsurface, active	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction) at the MRS that are likely to expose CWM. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to cause CWM.	20

TABLE 13.—CLASSIFICATIONS WITHIN THE CHE INFORMATION ON THE LOCATION OF CWM DATA ELEMENT—Continued

Classification	Description	Score
Confirmed subsurface, stable	• Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause CWM to be exposed.. • Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause CWM to be exposed.	15
Suspected (physical evidence)	• There is physical evidence other than the documented presence of CWM, indicating that CWM may be present at the MRS.	10
Suspected (historical evidence)	• There is historical evidence indicating that CWM may be present at the MRS	10
Subsurface, physical constraint	• There is physical or historical evidence indicating the CWM may be present in the subsurface, but there is a physical constraint (*e.g.*, pavement, water depth over 120 feet) preventing direct access to the CWM.	2
Evidence of no CWM	• Following investigation of the MRS, there is physical evidence there is no CWM present, or there is historical evidence indicating that no CWM are present.	0

Notes:
• *Historical evidence* means that the investigation: (1) found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.
• *Physical evidence* means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.
• *In the subsurface* means the munition (*i.e.*, a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.
• *On the surface* means the CWM (*e.g.*, a DMM or UXO) is (1) entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).
• The term *small arms ammunition* means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

The Ease of Access data element focuses on the means for an encounter with CWM based on the extent of controls preventing access or entry to the MRS. Both natural obstacles (*e.g.*, dense vegetation, rugged terrain, water) and man-made controls (*e.g.*, fencing) are considered in this analysis. DoD deliberated over numerous data elements and associated definitions to best capture these conditions. DoD found the conditions within this data element difficult to capture, especially for large MRS that have not been characterized and had varying conditions across the MRS (*e.g.*, short grass and dense swamp).

The classifications, the definition for each classification, and associated numerical scores for the Ease of Access data element are presented in Table 14.

TABLE 14.—CLASSIFICATIONS WITHIN THE CHE EASE OF ACCESS DATA ELEMENT

Classification	Description	Score
No barrier	• There is no barrier preventing access to all parts of the MRS (*i.e.,* all parts of the MRS are accessible).	10
Barrier to MRS access is incomplete	• There is a barrier preventing access to parts of the MRS but not the entire MRS	8
Barrier to MRS access is complete but not monitored.	• There is a barrier preventing access to all parts of the MRS, but there is no surveillance (*e.g.,* by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5
Barrier to MRS access is complete and monitored.	• There is a barrier preventing access to all parts of the MRS, and there is active continual surveillance (*e.g.,* by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0

Notes: Barrier means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), or a combination of natural and man-made obstacles.

The last data element in the *Accessibility* factor is *Status of Property*. Its purpose is to differentiate between MRS that DoD controls and MRS that DoD does not control. Based on comments received during the consultation with the Tribes, DoD revised the definition of Non-DoD control to specifically include all Indian lands (*i.e.*, trust lands, allotments, and Alaska Native Claims Settlement Act (ANCSA)-conveyed property). DoD also included property transferring from DoD control within 3 years in this data element to address those MRS that may be currently controlled by DoD but are planned for transfer to non-DoD entities in the near future. There are three classifications, *DoD control, Scheduled for transfer from DoD control*, and *Non-DoD control*.

The classifications, the definition for each classification, and associated numerical scores for the Status of Property data element are presented in Table 15.

TABLE 15.—CLASSIFICATIONS WITHIN THE CHE STATUS OF PROPERTY DATA ELEMENT

Classification	Description	Score
Non-DoD control	• The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by American Indian or Alaskan Native Tribes, or State or local governments; and lands or water bodies managed by other Federal agencies.	5
Scheduled for transfer from DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by control DoD, and DoD plans to transfer that land or water body to control of another entity (*e.g.*, a State, American Indian, Alaskan Native, or local government; a private party; another Federal agency) within 3 years from the date the Protocol is applied.	3
DoD control	• The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the DoD. With respect to property that is leased or otherwise possessed, DoD controls access to the property 24-hours per day, every day of the calendar year.	0

(3) Receptor Factor

The Receptor factor focuses on the human and ecological populations that may be impacted by the presence of CWM. Its four data elements constitute 20 percent of numerical score of the CHE module.

The *Population Density* data element is used to both assess the number of persons that could potentially access the MRS and potentially be at risk from known or suspected CWM present at the MRS. Using U.S. Census Bureau data, it is based on the number of people per square mile in the county in which the MRS is located. If the MRS is located in more than one county, DoD will use the largest population value among the counties. DoD selected county population density for this element because city population information was not consistently available for all MRS, especially those in more rural or remote locations. If the MRS is within or borders on city limits, the population density of the city should be used instead of the county population density. During consultation with States, Tribes, and other Federal agencies, some agencies expressed a desire to use alternate and other readily available data (*e.g.*, daily visitor counts to national recreational areas) in place of census data. DoD considered this approach but, for consistency in the Protocol's application, determined that such site-specific data would best be addressed in implementation guidance or considered as ''risk plus'' or ''other'' factors when determining the sequencing for MRS. DoD also initially considered differentiating between on-site and off-site populations but found such an approach unworkable.

The classifications, the definition for each classification, and associated numerical scores for the *Population Density* data element are presented in Table 16.

TABLE 16.—CLASSIFICATIONS WITHIN THE CHE POPULATION DENSITY DATA ELEMENT

Classification	Definition	Score
> 500 persons per square mile	• There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	5
100-500 persons per square mile	• There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	3
< 100 persons per square mile	• There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data.	1

Notes:
• If an MRS is in more that one county, the DoD Component will use the largest population value among the counties. If the MRS is within or borders a city or town, the population density for the city or town instead of the county population density is used.

The *Population Near Hazard* data element is estimated based on the number of inhabited structures [3] on the MRS and within a 2-mile distance extending out from the boundary of the MRS. Although this element is defined based on the number of inhabited structures, DoD's focus is on the potential for human populations within the structures, not on the structures themselves.

The classifications, the definition for each classification, and associated numerical scores for the *Population Near Hazard* data element are presented in Table 17.

TABLE 17.—CLASSIFICATIONS WITHIN THE CHE POPULATION NEAR HAZARD DATA ELEMENT

Classification	Description	Score
26 or more structures	• There are 26 or more inhabitated structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5
16 to 25	• There are 16 — 25 inhabitated structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4

[3] Under the DoD Explosive Safety Standards, inhabited structures are considered as structures, including schools, churches, residences, aircraft passenger terminals, stores, shops, factories, hospitals, and theaters, other than DoD munitions-related structures, routinely occupied for any portion of the day, both within and outside of DoD facilities. Occupied temporary structures are also included.

TABLE 17.—CLASSIFICATIONS WITHIN THE CHE POPULATION NEAR HAZARD DATA ELEMENT—Continued

Classification	Description	Score
11 to 15	• There are 11 — 15 inhabitated structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3
6 to 10	• There are 6 — 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2
1 to 5	• There are 1 —5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1
0	• There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	

Notes: The term inhabited structures means permanent or temporary structures, other than DoD munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

The *Types of Activities/Structures* data element is used to assess information about the population and activities near the hazard. Through this data element, DoD strives to address multiple factors, including the amount, type, the intrusiveness of activities, and the likelihood of people to congregate onsite and within a 2-mile radius of the MRS. Consideration is made to reflect the nature of the activities that may result in an encounter with CWM. Residential and recreational areas are weighted highest to reflect the types of activities and population (*e.g.*, children) that may be in their vicinity. In response to Tribal comments, DoD included subsistence issues in the highest classification.

The classifications, the definition for each classification, and associated numerical scores for the *Types of Activities/Structures* element are presented in Table 18.

TABLE 18.—CLASSIFICATIONS WITHIN THE CHE TYPES OF ACTIVITIES/STRUCTURES DATA ELEMENT

Classification	Description	Score
Residential, educational, commerical, or subsistence.	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary, or within the MRS's boundary that are associated with any of the following purposes; residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial shopping centers, playgrounds, community gathering areas, religious sites or sites used for subsistence hunting, fishing, and gathering.	5
Parks and recreational areas	• Activities are conducted or inhibited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that area associated with parks, nature preserves or other recreational uses.	4
Agricultural, forestry	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary, within the MRS's boundary that are associated with agriculture or forestry.	3
Industrial or warehousing	• Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary, within the MRS's boundary that are associated with industrial activities or warehousing.	2
No known or recurring activities	• There are no known of recurring recurring activities occurring up to 2 activities miles from the MRS's boundary or within the MRS's boundary.	1

Notes: The term inhabited structures means permanent or temporary structures, other than DoD munitions-related structures, are routinely occupied by one or more persons for any portion of a day.

Through the *Ecological and/or Cultural Resources* data element, DoD recognizes the importance of the ecological and cultural resources present on an MRS. This data element considers threatened and endangered species, critical habitat, sensitive ecosystems, natural resources, historical sites, historic properties, cultural items, archeological resources, and American Indians or Alaska Natives spiritual sites (*e.g.*, the MRS is deemed by American Indian or Alaska Natives to be of spiritual significance, or there are areas that are used by American Indian and Alaska Natives for subsistence activities, such as hunting or fishing). Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act. The greatest weight is awarded to MRS with both cultural and ecological resources.

The classifications, the definition for each classification, and associated numerical scores for the Ecological and/or Cultural Resources data element are presented in Table 19.

TABLE 19.—CLASSIFICATIONS WITHIN THE CHE ECOLOGICAL AND/OR CULTURAL RESOURCES DATA ELEMENT

Classification	Description	Score
Ecological and cultural resources present	• There are both ecological and cultural resources present on the MRS	5
Ecological resources present	• There are ecological resources present on the MRS	3
Cultural resources present	• There are cultural resources present on the MRS	3

TABLE 19.—CLASSIFICATIONS WITHIN THE CHE ECOLOGICAL AND/OR CULTURAL RESOURCES DATA ELEMENT—Continued

Classification	Description	Score
No ecological or cultural resources present.	• There are no ecological resources or cultural resources present on the MRS	0

Notes:

• Ecological resources means that: (1) A threatened or endangered species (designated under the Endangered Species Act (ESA)) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.

• Cultural resources means there are recognized cultural, spiritual, traditional, religious, or historical features (*e.g.*, structures, artifacts, symbolism) on the MRS. For example, American Indians or Alaska Natives deem the MRS to be of spiritual significance or there are areas that are used by American Indians or Alaska Natives for subsistence activities (*e.g.*, hunting, fishing). Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act.

(4) CHE Module Rating

As described earlier in discussion of the CHE module, each data element provides a numeric value that contributes to the CHE module score. The sum of the nine data elements is the CHE module score.

There are seven CHE module ratings derived from the CHE module scores, as illustrated in Table 20, plus three alternatives to account for the chemical hazard potential at an MRS.

TABLE 20.—DETERMINING THE CHE RATING FROM THE CHE MODULE SCORE

Overall CHE module score	CHE rating
The MRS has an overall CHE module score from 92 to 100.	CHE Rating A
The MRS has an overall CHE module score from 82 to 91	CHE Rating B
The MRS has an overall CHE module score from 71 to 81	CHE Rating C
The MRS has an overall CHE module score from 60 to 70	CHE Rating D
The MRS has an overall CHE module score from 48 to 59	CHE Rating E
The MRS has an overall CHE module score from 38 to 47	CHE Rating F
The MRS has an overall CHE module score less than 38	CHE Rating G

In addition, there are three other possible outcomes:

• *Evaluation pending.* This category is used when CWM is believed or known to be present but sufficient information is not available to conduct the evaluation.

• *No longer required.* This category is reserved for MRS that no longer require an evaluation for a potential CWM hazard because DoD has conducted a response, all response objectives set out in the decision document for the MRS have been achieved, and no further action, except for long-term management and recurring reviews, is required.

• *No known or suspected CWM Hazard.* This category is reserved for MRS that do not require evaluation under the CHE module.

C. The Relative Risk Site Evaluation (RRSE) Hazard Module

In 1994, the DoD Inter-Service Relative Risk Working Group, comprised of representatives from the DoD Components, developed the RRSE framework for use in prioritizing sites under the Installation Restoration program (IRP) category of the DERP. The RRSE framework addresses chronic health and environmental effects of many of the chemicals known to have been released into the environment from activities at DoD installations and FUDS. The RRSE was revised in 1997, to address questions, comments, and DoD initiatives that arose during the first twenty months of implementation.

DoD will use the RRSE module to evaluate the potential hazards posed by munitions constituents or CWA at a MRS relative to the hazard potential at other MRS. The grouping of MRS into *high, medium,* or *low* relative risk categories is not a substitute for a baseline risk assessment or health assessment, nor is it a means for selecting a remedy or placing MRS into a Response Complete/No Further Action category.

DoD has elected to apply the RRSE framework to evaluate the potential chronic health and environmental effects of munitions constituents at MRS because it has been successfully used at sites in the IRP. Using the same framework to evaluate IRP sites and MRS ensures consistency in the approach taken to evaluate chronic health and environmental effects of chemicals released to the environment.

In the RRSE module, MRS with releases of munitions constituents or CWA are grouped in high, medium, and low priority categories based on an evaluation of MRS information using three factors and four media and their exposure endpoints:

• Factors:
—Contaminant hazard factor (CHF)
—Migration pathway factor (MPF)
—Receptor factor (RF)
• Endpoints:
—Groundwater, considering only a human receptor endpoint
—Surface water, using both a human and an ecological endpoint
—Sediments, using both a human and an ecological endpoint
—Surface soils (*i.e.*, soils in the depth range of 0–6 inches) using a human endpoint.

Each environmental medium is evaluated using three factors that relate to the three structural components of the conceptual site model used in environmental risk assessments: source, pathway, and receptor. In the RRSE, the CHF (relationship of contaminants to comparison values) is the source term; MPF (likelihood/extent of contaminant migration) is the pathway term; and RF (likelihood of receptor exposure to contamination) is the receptor term.

Each of these three factors is rated on a scale of three values (*e.g.*, the scale for the contaminant hazard factor is *significant, moderate,* or *minimal*) based on up-to-date and representative MRS information. For each environmental medium, factor ratings are combined to determine the environmental medium-specific rating of *high, medium,* or *low*. The MRS is then placed in an overall priority category of high, medium, or low, based on the highest medium-specific rating.

(1) Contaminant Hazard Factor

The CHF is based on the ratio of the maximum concentration of a contaminant detected in an environmental medium to an established risk-based comparison value for the contaminant in that medium. The CHF is rated significant, moderate or minimal. A significant rating is given when the sum of ratios of the maximum concentration of a contaminant detected

to the comparison value is greater than 100. A moderate rating is given when the ratios are greater than 2 but less than 100. A minimal rating is assigned when the ratios are less than 2. The framework uses available site information to evaluate three media of concern: groundwater, surface water and sediment, and surface soils.

The calculation is shown in Figure 2.

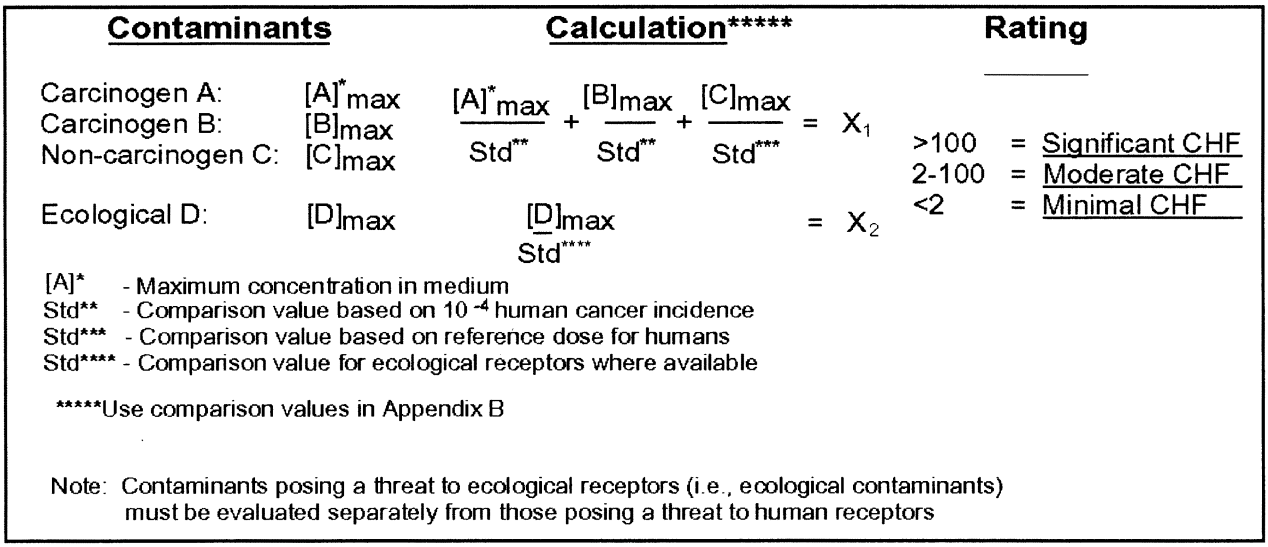

Figure 2: Contaminant Hazard Factor Calculation

The comparison values used for this evaluation are provided in the Relative Risk Site Evaluation Primer (Summer 1997, Revised Edition), which can be referenced through the World Wide Web in the publications sections at *http://www.dtic.mil/envirodod*. DoD will update these values on an as needed basis to reflect the latest information available from sources such as the Integrated Risk Information System (IRIS) maintained by the EPA or the EPA Region IX Preliminary Remediation Goals (PRGs).

(2) Migration Pathway Factor

The MPF represents the likelihood of transport of contaminants through groundwater, surface water and sediment, and soil. The MPF is determined by matching available site information on pathways with the corresponding definitions about the likelihood of contaminant migration. The MPF is rated evident, potential, or confined according to the following definitions about the likelihood of contaminant migration for each environmental medium:

(a) Groundwater

- *Evident*—Analytical data or observable evidence indicates that contamination in the groundwater is moving or has moved away from the source area.
- *Potential*—Contamination in the 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.
- *Confined*—Information indicates that the potential for contaminant migration from the source via the groundwater is limited (due to geological structures or physical controls).

(a) Surface Water and Sediment

- *Evident*—Analytical data or observable evidence indicates that contamination in surface water and/or sediment is present at, moving toward, or has moved to a point of exposure.
- *Potential*—Contamination in surface water or 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.
- *Confined*—Information indicates a low potential for contaminant migration from the surface water or sediment source to a potential point of exposure (could be due to presence of geological structures or physical controls).

(c) Soils

- *Evident*—Analytical data or observable evidence that contamination in the soil is present at, is moving toward, or has moved to a point of exposure.
- *Potential*—Contamination in the 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.
- *Confined*—Information indicates a low possibility for contamination to be present at or migrate to a point of exposure.

(3) Receptor Factor

Information about the present or future likelihood of receptors for each MRS is summarized as the Receptor Factor (RF). RF of identified, potential, or limited are determined by analysis of available information on receptors at MRS. Human and ecological receptors (*i.e.*, endpoints for exposure) to be considered are as follows:

(a) Groundwater

Human receptors include those individuals that may be exposed to groundwater contamination via onsite and down gradient water supply wells used for human consumption or in food production. Groundwater is classified using the EPA's *Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy,* Office of Groundwater Protection, 1986. Ecological receptors are not evaluated.

(b) Surface Water and Sediment

These two media are discussed together since they potentially affect the same receptors. Human receptors for

surface water and sediment share the same migration pathway and, therefore, include those individuals that may be exposed to surface water or sediment contamination through onsite and down gradient water supplies and recreational areas. Receptors include down gradient water supplies used for drinking water, irrigation of food crops, watering of livestock, aquaculture, and recreational activities such as fishing. Ecological receptors for surface water and sediment are limited to critical habitats and other similar environments that are reasonably expected to be impacted by a MRS.

(c) Surface Soil.

Human receptors include residents, people in schools and daycare, and workers who have direct access to contamination on a frequent basis. Ecological receptors are not considered for evaluation of the surface soil since ecological standards are generally not available for the CHF calculation; however, ecological receptors may be incorporated into the soil evaluation if ecological standards become available.

(4) Calculation of the RRSE Module Rating

For each medium at a MRS, the CHF, MPF, and RF are combined to obtain the relative risk (high, medium, or low) for that medium. The highest RRSE result for a medium determines the RRSE designation for the MRS. If there is insufficient information to complete the RRSE evaluation, the MRS is assigned a value of ''evaluation pending.'' DoD will determine each MRS's relative priority after combining its RRSE rating with the ratings determined from the EHE and CHE modules.

The matrix for assigning the overall RRSE hazard rating is provided in Table 21.

TABLE 21.—RELATIVE RISK SITE EVALUATION MODULE HAZARD RATING

Contaminant hazard factor and receptor factor	Migration pathway		
	Evident	Potential	Confined
Significant:			
Identified	High	High	Medium.
Potential	High	High	Medium.
Limited	Medium	Medium	Low.
Moderate:			
Identified	High	High	Low.
Potential	High	Medium	Low.
Limited	Medium	Low	Low.
Minimal:			
Identified	High	Medium	Low.
Potential	Medium	Low	Low.
Limited	Low	Low	Low.

D. Assigning the MRS Priority—Integrating the EHE, CHE, and RRSE Module Ratings

As illustrated in Table 22, DoD proposes a MRS prioritization concept for comment that considers the results of the three hazard evaluation modules. The concept involves comparing the individual evaluation of the EHE, CHE, and RRSE modules using Table 22. Once the appropriate ratings are selected for each hazard evaluation module, the module with the lowest numerical value (*e.g.*, Priority 1 versus Priority 5) determines the MRS priority. For example, if the EHE module rating for an MRS is Hazard Rating A, the CHE module rating is Hazard Rating E, and the RRSE module rating is medium, the MRS would be assigned to Priority 2, based on the EHE module rating.

TABLE 22.—MRS PRIORITY BASED ON HIGHEST HAZARD EVALUATION MODULE RATING

EHE module rating	Priority	CHE module rating	Priority	RRSE module rating	Priority
		Hazard Evaluation A (Highest)	1		
Hazard Evaluation A (Highest)	2	Hazard Evaluation B	2	High (highest)	2
Hazard Evaluation B	3	Hazard Evaluation C	3		
Hazard Evaluation C	4	Hazard Evaluation D	4		
Hazard Evaluation D	5	Hazard Evaluation E	5	Medium	5
Hazard Evaluation E	6	Hazard Evaluation F	6		
Hazard Evaluation F	7	Hazard Evaluation G (Lowest)	7		
Hazard Evaluation G (Lowest)	8			Low	8
No Longer Required		No Longer Required		No Longer Required	
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Known or Suspected Explosive Hazard.		No Known or Suspected CWM Hazard.			N/A

Each MRS will ultimately be assigned one of eight MRS priorities based on the ratings of the three hazard evaluation modules. Only MRS with a potential CWM hazard can be assigned to Priority 1, and no MRS with CWM can be assigned to Priority 8. A ''prioritization no longer required'' designation is used to indicate that a MRS no longer requires prioritization. This designation is used only when all three hazard evaluation modules are rated as ''no longer required'' or ''no known or suspected explosive hazard'' or ''no known or suspected CWM hazard.''

As described previously, any hazard evaluation module for which there is insufficient information to complete the hazard evaluation will be placed into an ''evaluation pending'' rating for that

module, and the MRS priority will be assigned based on the modules (if any) for which sufficient data were available for a complete evaluation of the hazard. The Protocol will be reapplied to the MRS when data to complete evaluation of the remaining modules is obtained.

DoD Components will review each MRS priority at least annually and update the priority as necessary to reflect new information that has become available. The Protocol will be reapplied at a MRS under the following circumstances:

(1) Upon completion of a response action that could change the site conditions evaluated by the hazard evaluation modules at the MRS.

(2) To update or validate a previous module evaluation at an MRS when new information is available.

(3) To update or validate an MRS priority that was previously assigned based on evaluation of only one or two of the three hazard evaluation modules.

(4) Upon further delineation and characterization of an MRA into MRS.

(5) To categorize MRS previously classified as ''evaluation pending.''

DoD Components are directed to develop and maintain records on the application of the Protocol for each MRS. At a minimum, the records shall contain references to all information and documents used for the evaluation (*e.g.*, field logs, data from preliminary assessments, site inspections, or remedial investigations/feasibility studies, risk assessments), evaluation documentation (*e.g.*, worksheets), and database records. These records will be included in the Administrative Record for the MRS.

DoD Components will also report the MRS priority and the ratings for each hazard evaluation module to the Office of the Deputy Under Secretary of Defense (Installations & Environment) for inclusion in the DERP Annual Report to Congress.

IX. Schedule for Application of the Protocol and for Addressing MRS Assigned a Rating of ''Evaluation Pending''

DoD intends that the Protocol be applied to any given MRS as soon as the information required to populate any of the modules is available. Where a DoD Component has some, but not all the data to apply any of the modules, DoD believes it appropriate to establish programmatic goals and specific milestones for applying the Protocol. For example, the Formerly Used Defense Sites (FUDS) program has most of the data required for application of the EHE and CHE modules at a significant number of FUDS. This is known because FUDS have been evaluated using the risk assessment code, one of the two interim tools DoD adopted to prioritize munitions responses. There are also a much smaller number of sites that have been evaluated using the RRSE tool, the other interim tool DoD adopted in the Management Guidance to prioritize munitions responses. DoD also realizes that it does not have any of the data required to apply the Protocol at other MRS. These MRS will be initially assigned the rating of ''evaluation pending.''

DoD intends to establish specific milestones for applying the Protocol that differentiate among MRS that have undergone a RAC or RRSE evaluation, MRS with a status of ''evaluation pending,'' and MRS identified after May 31, 2003. While DoD does not intend to include such goals and milestones in the final regulation, DoD believes that input from interested parties may prove valuable in determining an appropriate time frame for application of this Protocol to the MRS in the inventory, and suggests the following goals are appropriate:

- For each MRS in the inventory as of May 31, 2003, that has not been evaluated using the RAC or RRSE tools and which is assigned a status of ''evaluation pending:''
  - —A priority will be assigned based on an evaluation using at least one hazard evaluation module by May 31, 2007.
  - —A priority will be assigned based on an evaluation using all hazard evaluation modules by May 31, 2012.
- For each MRA or MRS identified after May 31, 2003:
  - —A priority will be assigned based on an evaluation using at least one hazard module within 2 years of identification or by May 31, 2007, whichever is later.
  - —A priority will be assigned based on an evaluation using all hazard modules within 4 years of identification or by May 31, 2012, whichever is later.

X. Protocol Testing Methodology

In developing the Protocol, DoD conducted extensive testing of various alternative constructions. This testing helped DoD develop the numeric values for the data elements and factors, achieve consistent and repeatable results, ensure an appropriate spread of MRS across the priority outcomes, and ensure MRS were assigned appropriate outcomes based on site conditions.

A. Selection of Sites

During development of the Protocol, more than 70 MRS were tested using the Protocol. The majority of MRS selected for testing were FUDS because DoD had the most data for these MRS. Within FUDS, MRS ranging from a minimal hazard to the highest hazard were tested. In addition, DoD selected MRS known to contain multiple hazards (*i.e.*, EHE, CHE, and/or RRSE) as a means to test the logic of the evaluation of each hazard module and the overall Protocol.

B. Testing Format

DoD tested the Protocol on numerous occasions. Testing was completed during presentations to stakeholders, during weekly internal working group meetings, and during several concentrated testing sessions with DoD personnel. Testing working groups typically consisted of a small group of DoD experts knowledgeable in munitions response and environmental restoration. The majority of testing was conducted by a core group of participants to promote consistency.

The group testing the model typically scored three to five MRS at a time, reviewing available data and documenting their findings in a worksheet developed specifically for the testing. Worksheets were developed specific to each module. Other personnel compiled the scores as the group testing the model completed each grouping of MRS. The compiled scores facilitated discussion held after every three to five MRS to give the group a chance to discuss any significant issues or problems encountered. As revisions were made to the Protocol, additional testing was performed to ensure the validity of the changes.

C. Testing Conclusions

After the final testing session, DoD performed a detailed data analysis on both the results received from hands-on testing, as well extensive modeling analysis. Testing was completed to ensure that there was a logical spread across MRS, and that the scores themselves were logical for each MRS. Modeling was conducted as a final step to analyze the logic in the scorings and weightings. Upon completion of the analysis, the DoD work group discussed the results and made the necessary modifications.

DoD is confident that the testing conducted indicated the Protocol provides a useful tool for prioritizing MRS. The testing and the comments received from stakeholders were critical in assisting DoD with developing this proposal.

XI. Determination of Site Sequencing

DoD believes that the sequencing of MRS for implementation of response actions should be based primarily on the relative priority assigned by the Protocol, but may also consider other factors. This approach to decision making is embodied in the current Management Guidance and grew out of the recommendations of the Federal Facilities Environmental Restoration Dialogue Committee (FFERDC). One of the main issues the Committee considered was need to set priorities due to the magnitude of the challenge of environmental restoration at Federal facilities. The Committee believed that priority setting and funding allocation must be done in a manner that stakeholders perceive fair and inclusive. The Committee developed consensus policy recommendations aimed at improving the process by which Federal facility environmental restoration decisions are made, such that these decisions reflect the priorities and concerns of all stakeholders. In the area of consideration of human health and environmental risk and other factors in Federal facility environmental restoration decision making, the Committee made the following recommendation:

Risk to human health and the environment is an important and well-established factor that should continue to be a primary consideration in Federal facility cleanup decision making, including setting environmental cleanup priorities and milestones. However:

(a) Human health and environmental risk assessments and other analytical tools used to evaluate risks to human health (including non-cancer as well as cancer health effects) and the environment all have scientific limitations and require assumptions in their development. As decision-aiding tools, risk assessments should only be used in a manner that recognizes those limitations and assumptions. Moreover, risk assessments ought not be used by any party as a basis for unilaterally setting aside legal requirements that embody public health principles and other important societal values.

(b) In addition to human health and environmental risk, other factors that warrant consideration in setting environmental cleanup priorities and milestones include:

- Cultural, social, and economic factors, including environmental justice considerations,
- Short-term and long-term ecological effects and environmental impacts in general, including damage to natural resources and lost use,
- Making land available for other uses,
- Acceptability of the action to regulators, Tribes, and public stakeholders,
- Statutory requirements and legal agreements,
- Life cycle costs,
- Pragmatic considerations, such as the ability to execute cleanup projects in a given year, and the feasibility of carrying out the activity in relation to other activities at the facility,
- Overall cost and effectiveness of a proposed activity, and
- Actual and anticipated funding availability.

The sequencing process described in this regulation builds on DoD's experience in implementing the FFERDC recommendations over the past 10 years. In addition, DoD received comments from a wide range of stakeholders supporting a decision making process that considers other factors in making sequencing decisions.

Generally, MRS that present a greater relative risk to human health, safety, or the environment will be addressed before MRS that present a lesser risk; however, in evaluating other factors as part of making sequencing decisions, DoD will consider a broad range of factors. These ''risk-plus'' or ''other management'' factors do not influence or change the prioritization results but may influence the sequence in which MRS are addressed. Specific examples of factors DoD may consider include:

- Concerns expressed by stakeholders.
- Cultural and social factors.
- Economic factors, including economic considerations pertaining to environmental justice issues, economies of scale, evaluation of total lifecycle costs, and estimated valuations of long-term liabilities.
- The reasonably anticipated future land use, especially when planning response actions, conducting evaluations of response alternatives, or establishing specific response action objectives.
- Community reuse requirements at BRAC installations.
- Implementation and execution considerations (*e.g.*, funding availability; the availability of the necessary equipment and people to implement a particular action; examination of alternatives to responses that entail significant capital investments, a lengthy period of operation, or costly maintenance; considering alternatives to removal or treatment of contamination when existing technology cannot achieve established standards, such as maximum contaminant levels.
- The availability of technology to detect, discriminate, recover, and destroy UXO or DMM.
- Implementing standing commitments including those in formal agreements with regulatory agencies, requirements for continuation of remedial action operations until response objectives are met, other long-term management activities, and program administration.
- Tribal trust lands, which are lands held in trust by the United States for the benefit of any Indian Tribe or individual. The United States holds the legal title to the land and the Tribe holds the beneficial interest.
- Established program goals and initiatives.
- Short-term and long-term ecological effects and environmental impacts in general, including injuries to natural resources.

DoD uses its process for developing and updating Management Action Plans (MAP) or an equivalent document as the vehicle for making sequencing decisions. Each installation or FUDS is required to develop and maintain a MAP or its equivalent. MAPs are required to be updated on at least an annual basis. Guidance on preparing and updating the MAP is provided in the *Management Guidance.* Sequencing decisions at installations and FUDS are developed with input from stakeholders, such as the regulatory and community members of an installation's RAB, and are documented in the MAP.

During the annual update of the MAP, installation or FUDS personnel will be required to publish an announcement in a local community publication notifying the public of the following:

(1) The existence of MRS, including a brief description of each MRS addressed, the conditions, and assigned priority,

(2) The intention to develop or update the MAP for the MRS,

(3) The intention to apply the Protocol to each MRS,

(4) The specific means the public or Tribes can use to submit information about each MRS that may influence the priority assigned or the funding sequence assigned, and

(5) The name and contact information for the designated DoD spokesperson for each MRS.

Final sequencing may also be impacted by DoD Component program management considerations. If the sequencing of any MRS is changed from the sequencing reflected in the current MAP, the DoD Component will provide information to the stakeholders documenting the reasons for the sequencing change and will request their review and comment on that decision.

In addition, DoD Components will ensure that all information influencing the sequencing of an MRS is included in the Administrative Record and the Information Repository. On a

programmatic level, DoD Components will report the results of sequencing to the ODUSD (I&E).

XII. Consultation

The provisions of 10 U.S.C. 2710 required the DoD to develop this proposed Protocol in consultation with States and Tribes. DoD has followed Congress' direction, specifically working with States, Tribes, and other interested stakeholders throughout the development process. DoD appreciates the involvement and contributions of these stakeholders in the development process. Many of the comments received were incorporated into the Protocol. Some of the actions DoD took include:

A. Advanced Notice of Proposed Rulemaking. On March 20, 2002, DoD published an *Advanced Notice of Proposed Rulemaking* in the **Federal Register** to inform stakeholders of DoD's efforts to develop a tool for prioritizing MRS and to request suggestions on current prioritizing methods in use and factors to consider in developing the Protocol. DoD has reviewed all comments received and has considered them in its development of the Protocol.

B. DENIX Web site. Beginning in March 2002, DoD established a Website specific to the Protocol development effort on the Defense Environmental Network & Information eXchange. DoD provided information on the Protocol regarding background and status of development efforts as well as an opportunity for stakeholders to submit comments electronically.

C. Consultation with other Federal Agencies. In December 2002 and February 2003, ODUSD (I&E) personnel met with representatives from the U.S. Department of Agriculture, U.S. Department of Interior, and EPA to discuss their concerns and comments on the Protocol.

D. Consultation With States

(1) *Formal Notice for Protocol Development.* Although DoD discussed the Protocol with State representatives at meetings of various organizations, the Deputy Under Secretary of Defense (Environment) (ADUSD(E)) sent a letter to the head (*e.g.*, Secretary, Commissioner, Director) of the environmental agency for each State and U.S. territory providing notification and background on the Protocol development effort and requesting a point of contact for future correspondence. DoD received formal responses from 15 States and territories. DoD considered all submitted comments during its development of the Protocol.

(2) *State Meeting.* To facilitate State involvement in the development of the Protocol, in November 2002 and February 2003, DoD invited representatives from the 50 States and U.S. territories to attend a meeting to discuss State concerns. Participants reviewed the Protocol and discussed their comments with representatives from the ODUSD (I&E)) and DoD Components.

(3) *Munitions Response Committee.* DoD established the Munitions Response Committee (MRC) to coordinate, identify and synchronize efforts among DoD, other Federal agencies, the States, and Tribes to ensure munitions responses at locations on other than operational ranges are conducted in a manner that protects public health and the environment while allowing the military to fulfill its mission. DoD worked with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) and National Association of Attorneys General (NAAG) to determine how best to achieve representation of State interests and concerns on the MRC. Delegates from the ASTSWMO Board of Directors and Committees served as representatives expressing potential State concerns in managing activities at MRS. DoD also engaged the National Congress of American Indians (NCAI) to participate in the MRC. DoD discussed its Protocol development efforts with the MRC at meetings held in March, May, July, and November 2002, as well as through numerous teleconferences. The July meeting was conducted in conjunction with the annual Defense and State Memorandum of Agreement Conference.

(4) *ASTSWMO.* In addition to coordination with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) through the MRC, DoD also sought to engage ASTSWMO members directly. In October 2002 and April 2003, DoD representatives participated in ASTSWMO's annual meeting—presenting a brief update at a breakout session and individually discussing the Protocol with members.

E. Consultation With Tribes

DoD is committed to working with Tribes on a government-to-government basis in recognition of their sovereignty and in a continuing effort to implement the 1998 DoD American Indian and Alaska Native Policy. In recognition of this commitment and policy and to fulfill congressional requirements, DoD consulted with Tribes throughout the development of the Protocol.

(1) *Formal Notice for Protocol Development.* In April 2002, the ADUSD(E) sent a letter to each Tribal leader of the 586 Federally-recognized Tribes notifying them of the effort to develop the Protocol to prioritize MRS known or suspected to have UXO, DMM, or MC, inviting them to participate in the effort, and requesting of them any information regarding the presence of UXO, DMM, or MC on their lands.

(2) *National Tribal Conference on Environmental Management.* In June 2002, DoD participated in the 6th National Tribal Conference on Environmental Management. DoD representatives briefed interested conference attendees on the background and develop of the Protocol and requested comments and factors to consider in its development. DoD asked several interested Tribal members to participate in a subsequent MRC meeting.

(3) *Tribal Consultation Meetings.* In September 2002 and April 2003, DoD hosted meetings specifically for Tribes whose lands may be impacted by UXO, DMM, or MC. The meeting was intended to ensure that DoD fully considers concerns specific to Tribes in the Protocol. DoD briefed the Tribal participants on the status of the development efforts and discussed their comments and concerns.

(4) *National Congress of American Indians.* In November 2002, DoD attended the 59th Annual Session of the National Congress of American Indians. DoD briefed conference participants in a breakout session on the draft Protocol construct and requested participants to provide their comments and concerns.

(5) *Native American Lands Environmental Mitigation Program Meeting.* DoD provided materials for distribution to interested Tribal members at the annual meeting of the Native American Lands Environmental Mitigation Program in November of 2002 in Juneau, Alaska.

F. DoD Response to Preliminary Comments

In developing this Protocol, DoD actively solicited ideas from interested stakeholders on the scope, structure, and specific features of a Protocol for prioritizing MRS. In addition to the **Federal Register** notice announcing development of the Protocol and requesting input from interested parties, DoD set up a Web site where parties could submit comments and ideas. DoD also actively sought ideas in numerous meetings with other Federal agencies, States, Tribes, and the public.

DoD was pleased with the response to its request for ideas, having received comments and ideas from other Federal agencies, States, Tribes, and members of

the public. The comments and ideas received were in five general areas, including:

• *Definitions.* Most of these comments and ideas submitted addressed recommendations that would provide greater clarity in the definitions.

• *Factors or Data Elements.* Most of these comments and ideas addressed the need for a specific data element that the commenter thought should be included in the Protocol. Other comments addressed the scores for each of the data elements and factors included in one of the deliberative drafts provided to stakeholders during the development process.

• *Policy.* In general, the comments and ideas in this area related to questions or recommendations related to the scope and application of the Protocol.

• *Other Protocols.* These comments and ideas focused primarily on other Protocols or tools that DoD should evaluate for their utility as a prioritization tool. Other comments addressed specific features (*e.g.*, data elements) of other tools that the commenter thought DoD should consider in developing this Protocol.

• *Other Issues.* The comments and ideas in this area were unrelated to the development of this Protocol. Examples include comments regarding the inventory of MRS required under 10 U.S.C. 2710(a) and funding policy.

DoD carefully reviewed and considered each of the comments submitted. The value of these comments and ideas is shown by the fact that this Protocol incorporates many of the ideas provided by interested parties. DoD would like to express its gratitude to all who gave of their time and effort by submitting comments and ideas. To ensure that DoD did consider each of the comments or ideas submitted, a matrix was developed, each comment tracked, and DoD's response to the comment documented. A summary of the comments and DoD's responses can be found at *http://www.denix.mil/MMRP_Protocol/comments.html.*

XIII. Notice of Proposed Rulemaking

DoD now solicits comments from the public on this Protocol. In particular, DoD seeks comment on the form and workability of the Protocol, the data elements considered in each module, the factors considered in each module, the rating system for each module, the weight afforded to each module in determining its evaluation hazard score, and the rating system for each MRS priority.

XIV. Summary

The Protocol developed by DoD in consultation with States and Tribes is proposed for public comment for subsequent codification in the Code of Federal Regulations. DoD developed the Protocol to meet the requirements set out in the 10 U.S.C. 2710 to consider and assign relative priorities to MRS based on environmental and explosive hazards. These hazards are evaluated in three areas:

• The explosive hazards posed by any UXO or DMM present at the MRS,

• The hazards posed by any CWM present at the MRS, and

• The health and environmental hazards posed by any MC at the MRS.

The priority assigned to each MRS, as well as the ratings of each of the three hazard evaluation modules (*i.e.*, Explosive Hazard Evaluation, Chemical Warfare Materiel Hazard Evaluation, and Relative Risk Site Evaluation) will be reported in an inventory.

XV. Administrative Requirements

A. Regulatory Impact Analysis Under Executive Order 12866

Executive Order 12866, (58 FR 51735 (October 4, 1993)) requires each Agency taking regulatory action to determine whether that action is ''significant.'' The Agency must submit any regulatory actions that qualify as ''significant'' to the Office of Management and Budget (OMB) for review, assess the costs and benefits anticipated as a result of the proposed action, and otherwise ensure that the action meets the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

DoD has determined that today's Protocol is not a significant rule under Executive Order 12866 because it is not likely to result in a rule that will meet any of the four prerequisites.

(1) The Protocol will not have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities.

The primary effect on the economy will be the necessity for State and/or local governments to conduct oversight of the environmental restoration activities. The Department of Defense has determined it would not place a burden in excess of $100 million each year on State, local, and Tribal governments from implementing the Protocol.

In completing (in FY02) the initial inventory of MRS known or suspected to contain UXO, DMM, or MC, the DoD Components identified 2,307 MRS. The current estimate of the costs of munitions responses is in excess of $11.5 billion, which will be expended over many years. Although this is a significant expenditure, the proposed rule will not increase or decrease response costs, it will only prioritize the response effort among sites.

In determining the total burden placed on State oversight as a result of applying the Protocol at these MRS, a number of specific oversight steps are assumed. Assumptions regarding individual steps in Protocol application and the estimated time necessary to complete each step were based on experience gained during Protocol testing as well as DoD's experience in the application of other priority-setting models, such as the *Risk Assessment Code* (RAC) applied to FUDS and BRAC installations, the *Range Rule Risk Methodology* (R3M) used to screen explosives hazards, as well as other models. In addition, DoD has developed a significant body of experience in conducting activities similar to those required in application of the Protocol during the course of its execution of the DERP. DoD estimates that State regulators, when applying the Protocol to MRS, will first perform a preliminary document review. It is assumed that this step would include reviewing the Protocol materials and guidance; reviewing existing site background documents, such as USACE Archive Search Reports or State and local property records; and preparing materials for a site inspection. DoD assumes this step to take between 2 and 8 hours. DoD then assumes State regulators would perform a non-invasive site inspection, including a site walkthrough and various interviews with personnel familiar with the site. DoD assumes an after-action report, detailing the findings and results of the site inspection, would then be written

by the State regulators. For the site inspection, interviews, and after action report, DoD estimates this step to require between 3 and 24 hours. The final step in State oversight of applying the Protocol would be for the regulators to meet with DoD personnel to discuss and apply the Protocol to MRS using the available information. DoD estimates this step would require between 3 and 8 hours. In total, between 8 and 40 hours would be required for State oversight at each site.

An average labor cost of $24.25 per hour for oversight is assumed. To arrive at this average, DoD assumed an average yearly salary as $50,000, with 2,060 business hours per year. For the purposes of this estimate, DoD assumes a State would use a three-person team to accomplish all requirements of overseeing the application of the Protocol within their State. To this end, DoD estimates the approximate average per MRS cost for State oversight of administering the Protocol is between $194 and $2,910. These low and high site estimates translate into an estimated oversight cost of between $340,276 and $10,208,280 for the entire munitions response site inventory. In addition, since DoD reimburses States for the costs incurred as a result of oversight through the Defense and State Memorandum of Agreement (DSMOA) program, the overall impact to a State is further reduced.

Otherwise, the Protocol will not adversely affect the economy as a whole, any particular sector of the economy, productivity, competition, or jobs since the Protocol does not establish any new spending amounts. Rather, the Protocol merely provides guidance on allocating funds among the MRS.

The Protocol does not have a direct adverse effect on the environment, public health, and safety even though certain sites will be designated as a low priority and, as a result, not see response activities begin in the near-term. Any adverse effects were either a result the actions that caused the UXO, DMM, or MC to be present at the site (*e.g.*, use as a range, treatment of waste military munitions, all of which pre-date the application of the Protocol) or are the result of the munitions response activities that are implemented after the application of the Protocol. In the former instance, any effects should have been evaluated as part of the decision to undertake the actions. In the latter case, munitions response activities are undertaken under CERCLA and the NCP. The evaluation of response alternatives under CERCLA and the NCP has been determined by the U.S. Department of Justice (DOJ) to be the functional equivalent of an assessment under the National Environmental Policy Act (NEPA).

The Protocol also does not have any adverse affect on the economy, environment, public health, and/or safety programs of State, local, or Tribal governments or communities near a MRS. Again, any adverse effects were either a result of the actions that caused the UXO, DMM, or MC to be present at the site (*e.g.*, use as a range, treatment of waste military munitions, all of which pre-date the application of the Protocol) or are the result of the munitions response activities that are implemented after the application of the Protocol. With respect to impacts occurring as a result of the munitions response at the MRS, State, local, or Tribal governments are offered the opportunity to be involved in the planning and execution of the munitions response. The DoD has estimated that the cost of engaging or overseeing munitions response activities is not significant, as that measure is defined by Executive Order 12866. Further, DoD believes that the resources expended on oversight will be returned in the form of benefits to the community through reuse of the property.

For these reasons, DoD has determined that the Protocol will not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities.

(2) The Protocol will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

Implementation of the Protocol will not create a serious inconsistency or otherwise interfere with another agency's action because DoD has lead authority for administering the DERP under 10 U.S.C. 2701(a)(1). The DERP statute delineates the responsibilities of DoD and authority of EPA to some extent. The DoD is required by 10 U.S.C. 2701(a)(3) to consult with the EPA in its administration of the environmental restoration program. Further, Section 2701(c)(2) of the statute gives DoD the responsibility of conducting environmental restoration activities on all properties owned or leased by it, except those for which EPA has entered into a settlement with a potentially responsible party. The Protocol ranking system will not interfere with the Hazard Ranking System (HRS) maintained by the EPA because each serves its own purpose. EPA uses the HRS to place uncontrolled waste sites on the National Priorities List (NPL). EPA does not use the HRS to determine the priority in funding EPA remedial response actions. The DoD will use the Protocol to rank the risks posed by each site, relative to other sites, and may use the Protocol as a basis for determining which sites will receive funding. The DoD's use of the Protocol generally will not interfere with EPA's use of the HRS. DoD action may interfere with EPA action in a situation where EPA decides to pursue response action at a site that DoD has designated as a low priority. Where this occurs, DoD will cooperate with EPA to the extent possible and rely on existing interagency processes to reach agreement on site priorities and response actions. Based on the above reasoning, DoD has determined that there is minimal potential for inconsistencies or interference with action by any other agency.

(3) The Protocol does not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.

The Protocol will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof because no entitlements, grants, user fees, or loan programs are invoked through prioritization of sites for response activities.

(4) The Protocol will not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Finally, the Protocol does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Regulatory Impact Analysis. Congress has already established the requirement for environmental restoration of MRS and for DoD's development of a Protocol for prioritization of MRS. The Protocol is merely a method for DoD to determine a relative priority of MRS for response action. DoD has identified no novel legal or policy issues that this Protocol will create on either a MRS-specific basis or overall. Nor has DoD identified any novel legal or policy issues arising out of the President's priorities or principles set forth in the Regulatory Impact Analysis.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), requires that an agency conduct a regulatory flexibility analysis when

publishing a notice of rulemaking for any proposed or final rule. The regulatory flexibility analysis determines the impact of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). SBREFA amended the Regulatory Flexibility Act to require Federal agencies to state the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

DoD hereby certifies that the Protocol will not have a significant economic impact on a substantial number of small entities. The nature of the Protocol here provides the factual basis for a determination that no regulatory flexibility analysis is required. The Protocol merely provides a procedure by which DoD may prioritize MRS for remediation. No costs are directly imposed on small entities, nor is any action directly required of small entities through this Protocol. Because DoD bears the financial responsibility for remediating MRS, and the source of its funding is Congress, implementation of the Protocol will not directly affect small entities in a financial manner. For the foregoing reasons, DoD believes that this proposed rule, if promulgated, would not have a significant economic impact on a substantial number of small entities.

C. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, requires Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Section 202 of the UMRA requires that, prior to promulgating proposed and final rules with ''Federal mandates'' that may result in expenditures by State, local, and Tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year, the Agency must prepare a written statement, including a cost-benefit analysis of the rule. Under section 205 of the UMRA, DoD must also identify and consider a reasonable number of regulatory alternatives to the rule and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. Certain exceptions to section 205 exist. For example, when the requirements of section 205 are inconsistent with applicable law, section 205 does not apply. In addition, an Agency may adopt an alternative other than the least costly, most cost-effective, or least burdensome in those cases where the Agency publishes with the final rule an explanation of why such alternative was not adopted. Section 203 of the UMRA requires that the Agency develop a small government agency plan before establishing any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments. The small government agency plan must include procedures for notifying potentially affected small governments, providing officials of affected small governments with the opportunity for meaningful and timely input in the development of regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The DoD has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and Tribal governments in the aggregate, or by the private sector in any one year. The term ''Federal mandate'' means any provision in statute or regulation or any Federal court ruling that imposes ''an enforceable duty'' upon State, local, or Tribal governments, and includes any condition of Federal assistance or a duty arising from participation in a voluntary Federal program that imposes such a duty. The Protocol does not contain a Federal mandate because it imposes no enforceable duty upon State, Tribal or local governments. DoD is responsible for funding munitions responses and imposes no costs on other entities by prioritizing MRS using this Protocol. DoD recognizes that the State, local or Tribal government may expend funds to conduct oversight of the response activities. The Protocol, however, does not require such oversight. To the degree such oversight is required, it is required by pre-existing law on which the Protocol has no effect.

D. Paperwork Reduction Act

The Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, prohibits a Federal agency from conducting or sponsoring a collection of information that requires OMB approval, unless such approval has been obtained, and the collection request displays a currently valid OMB control number. Nor is any person required to respond to an information collection request that has not complied with the PRA. The term ''collection of information'' includes collection of information from ten or more persons. The DoD has determined that the PRA does not apply to this regulatory action because, although DoD will collect information on the MRS, it will not use people who are not agency personnel as the source of such information. Therefore, the PRA does not apply to this Protocol.

E. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note), directs Federal agencies to use voluntary consensus for technical standards in its regulatory activities, except in those cases in which using such standards would be inconsistent with applicable law or otherwise impractical. ''Technical standards'' means performance-based or design-specific technical specifications and related management systems practices. Voluntary consensus means that the technical standards are developed or adopted by voluntary consensus standards organizations. In those cases in which a Federal agency does not use voluntary consensus standards that are available and applicable, the agency must provide OMB with an explanation.

Proposal of this Protocol does not involve performance-based or design-specific technical specifications or related management systems practices. The values for relative risk used in the Relative Risk Site Evaluation module, to the extent they qualify as technical standards, were formed through consensus. The Protocol is therefore in compliance with the NTTAA.

F. Executive Order 12898: Environmental Justice

Under Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,'' a Federal agency must, where practicable and appropriate, collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies must then use this information to determine whether their activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

DoD believes that implementation of this Protocol will address environmental justice concerns in several ways. First, the Protocol will address environmental justice by ensuring that prioritization is based primarily on risk to the human health and environment of all populations. The DoD recognizes that prioritization of MRS for response action could result a

low-priority designation for some MRS located in low-income or minority neighborhoods. Under the risk-based approach, however, such prioritization would result in environmental injustice only if low-income and minority populations were disproportionately located near low-risk MRS. If this is, in fact, the case, DoD will reassess its Protocol once an initial ranking is conducted. Second, DoD has reserved a step in the Protocol for consideration of environmental justice concerns, having supplemented the risk-based prioritization decision with consideration of whether low-income or minority populations are near the MRS. Third, because the Protocol will provide DoD with an established method for choosing which MRS to address first, it will ensure uniformity among decisions and eliminate the potential for intentional discrimination against low-income and minority populations. Finally, DoD's engagement with various stakeholders, most notably Native American governments, in developing the Protocol, has helped to build consideration of environmental justice concerns into the Protocol.

DoD plans to continue to study the environmental justice effects once the Protocol is implemented. Until that time, no data exists regarding whether low-income and minority populations live near high-risk MRS as opposed to low-risk MRS. As such, there is currently no way of determining whether generally focusing response efforts first at those MRS that pose a relatively higher risk will in any way adversely affect these segments of the population. DoD decided to include environmental justice considerations in the body of the Protocol as a precautionary measure, but will examine the effect of the Protocol on low-income and minority populations once DoD has implemented it and has data from which to draw.

At this time, DoD believes that no action will directly result from the proposed rule that will have a disproportionately high and adverse human health and environmental effect on any segment of the population. DoD will examine, however, the effects of implementation to ensure that no disproportionately high and adverse human health or environmental effect occurs.

G. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), establishes certain requirements for Federal agencies issuing regulations, legislative comments, proposed legislation, or other policy statements or actions that have ''Federal implications.'' Under the Executive Order, any of these agency documents or actions have ''Federal implications'' when they have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Section 6 of the Executive Order prohibits any agency from issuing a regulation that has Federal implications, imposes substantial direct compliance costs on State and local governments, and is not required by statute. Such a regulation may only be issued if the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agency consults with State and local officials early in the process of developing the proposed regulation. Further, a Federal agency may issue a regulation that has Federalism implications and preempts State law only if the agency consults with State and local officials early in the process of developing the proposed regulation.

This proposed rule does not have Federalism implications because it will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. The statute authorizing DoD's environmental restoration program, 10 U.S.C. 2701, clearly defines the role and responsibilities of DoD with respect to State and local governments. The role and primary responsibility of DoD is to implement an appropriate environmental restoration program at MRS. The DoD funds environmental restoration activities and does not directly affect States in any manner. The only potential dispute regarding distribution of power may arise where the State attempts to require DoD to remediate its property under a State hazardous waste law, and DoD has not ranked the MRS as a high priority or allocated funding for environmental restoration of the MRS. Such a situation, however, would be dealt with per established legal principles regarding the relationship of States to the Federal government. The Protocol does not alter this relationship. Additionally, it would not be appropriate for this proposed rule to attempt to assign roles to DoD or any State because such assignment of roles is outside the scope of the statutory mandate. The Protocol does not impose direct compliance costs on State or local governments because DoD funds environmental restoration activities. Nevertheless, DoD consulted with State and local officials throughout development of this Protocol. Finally, development of a Protocol for prioritizing action at MRS was specifically required by statute. The requirements of section 6 of the Executive Order therefore do not apply to this rule.

List of Subjects in 32 CFR Part 179

Government property; Military personnel; Hazardous substances; Environmental protection.

Accordingly, 32 CFR part 179 is proposed to be added to Chapter 1, Subchapter H to read as follows:

PART 179—MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL

Sec.

Authority: 10 U.S.C. 2710 *et seq.*

§ 179.1 Purpose.

The Department of Defense (DoD) is adopting this Munitions Response Site Prioritization Protocol (hereinafter referred to as the ''Protocol'') under the authority of 10 U.S.C. 2710. Provisions of 10 U.S.C. 2710 require that DoD assign to each munitions response site in the inventory required by 10 U.S.C. 2710(a) a relative priority for response activities based on the overall conditions at each location and taking into consideration various factors related to safety and environmental hazards.

§ 179.2 Applicability and scope.

(a) This part applies to the Office of the Secretary of Defense, the Military Departments, the Defense Agencies and the DoD Field Activities, and any other DoD organizational entity or instrumentality established to perform a government function (hereafter referred to collectively as the ''DoD Components'').

(b) This part and the Protocol described herein shall be applied at all locations:

(1) That are, or were, owned by, leased to, or otherwise possessed or used by the DoD, and

(2) That are known to, or suspected of, containing unexploded ordnance

(UXO), discarded military munitions (DMM), or munitions constituents (MC), and

(3) That are included in the inventory established pursuant to 10 U.S.C. 2710(a).

(c) This part and the Protocol described herein shall not be applied at the locations not included in the inventory required under 10 U.S.C. 2710(a). The locations not included in the inventory are:

(1) Locations that are not, or were not, owned by, leased to, or otherwise possessed or used by the DoD,

(2) Locations not known to, or suspected of, containing UXO, DMM, or MC,

(3) Locations outside the United States,

(4) Locations where the presence of military munitions resulted solely from combat operations,

(5) Operating military munitions storage and manufacturing facilities,

(6) Locations that are used for, or were permitted for, the treatment or disposal of military munitions, and

(7) Operational ranges.

§ 179.3 Definitions.

This part includes definitions for many terms that clarify its scope and applicability. Many of the terms relevant to this part are already defined, either in 10 U.S.C. 2710(e) or the Code of Federal Regulations. Where this is the case, the statutory and regulatory definitions are repeated here strictly for ease of reference. Unless used elsewhere in the U.S. Code or the Code of Federal Regulations, these terms are defined only for purposes of this part.

Barrier means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), and combinations of natural and man-made obstacles.

Chemical warfare agents (CWA) means the V- and G-series nerve agents, H-series (*i.e.*, ''mustard'' agents) and L (*i.e.*, lewisite) blister agents, and certain industrial chemicals used by the military as weapons, including hydrogen cyanide (AC), cyanogen chloride (CK), or carbonyl dichloride (called phosgene or CG). CWA does not include riot control agents (*e.g.*, w-chloroacetophenone (CN) and o-chlorobenzylidenemalononitrile (CS) tear gas), chemical herbicides, smoke or incendiary compounds, and industrial chemicals that are not configured as a military munition.

Chemical Warfare Material (CWM) is a general term that is comprised of four subcategories of specific materials:

(1) *CWM, explosively configured* are all munitions that contain a CWA fill and any explosive component. Examples are M55 rockets with CWA, the M23 VX mine, and the M360 105-mm GB artillery cartridge.

(2) *CWM, nonexplosively configured* are all munitions that contain a CWA fill but that do not contain any explosive components. Examples are any chemical munition that does not contain an explosive components and VX or mustard agent spray canisters.

(3) *CWM, bulk container* are all non-munitions-configured containers of CWA (*e.g.*, a ton container).

(4) *Chemical agent identification sets (CAIS)* are military training aids containing small quantities of various CWA and other chemicals. All forms of CAIS are scored the same in this Protocol, except CAIS K941, toxic gas set M–1; and K942, toxic gas set M–2/E11, which are scored higher due to the relatively large quantities of agent they contain.

Defense site means locations that are or were owned by, leased to, or otherwise possessed or used by the Department of Defense. The term does not include any operational range, operating storage or manufacturing facility, or facility that is used for or was permitted for the treatment or disposal of military munitions. (10 U.S.C. 2710(e)(1))

Department of Defense (DoD) Components means the Office of the Secretary of Defense, the Military Departments, the Defense Agencies, the DoD Field Activities, and any other DoD organizational entity or instrumentality established to perform a government function.

Discarded military munitions (DMM) means military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2))

Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, except that the term does include nonnuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.*) have been completed. (10 U.S.C. 2710(e)(3) and 40 CFR 260.10)

Military range means designated land and water areas set aside, managed, and used to research, develop, test, and evaluate military munitions, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas. (40 CFR 266.201)

Munitions constituents means any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710(e)(4))

Munitions response means response actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC).

Munitions response area (MRA) means any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples are former ranges or munitions burial areas. An MRA is comprised of one or more munitions response sites.

Munitions response site (MRS) means a discrete location within an MRA that is known to require a munitions response.

Operational range means a military range that is used for range activities, or a military range that is not currently being used but that is still considered by the Secretary to be a range area, is under the jurisdiction, custody, or control of the Department of Defense, and has not been put to a new use that is

incompatible with range activities. (10 U.S.C. 2710(e)(5))

Range activities means research, development, testing, and evaluation of military munitions, other ordnance, and weapons systems; and the training of military personnel in the use and handling of military munitions, other ordnance, and weapons systems.

Unexploded ordnance (UXO) means military munitions that:

(1) Have been primed, fuzed, armed, or otherwise prepared for action;

(2) Have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and

(3) Remain unexploded either by malfunction, design, or any other cause. (10 U.S.C. 2710(e)(9) and 40 CFR 266.201)

United States means, in a geographic sense, the States, territories, and possessions and associated navigable waters, contiguous zones, and ocean waters of which the natural resources are under the exclusive management authority of the United States. (10 U.S.C. 2710(e)(10))

§ 179.4 Policy.

(a) In assigning a relative priority for response activities, DoD generally considers those MRS posing the greatest hazard as having the highest priority for action. The priority assigned should be based on the overall conditions at each location, taking into consideration various factors relating to safety and environmental hazard potential.

(b) It is DoD policy to ensure that EPA, other Federal agencies (as appropriate or required), State regulatory agencies, Native American or Alaskan Native Tribes, local restoration advisory boards (RABs) or technical review committees (TRCs), and local stakeholders are offered opportunities to participate in the application of the Protocol and making sequencing decisions.

§ 179.5 Responsibilities.

For the MRS in the inventory required under 10 U.S.C. 2710(a), each DoD Component shall:

(a) Apply the Protocol to each MRS:

(1) Under its administrative control.

(2) Within an MRA such that the total acreage of each MRA is evaluated.

(3) When sufficient data are available to populate all the data elements within at least one of the three hazard evaluation modules that comprise the Protocol.

(i) In such cases where data are not sufficient to populate one or two of the hazard evaluation modules (*e.g.*, there is no constituent sampling data for the relative risk site evaluation module), DoD Components will assign an MRS priority based on the hazard evaluation modules evaluated and reapply the Protocol once sufficient data to run the remaining hazard evaluation modules are available.

(ii) When an MRS comprises the total area of its MRA (*i.e.*, the MRA has either not been characterized such that more than one MRS has been delineated, or characterization has determined that further delineation is not necessary), DoD Components shall apply the Protocol to that MRS when sufficient data are available to populate all the data elements within at least one of the three hazard evaluation modules. Upon further delineation and characterization of the MRA into more than one MRS, Components shall reapply the Protocol to all MRS within the MRA.

(b) Ensure that EPA, other Federal agencies (as appropriate or required), State regulatory agencies, Native American or Alaskan Native Tribes, local RABs or TRCs, and local community stakeholders are offered opportunities as early as possible and throughout the process to participate in the application of the Protocol and making sequencing decisions.

(1) To ensure EPA, other Federal agencies, State regulatory agencies, Native American and Alaskan Native Tribes, and local government officials are aware of the opportunity to participate in the initial application of the Protocol, the DoD Component organization responsible for implementing a munitions response at the MRS shall send a certified letter to the heads of these organizations (or their designated point-of-contact), as appropriate, seeking their involvement. A copy of these letters will be placed in the Administrative Record and Information Repository for the MRS.

(2) To ensure the local community is aware of the opportunity to participate in the initial application of the Protocol, the DoD Component organization responsible for implementing a munitions response at the MRS shall publish an announcement in a local community publication requesting information pertinent to prioritization or sequencing decisions.

(c) Establish a quality assurance panel to review all MRS prioritization decisions. This panel will not include any participant involved in applying the Protocol to the MRS. If the panel recommends a change that results in a different priority, the DoD Component shall report, in the inventory data submitted to the Office of the Deputy Under Secretary of Defense (Installations & Environment), the rationale for this change. The DoD Component shall also provide this rationale to the appropriate regulatory agencies and involved stakeholders for comment before finalizing the change.

(d) Following the panel review, submit the results of applying the Protocol along with the other inventory data that 10 U.S.C. 2710(c) requires be made publicly available, to the ODUSD (I&E). ODUSD (I&E) shall publish this information in the *Defense Environmental Restoration Program Annual Report to Congress* for that fiscal year. If sequencing decisions result in action at an MRS with a lower MRS priority ahead of an MRS with a higher MRS priority, the DoD Component shall provide specific justification to ODUSD (I&E).

(e) Document in a Management Action Plan (MAP) or its equivalent all aspects of the munitions responses required at all MRS for which that MAP is applicable. DoD guidance requires that MAPs are developed and maintained at an installation (or Formerly Used Defense Site (FUDS) property) level. For the FUDS program, a State-wide MAP may also be developed.

(f) Sequencing decisions at installations and FUDS shall be developed with input from stakeholders, such as the regulatory and community members of an installation's RAB or TRC, and be documented in the MAP. Final sequencing may be impacted by DoD Component program management considerations. If the sequencing of any MRS is changed from the sequencing reflected in the current MAP, the DoD Component shall provide information to the stakeholders documenting the reasons for the sequencing change and shall request their review and comment on that decision.

(g) Ensure that information provided by stakeholders that may influence the MRS priority assigned or sequencing decision concerning an MRS is included in the Administrative Record and the Information Repository.

(h) Review each MRS priority, at least annually, and update the priority as necessary, to reflect new information. Reapplication of the Protocol is required under any of the following circumstances:

(1) Upon completion of a response action that could change site conditions evaluated by the hazard evaluation modules at the MRS.

(2) To update or validate a previous module evaluation at an MRS when new information is available.

(3) To update or validate an MRS priority that was previously assigned based on evaluation of only one or two of the three hazard evaluation modules.

(4) Upon further delineation and characterization of an MRA into MRS.

(5) To categorize any MRS previously classified as ''evaluation pending.''

§ 179.6 Procedures.

The Protocol is comprised of the following three hazard evaluation modules.

(a) *Explosive Hazard Evaluation (EHE) Module.* (1) The EHE module provides a single, consistent, DoD-wide approach for the evaluation of explosive hazards. This module is used when there is a known or suspected presence of an explosive hazard. The EHE module is composed of three factors, each of which is comprised of two to four data elements that are intended to assess the specific conditions at an MRS. These factors are:

(i) *Explosive hazard,* which has the data elements *Munitions Type and Source of Hazard* (see Appendix A to this part, Tables 1 and 2) and comprises 40 percent of the EHE module score.

(ii) *Accessibility,* which has the data elements *Location of Munitions, Ease of Access, and Status of Property* (see Appendix A to this part, Tables 3, 4, and 5) and comprises 40 percent of the EHE module score.

(iii) *Receptors,* which has the data elements *Population Density, Population Near Hazard, Types of Activities/Structures,* and *Ecological and/or Cultural Resources* (see Appendix A to this part, Tables 6, 7, 8, and 9) and comprises 20 percent of the EHE module score.

(2) Based on MRS-specific information, each data element is assigned a numeric value, and the sum of these values is the EHE module score. The EHE module score results in an MRS being placed into one of the following ratings (See Appendix A to this part, Table 10):

(i) *Hazard Evaluation A (Highest)* is assigned to MRS with an EHE module score of more than 91.

(ii) *Hazard Evaluation B* is assigned to MRS with an EHE module score between 82 and 91.

(iii) *Hazard Evaluation C* is assigned to MRS with an EHE module score between 71 and 81.

(iv) *Hazard Evaluation D* is assigned to MRS with an EHE module score of between 60 and 70.

(v) *Hazard Evaluation E* is assigned to MRS with an EHE module score of between 48 and 59.

(vi) *Hazard Evaluation F* is assigned to MRS with an EHE module score between 38 and 47.

(vii) *Hazard Evaluation G (Lowest)* is assigned to MRS with an EHE module score less than 38.

(3) There are also three other possible outcomes for the EHE module:

(i) *Evaluation pending.* This category is used when there are known or suspected UXO or DMM, but sufficient information is not available to populate the nine data elements of the EHE module.

(ii) *No longer required.* This category is reserved for MRS that no longer require an assigned priority because DoD has conducted a response, all objectives set out in the decision document for the MRS have been achieved, and no further action, except for long-term management and recurring reviews, is required.

(iii) *No Known or Suspected Explosive Hazard.* This rating is reserved for MRS that do not require evaluation under the EHE module.

(4) The EHE module rating shall be considered with the CHE and RRSE module ratings to determine the MRS priority.

(5) MRS lacking information for determining an EHE module rating shall be programmed for additional study and evaluated as soon as sufficient data are available. Until an EHE module rating is assessed, MRS shall be rated as ''evaluation pending'' for the EHE module.

(b) *Chemical Warfare Materiel Hazard Evaluation (CHE) Module.* (1) The CHE module provides an evaluation of the chemical hazards associated with the physiological effects of CWM. The CHE module is used only when CWM are known or suspected of being present at an MRS. Like the EHE module, the CHE module is comprised of three factors, each of which is comprised of two to four data elements that are intended to assess the conditions at an MRS.

(i) The *CWM Hazard* factor is comprised of two data elements, *CWM Configuration and Sources of CWM,* and constitutes 40 percent of the CHE score. (See Appendix A to this part, Tables 11 and 12.)

(ii) The *Accessibility* factor focuses on the potential for receptors to encounter the CWM known or suspected to be present on an MRS. This factor consists of three data elements, *Location of CWM, Ease of Access, and Status of Property,* and constitutes 40 percent of the CHE score. (See Appendix A to this part, Tables 13, 14, and 15.)

(iii) The *Receptor* factor focuses on the human and ecological populations that may be impacted by the presence of CWM. It has the data elements *Population Density, Population Near Hazard, Types of Activities/Structures,* and *Ecological and/or Cultural Resources* and constitutes 20 percent of the CHE score. (See Appendix A to this part, Tables 16, 17, 18, and 19.)

(2) Similar to the EHE module, each data element is assigned a numeric value, and the sum of these values (*i.e.*, the CHE module score) is used to determine the CHE rating (See Appendix A to this part, Table 20):

(i) *Hazard Evaluation A (Highest)* is assigned to MRS with a CHE score greater than 91.

(ii) *Hazard Evaluation B* is assigned to MRS with a CHE score between 82 and 91.

(iii) *Hazard Evaluation C* is assigned to MRS with a CHE score between 71 and 81.

(iv) *Hazard Evaluation D* is assigned to MRS with a CHE score between 60 and 70.

(v) *Hazard Evaluation E* is assigned to MRS with a CHE score between 48 and 59.

(vi) *Hazard Evaluation F* is assigned to MRS with a CHE score between 38 and 47.

(vii) *Hazard Evaluation G (Lowest)* is assigned to MRS with a CHE score less than 38.

(3) There are also three other potential outcomes for the CHE module:

(i) *Evaluation pending.* This category is used when there are known or suspected CWM, but sufficient information is not available to populate the nine data elements of the CHE module.

(ii) *No longer required.* This category is reserved for MRS that no longer require an assigned priority because DoD has conducted a response, all objectives set out in the decision document for the MRS have been achieved, and no further action, except for long-term management and recurring reviews, is required.

(iii) *No Known or Suspected CWM Hazard.* This category is reserved for MRS that do not require evaluation under the CHE module.

(4) The CHE rating shall be considered with the EHE module and RRSE module ratings to determine the MRS priority.

(5) MRS lacking information for assessing a CHE module rating shall be programmed for additional study and evaluated as soon as sufficient data are available. Until a CHE module rating is assigned, MRS shall be rated as ''evaluation pending'' for the CHE module.

(c) *Relative-Risk Site Evaluation (RRSE).* (1) The RRSE, described in the *Relative-Risk Site Evaluation Primer* (Summer 1997, Revised Edition) provides a single, consistent DoD-wide

approach for evaluating the relative risk to human health and the environment posed by chemical contamination present at an MRS (the *RRSE Primer* can be found in the publications section at *http://www.dtic.mil/envirodod*). The RRSE module shall be used for evaluating the potential hazards posed by munitions constituents (MC) and other chemical contaminants.

(2) Evaluation of three factors—contaminants present, environmental migration pathways, and receptors—applied to four media—soil, surface water, groundwater, and sediments—results in the placement of MRS into RRSE module ratings of ''high,'' ''medium,'' or ''low.'' (See Table 21 of Appendix A to this part.)

(3) The RRSE module rating shall be considered with the EHE and CHE module ratings to determine the MRS priority.

(4) There are also two other potential outcomes for the RRSE module:

(i) *Evaluation pending.* This category is used when there are known or suspected MC or chemical contaminants, but sufficient information is not available to determine the RRSE module rating.

(ii) *No longer required.* This category is reserved for MRS that no longer require an assigned MRS priority because DoD has conducted a response, all objectives set out in the decision document for the MRS have been achieved, and no further action, except for long-term management and recurring reviews, is required.

(iii) MRS lacking information sufficient for assessing an RRSE module rating shall be programmed for additional study and evaluated as soon as sufficient data are available. Until an RRSE module rating is assigned, MRS shall be classified as ''evaluation pending'' for the RRSE module.

(d) *Determining the MRS Priority.* (1) An MRS priority is determined based on the ratings from the EHE, CHE, and RRSE modules (see Appendix A to this part, Table 22). Until all three hazard evaluation modules have been evaluated, the MRS priority shall be based on the results of the modules completed.

(2) Each MRS is assigned to one of eight MRS priorities based on the ratings of the three hazard evaluation modules, where Priority 1 indicates the highest potential hazard and Priority 8 the lowest potential hazard. Under the Protocol, only MRS with CWM can be assigned to Priority 1 and no MRS with CWM can be assigned to Priority 8.

(3) Where there is insufficient information to assess any of the three hazard evaluation modules, MRS shall receive an ''evaluation pending'' rating for that module. DoD shall develop program metrics focused on reducing the number of MRS with a status of ''evaluating pending'' for any of the three modules.

(4) A ''prioritization not required'' rating is used to indicate that a MRS no longer requires prioritization. This designation is used only when all three hazard evaluation modules are rated as ''no longer required'' or ''no known or suspected explosive hazard'' or ''no known or suspected CWM hazard.''

§ 179.7 Sequencing.

(a) *Sequencing considerations.* The sequencing of MRS for action shall be based primarily on the MRS priority determined through applying the Protocol. Generally, MRS that present a greater relative hazard to human health, safety, or the environment will be addressed before MRS that present a lesser relative hazard. Other factors, however, may warrant consideration when determining the sequencing for specific MRS. In evaluating other factors in its sequencing decisions, DoD will consider a broad range of issues. These ''risk-plus'' or ''other'' factors do not influence or change the MRS priority but may influence the sequencing for action. Examples of factors that DoD may consider are:

(1) Concerns expressed by stakeholders

(2) Cultural and social factors

(3) Economic factors, including economic considerations pertaining to environmental justice issues, economies of scale, evaluation of total lifecycle costs, and estimated valuations of long-term liabilities

(4) The findings of health, safety, or ecological risk assessments or evaluations based on MRS-specific data

(5) The reasonably anticipated future land use, especially when planning response actions, conducting evaluations of response alternatives, or establishing specific response action objectives

(6) Community reuse requirements at BRAC installations

(7) Tribal trust lands, which are lands held in trust by the United States for the benefit of any Indian Tribe or individual. The United States holds the legal title to the land and the Tribe holds the beneficial interest.

(8) Implementation and execution considerations (*e.g.*, funding availability; the availability of the necessary equipment and people to implement a particular action; examination of alternatives to responses that entail significant capital investments, a lengthy period of operation, or costly maintenance; considering alternatives to removal or treatment of contamination when existing technology cannot achieve established standards (*e.g.*, maximum contaminant levels)

(9) For responses to address UXO or DMM, the availability of technology to detect, discriminate, recover, and destroy the UXO or DMM

(10) Implementing standing commitments including those in formal agreements with regulatory agencies, requirements for continuation of remedial action operations until response objectives are met, other long-term management activities, and program administration

(11) Established program goals and initiatives

(12) Short-term and long-term ecological effects and environmental impacts in general, including injuries to natural resources.

(b) *Procedures and documentation for sequencing decisions.* (1) Each installation or FUDS is required to develop and maintain a MAP or its equivalent. Sequencing decisions, which will be documented in the MAP, at installations and FUDS shall be developed with input from stakeholders, such as the regulatory and community members of an installation's RAB or TRC. If the sequencing of an MRS is changed from the sequencing reflected in the current MAP, information documenting the reasons for the sequencing change will be provided for inclusion in the MAP. Notice of the change in the sequencing shall be provided to those stakeholders that provided input to the sequencing process.

(2) In addition to the information on prioritization, DoD Components shall ensure that information provided by stakeholders that may influence the sequencing of a MRS is included in the Administrative Record and the Information Repository.

(3) DoD Components shall report the results of sequencing to ODUSD (I&E) (or successor organizations). ODUSD (I&E) shall compile the sequencing results reported by each DoD Component and publish the sequencing in the *Defense Environmental Restoration Program Annual Report to Congress.* If sequencing decisions result in action at an MRS with a lower MRS priority ahead of MRS with a higher priority, specific justification shall be provided to ODUSD (I&E).

Appendix A to 32 CFR Part 179—Tables of the Munitions Response Site Prioritization Protocol

The tables in this Appendix are solely for use in implementing 32 CFR part 179.

TABLE 1.—CLASSIFICATIONS WITHIN THE EHE MODULE MUNITIONS TYPE DATA ELEMENT

Classification and description	Score
Sensitive:	
All UXO that are considered likely to function upon any interaction with exposed persons (*i.e.*, submunitions, cluster munitions, 40mm high-explosive grenades, white phosphorus (WP) munitions (including practice munitions with sensitive fuzes, but excluding all other practice munitions), and high explosive anti-tank (HEAT) munitions	30
All hand grenades containing an explosive filler	30
High explosive (used or damaged):	
All UXO containing a high-explosive filler (*e.g.*, RDX, Composition B) that are not considered ''sensitive''	25
All DMM containing a high-explosive filler that have been damaged by burning or detonation	25
All DMM containing a high-explosive filler that have deteriorated to the point of instability	25
Pyrotechnic:	
All UXO containing pyrotechnic fillers other than white phosphorous (*e.g.*, flares, signals, simulators, smoke grenades)	20
All DMM containing pyrotechnic fillers other than white phosphorous (*e.g.*, flares, signals, simulators, smoke grenades) that have been damaged by burning or detonation or that have deteriorated to the point of instability	20
High explosive (unused):	
All DMM containing a high-explosive filler that have not been damaged by burning or detonation	15
All DMM containing a high explosive filler that are not deteriorated to the point of instability	15
Propellant:	
All UXO containing only a single-, double-, or triple-based propellant, or composite propellants (*e.g.*, a rocket motor)	15
All DMM containing only a single-, double-, or triple-based propellant, or composite propellants (*e.g.*, a rocket motor)	15
Bulk HE, pyrotechnics, or propellant:	
Bulk high explosives, including: demolition charges (*e.g.*, C4 blocks), high explosives not contained in a munition, and concentrated mixtures of high explosives or other munitions constituents mixed with environmental media or debris in concentrations that result in the mixture being explosive (*e.g.*, ''explosive soil'')	10
All pyrotechnic material that is not contained in a munition (*i.e.*, ''bulk pyrotechnics'')	10
All single-, double-, or triple-based propellant, or composite propellants that is not contained in a munition (*i.e.*, ''bulk propellant'')	10
Practice:	
All UXO that are a practice munition not associated with a sensitive fuze	5
All DMM that are a practice munition not associated with a sensitive fuze that have been damaged by burning or detonation	5
All DMM that are a practice munition not associated with a sensitive fuze that have deteriorated to the point of instability	5
Riot control: All UXO or DMM containing only a riot control agent (*e.g.*, tear gas)	3
Small arms: All UXO or DMM that are classified as small arms ammunition. Evidence that no other munitions type (*e.g.*, grenades, sub-caliber training rockets, demolition charges) was used or is 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 there are no UXO or DMM present or there is historical evidence indicating that no UXO or DMM are present	0

Notes:

Former (as in ''former range'') means the MRS is a location that was: (1) closed by a formal decision made by the DoD Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

Practice munitions means munitions that contain an inert filler (*e.g.*, wax, sand, concrete), a spotting charge (*i.e.*, a pyrotechnic charge), and a fuze.

The term *small arms ammunition* means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

TABLE 2.—CLASSIFICATIONS WITHIN THE EHE MODULE SOURCE OF HAZARD DATA ELEMENT

Classification and description	Score
Former range: The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include: impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10
Former munitions treatment (*i.e.,* OB/OD) unit: The MRS is a location where UXO or DMM (*e.g.*, munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal	8
Former practice munitions range: The MRS is a former range on which only practice munitions without sensitive fuzes were used	6
Former maneuver area: The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category	5
Former burial pit or other disposal area: The MRS is a location where DMM were buried or disposed of (*e.g.*, disposed of into a water body) without prior thermal treatment	5
Former industrial operating facilities: The MRS is a location that is a former munitions manufacturing or demilitarization operating facility	4
Former firing points: The MRS is a firing point, when the firing point is delineated as an MRS separate from the rest of a former range	4
Former missile or air defense artillery emplacements: The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a range	2
Former storage or transfer points: The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (*e.g.*, rail to truck, truck to weapon system)	2

TABLE 2.—CLASSIFICATIONS WITHIN THE EHE MODULE SOURCE OF HAZARD DATA ELEMENT—Continued

Classification and description	Score
Former small arms range: The MRS is a former military range where only small arms were used. There must be evidence that no other type of munitions (*e.g.*, grenades) were used or are present at the location to place an MRS into this category	1
Evidence of no munitions: Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present	0

Notes:

Former (as in ''former range'') means the MRS is a location that was: (1) closed by a formal decision made by the DoD Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

Practice munitions means munitions that contain an inert filler (*e.g.*, wax, sand, concrete), a spotting charge (*i.e.*, a pyrotechnic charge), and a fuze.

The term *small arms ammunition* means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

TABLE 3.—CLASSIFICATIONS WITHIN THE EHE INFORMATION ON THE LOCATION OF MUNITIONS DATA ELEMENT

Classification and description	Score
Confirmed surface:	
Physical evidence indicates there are UXO or DMM on the surface of the MRS	25
Historical evidence (*e.g.*, a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS	25
Confirmed subsurface, active:	
Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose UXO or DMM	20
Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on- going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose UXO or DMM	20
Confirmed subsurface, stable:	
Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause UXO or DMM to be exposed	15
Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause UXO or DMM to be exposed	15
Suspected (physical evidence): There is physical evidence other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS	10
Suspected (historical evidence): There is historical evidence indicating that UXO or DMM may be present at the MRS	5
Subsurface, physical constraint: There is physical or historical evidence indicating the UXO or DMM may be present in the subsurface, but there is a physical constraint (*e.g.*, pavement, water depth over 120 feet) preventing direct access to the UXO or DMM	2
Small arms (regardless of location): The presence of small arms ammunitions is confirmed or suspected, regardless of other factors such as geological stability There must be evidence that no other types of munitions (*e.g.*, grenades) were used or are present at the MRS to include it in this category	1
Evidence of no munitions: Following investigation of the MRS, there is physical evidence there are no UXO or DMM present or there is historical evidence indicating that no UXO or DMM are present	0

Notes:

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

In the subsurface means the munition (*i.e.*, a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.

On the surface means the munition (*i.e.*, a DMM or UXO) is: (1) entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).

The term *small arms ammunition* means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

TABLE 4.—CLASSIFICATIONS WITHIN THE EHE EASE OF ACCESS DATA ELEMENT

Classification and description	Score
No barrier: There is no barrier preventing access to all parts of the MRS (*i.e.*, all parts of the MRS are accessible)	10
Barrier to MRS access is incomplete: There is a barrier preventing access to parts of the MRS but not the entire MRS	8
Barrier to MRS access is complete but not monitored: There is a barrier preventing access to all parts of the MRS, but there is no surveillance (*e.g.*, by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS	5

TABLE 4.—CLASSIFICATIONS WITHIN THE EHE EASE OF ACCESS DATA ELEMENT—Continued

Classification and description	Score
Barrier to MRS access is complete and monitored: There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (*e.g.*, by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS	0

Note: *Barrier* means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), or a combination of natural and man-made obstacles.

TABLE 5.—CLASSIFICATIONS WITHIN THE EHE STATUS OF PROPERTY DATA ELEMENT

Classification and description	Score
Non-DoD control: The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by American Indian or Alaskan Native Tribes or State or local governments; and lands or water bodies managed by other Federal agencies	5
Scheduled for transfer from DoD control: The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD, and DoD plans to transfer that land or water body to the control of another entity (*e.g.*, a State, American Indian, Alaskan Native, or local government; a private party; another Federal agency) within 3 years from the date the Protocol is applied	3
DoD control: The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the DoD. With respect to property that is leased or otherwise possessed, DoD must control access to the MRS 24-hours per day, every day of the calendar year	0

TABLE 6.—CLASSIFICATIONS WITHIN THE EHE POPULATION DENSITY DATA ELEMENT

Classification and definition	Score
> 500 persons per square mile There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	5
100–500 persons per square mile: There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	3
< 100 persons per square mile: There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	1

Note: If an MRS is in more than one county, the DoD Component will use the largest population value among the counties. If the MRS is within or borders a city or town, the population density for the city or town instead of the county population density is used.

TABLE 7.—CLASSIFICATIONS WITHIN THE EHE POPULATION NEAR HAZARD DATA ELEMENT

Classification and description	Score
26 or more structures: There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	5
16 to 25: There are 16–25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	4
11 to 15: There are 11–15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	3
6 to 10: There are 6–10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	2
1 to 5: There are 1–5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	1
0: There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	0

Note: The term *inhabited structures* means permanent or temporary structures, other than DoD munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

TABLE 8.—CLASSIFICATIONS WITHIN THE EHE TYPES OF ACTIVITIES/STRUCTURES DATA ELEMENT

Classification and description	Score
Residential, educational, commercial, or subsistence: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or, within the MRS's boundary that are associated with any of the following purposes: residential, educational, child care, critical assets (*e.g.*, hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, play grounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering	5
Parks and recreational areas: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with parks, nature preserves or other recreational uses	4
Agricultural, forestry: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with agriculture or forestry	3
Industrial or warehousing: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with industrial activities or warehousing	2
No known or recurring activities: There are no known or recurring activities occurring up to 2 miles from the MRS's boundary or within the MRS's boundary	1

Note: The term *inhabited structures* means permanent or temporary structures, other than DoD munitions-related structures, are routinely occupied by one or more persons for any portion of a day.

TABLE 9.—CLASSIFICATIONS WITHIN THE EHE ECOLOGICAL AND/OR CULTURAL RESOURCES DATA ELEMENT

Classification and description	Score
Ecological and cultural resources present: There are both ecological and cultural resources present on the MRS	5
Ecological resources present: There are ecological resources present on the MRS	3
Cultural resources present: There are cultural resources present on the MRS	3
No ecological or cultural resources present: There are no ecological resources or cultural resources present on the MRS	0

Notes: *Ecological resources* means that: (1) A threatened or endangered species (designated under the Endangered Species Act (ESA)) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.

Cultural resources means there are recognized cultural, traditional, spiritual, religious, or historical features (*e.g.*, structures, artifacts, symbolism) on the MRS. For example, American Indians or Alaska Natives deem the MRS to be of religious significance or there are areas that are used by American Indians or Alaska Natives for subsistence activities (*e.g.*, hunting, fishing). Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act.

TABLE 10.—DETERMINING THE EHE RATING FROM THE EHE MODULE SCORE

Overall EHE module score	EHE rating
The MRS has an overall EHE module score from 92 to 100	EHE Rating A
The MRS has an overall EHE module score from 82 to 91	EHE Rating B
The MRS has an overall EHE module score from 71 to 81	EHE Rating C
The MRS has an overall EHE module score from 60 to 70	EHE Rating D
The MRS has an overall EHE module score from 48 to 59	EHE Rating E
The MRS has an overall EHE module score from 38 to 47	EHE Rating F
The MRS has an overall EHE module score less than 38	EHE Rating G

TABLE 11.—CLASSIFICATIONS WITHIN THE CHE CWM CONFIGURATION DATA ELEMENT

Classification and description	Score
CWM, explosive configuration, either UXO or damaged DMM:	
The CWM known or suspected of being present at the MRS is:	
Explosively configured CWM that are UXO (*i.e.*, CWM/UXO)	30
Explosively configured CWM that are DMM that have been damaged (CWM/DMM)	30
CWM mixed with UXO: The CWM known or suspected of being present at the MRS are CWM/DMM that are co-mingled with conventional munitions that are UXO	25
CWM, explosive configuration that are DMM (unused): The CWM 20 known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged	20
CWM, not-explosively configured or CWM, bulk container:	
The CWM known or suspected of being present at the MRS is:	
Non-explosively configured CWM/DMM	15
Bulk CWM/DMM (*e.g.*, ton container)	15
CAIS K941 and CAIS K942: The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M–1 or CAIS K942-toxic gas set M–2/E11	12
CAIS (chemical agent identification sets): The CWM known or suspected of being present at the MRS are only CAIS/DMM. The CAIS present cannot include CAIS K941, toxic gas set M–1; and K942, toxic gas set M–2/E11 for the MRS to be assigned this rating	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

Notes:

The notation *CWM/DMM* means CWM that are DMM.

The term *CWM/UXO* means CWM that are UXO.

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

TABLE 12.—CLASSIFICATIONS WITHIN THE CHE SOURCES OF CWM DATA ELEMENT

Classification and description	Score
Live-fire involving CWM:	
The MRS is a range that supported live-fire of explosively configured CWM and the CWM/UXO are known or suspected of being present on the surface or in the subsurface	10
The MRS is a range that supported live-fire with conventional munitions, and CWM/DMM are on the surface or in the subsurface co-mingled with conventional munitions that are UXO	10
Damaged CWM/DMM or CAIS/DMM, surface or subsurface: There are damaged CWM/DMM on the surface or in the subsurface at the MRS	10
Undamaged CWM/DMM or CAIS/DMM, surface: There are undamaged CWM/DMM on the surface at the MRS	10
Undamaged CWM/DMM, or CAIS/DMM, subsurface: There are undamaged CWM/DMM in the subsurface at the MRS	5
Production facilities of CWM or CAIS: The MRS is a facility that engaged in production of CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface	3

TABLE 12.—CLASSIFICATIONS WITHIN THE CHE SOURCES OF CWM DATA ELEMENT—Continued

Classification and description	Score
Research, Development, Testing, and Evaluation (RDT&E) facility using CWM or CAIS: The MRS is at a facility that was involved in non-live fire RDT&E activities (including static testing) involving CWM, and there are CWM/DMM suspected of being present on the surface or in the subsurface	3
Training facility using CWM or CAIS: The MRS is a location that was involved 2 in training activities involving CWM and/or CAIS (*e.g.*, training in recognition of CWA, decontamination training) and CWM/DMM are suspected of being present on the surface or in the subsurface	2
Storage or transfer points of CWM: The MRS is a former storage facility or transfer point (*e.g.*, inter-modal transfer) for CWM	1
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

Notes:

The notation *CWM/DMM* means CWM that are DMM.

The term *CWM/UXO* means CWM that are UXO.

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

In the subsurface means the CWM (*i.e.*, a DMM or UXO) is (1) Entirely beneath the ground surface, or (2) fully submerged in a water body.

On the surface means the CWM (*i.e.*, a DMM or UXO) is: (1) Entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).

TABLE 13.—CLASSIFICATIONS WITHIN THE CHE INFORMATION ON THE LOCATION OF CWM DATA ELEMENT

Classification and description	Score
Confirmed surface:	
Physical evidence indicates there are CWM on the surface of the MRS	25
Historical evidence (*e.g.*, a confirmed incident report or accident report) indicates there are CWM on the surface of the MRS	25
Confirmed subsurface, active:	
Physical evidence indicates the presence of CWM in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose CWM	20
Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause CWM to be exposed in the future by naturally occurring phenomena (*e.g.*, drought, flooding, erosion, frost, heat heave, tidal action), or there are on-going intrusive activities (*e.g.*, plowing, construction, dredging) at the MRS that are likely to expose CWM	20
Confirmed subsurface, stable:	
Physical evidence indicates the presence of CWM in the subsurface of the MRS and the stable geological conditions at the MRS are not likely to cause CWM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause CWM to be exposed	15
Historical evidence indicates that CWM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause CWM to be exposed in the future by naturally occurring phenomena, or there are no intrusive activities occurring at the MRS that are likely to either occur, or if the activities do occur, are likely to cause CWM to be exposed	15
Suspected (physical evidence): There is physical evidence other than the documented presence of CWM, indicating that CWM may be present at the MRS	10
Suspected (historical evidence): There is historical evidence indicating that CWM may be present at the MRS	5
Subsurface, physical constraint: There is physical or historical evidence indicating the CWM may be present in the subsurface, but there is a physical constraint (*e.g.*, pavement, water depth over 120 feet) preventing direct access to the CWM	2
Evidence of no CWM: Following investigation of the MRS, there is physical evidence there is no CWM present or there is historical evidence indicating that no CWM are present	0

Notes:

Historical evidence means that the investigation: (1) Found written documents or records, or (2) documented interviews of persons with knowledge of site conditions, or (3) found and verified other forms of information.

Physical evidence means: (1) Recorded observations from on-site investigations, such as finding intact UXO or DMM, or components, fragments, or other pieces of military munitions, or (2) the results of field or laboratory sampling and analysis procedures, or (3) the results of geophysical investigations.

In the subsurface means the CWM (*i.e.*, a DMM or UXO) is (1) entirely beneath the ground surface, or (2) fully submerged in a water body.

On the surface means the CWM (*i.e.*, a DMM or UXO) is (1) entirely or partially exposed above the ground surface, or (2) entirely or partially exposed above the surface of a water body (*e.g.*, as a result of tidal activity).

The term *small arms ammunition* means solid projectile ammunition that is .50 caliber or smaller and shotgun shells.

TABLE 14.—CLASSIFICATIONS WITHIN THE CHE EASE OF ACCESS DATA ELEMENT

Classification and description	Score
No barrier: There is no barrier preventing access to all parts of the MRS (*i.e.*, all parts of the MRS are accessible)	10
Barrier to MRS access is incomplete: There is a barrier preventing access to parts of the MRS but not the entire MRS	8
Barrier to MRS access is complete but not monitored: There is a barrier preventing access to all parts of the MRS, but there is no surveillance (*e.g.*, by a guard) ensure that the barrier is effectively preventing access to all parts of the MRS	5

TABLE 14.—CLASSIFICATIONS WITHIN THE CHE EASE OF ACCESS DATA ELEMENT—Continued

Classification and description	Score
Barrier to MRS access is complete and monitored: There is a barrier preventing access to all parts of the MRS, and there is active continual surveillance (*e.g.*, by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS	0

Notes: *Barrier* means a natural obstacle or obstacles (*e.g.*, difficult terrain, dense vegetation, deep or fast moving water), a man-made obstacle or obstacles (*e.g.*, fencing), or a combination of natural and man-made obstacles.

TABLE 15.—CLASSIFICATIONS WITHIN THE CHE STATUS OF PROPERTY DATA ELEMENT

Classification and description	Score
Non-DoD control: The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by the DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by American Indian or Alaskan Native Tribes, or State or local governments; and lands or water bodies managed by other Federal agencies	5
Scheduled for transfer from DoD control: The MRS is on land or is a water body that is owned, leased, or otherwise possessed by control DoD, and DoD plans to transfer that land or water body to control of another entity (*e.g.*, a State, American Indian, Alaskan Native, or local government; a private party; another Federal agency) within 3 years from the date the Protocol is applied	3
DoD control: The MRS is on land or is a water body that is owned, leased, or otherwise possessed by the DoD. With respect to property that is leased or otherwise possessed, DoD controls access to the property 24-hours per day, every day of the calendar year	0

TABLE 16.—CLASSIFICATIONS WITHIN THE CHE POPULATION DENSITY DATA ELEMENT

Classification and definition	Score
> 500 persons per square mile: There are more than 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	5
100–500 persons per square mile: There are 100 to 500 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	3
< 100 persons per square mile: There are fewer than 100 persons per square mile in the county in which the MRS is located, based on U.S. Census Bureau data	1

Note: If an MRS is in more that one county, the DoD Component will use the largest population value among the counties. If the MRS is within or borders a city or town, the population density for the city or town instead of the county population density is used.

TABLE 17.—CLASSIFICATIONS WITHIN THE CHE POPULATION NEAR HAZARD DATA ELEMENT

Classification and description	Score
26 or more structures: There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	5
16 to 25: There are 16–25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	4
11 to 15: There are 11–15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	3
6 to 10: There are 6–10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	2
1 to 5: There are 1–5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	1
0: There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both	0

Note: The term *inhabited structures* means permanent or temporary structures, other than DoD munitions-related structures, that are routinely occupied by one or more persons for any portion of a day.

TABLE 18.—CLASSIFICATIONS WITHIN THE CHE TYPES OF ACTIVITIES/STRUCTURES DATA ELEMENT

Classification and description	Score
Residential, educational, commercial, or subsistence: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with any of the following purposes: residential, educational, child care, critical assets (*e.g.*, hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, play grounds, community gathering areas, religious sites or sites used for subsistence hunting, fishing, and gathering	5
Parks and recreational areas: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary or within the MRS's boundary that are associated with parks, nature preserves or other recreational uses	4
Agricultural, forestry: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary, within the MRS's boundary that are associated with agriculture or forestry	3
Industrial or warehousing: Activities are conducted or inhabited structures are located up to 2 miles from the MRS's boundary, within the MRS's boundary that are associated with industrial activities or warehousing	2
No known or recurring activities: There are no known or recurring activities occurring up to 2 miles from the MRS's boundary or within the MRS's boundary	1

Notes: The term *inhabited structures* means permanent or temporary structures, other than DoD munitions-related structures, are routinely occupied by one or more persons for any portion of a day.

TABLE 19.—CLASSIFICATIONS WITHIN THE CHE ECOLOGICAL AND/OR CULTURAL RESOURCES DATA ELEMENT

Classification and description	Score
Ecological and cultural resources present: There are both ecological and cultural resources present on the MRS	5
Ecological resources present: There are ecological resources present on the MRS	3
Cultural resources present: There are cultural resources present on the MRS	3
No ecological or cultural resources present: There are no ecological resources or cultural resources present on the MRS	10

Notes:

Ecological resources means that: (1) A threatened or endangered species (designated under the Endangered Species Act (ESA)) is present on the MRS; or (2) the MRS is designated under the ESA as critical habitat for a threatened or endangered species; or (3) there are identified sensitive ecosystems such as wetlands or breeding grounds present on the MRS.

Cultural resources means there are recognized cultural, spiritual, traditional, religious, or historical features (*e.g.*, structures, artifacts, symbolism) on the MRS. For example, American Indians or Alaska Natives deem the MRS to be of spiritual significance or there are areas that are used by American Indians or Alaska Natives for subsistence activities (*e.g.*, hunting, fishing). Requirements for determining if a particular feature is a cultural resource are found in the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, Executive Order 13007, and the American Indian Religious Freedom Act.

TABLE 20.—DETERMINING THE CHE RATING FROM THE CHE MODULE SCORE

Overall CHE module score	CHE rating
The MRS has an overall CHE module score from 92 to 100	CHE Rating A
The MRS has an overall CHE module score from 82 to 91	CHE Rating B
The MRS has an overall CHE module score from 71 to 81	CHE Rating C
The MRS has an overall CHE module score from 60 to 70	CHE Rating D
The MRS has an overall CHE module score from 48 to 59	CHE Rating E
The MRS has an overall CHE module score from 38 to 47	CHE Rating F
The MRS has an overall CHE module score less than 38	CHE Rating G

TABLE 21.—RELATIVE RISK SITE EVALUATION MODULE HAZARD RATING

Contaminant hazard factor and receptor factor	Migration pathway		
	Evident	Potential	Confined
Significant:			
Identified	High	High	Medium
Potential	High	High	Medium
Limited	Medium	Medium	Low
Moderate:			
Identified	High	High	Low
Potential	High	Medium	Low
Limited	Medium	Low	Low
Minimal:			
Identified	High	Medium	Low
Potential	Medium	Low	Low
Limited	Low	Low	Low

TABLE 22.—MRS PRIORITY BASED ON HIGHEST HAZARD EVALUATION MODULE RATING

EHE module rating	Priority	CHE module rating	Priority	RRSE module rating	Priority
		Hazard Evaluation A (Highest)	1		
Hazard Evaluation A (Highest)	2	Hazard Evaluation B	2	High (highest)	2
Hazard Evaluation B	3	Hazard Evaluation C	3		
Hazard Evaluation C	4	Hazard Evaluation D	4		
Hazard Evaluation D	5	Hazard Evaluation E	5	Medium	5
Hazard Evaluation E	6	Hazard Evaluation F	6		
Hazard Evaluation F	7	Hazard Evaluation G (Lowest)	7		
Hazard Evaluation G (Lowest)	8			Low	8
No Longer Required		No Longer Required		No Longer Required	
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Known or Suspected Explosive Hazard.		No Known or Suspected CWM Hazard.			N/A

Dated: August 11, 2003.

Patricia L. Toppings,

Alternate OSD Federal Register, Liaison Officer, Department of Defense.

[FR Doc. 03–21013 Filed 8–21–03; 8:45 am]

BILLING CODE 5001–08–C