APPENDIX F

RESPONSE TO COMMENTS TO THE DRAFT TRACK 2 MILITARY MUNITIONS RESPONSE REMEDIAL INVESTIGATION / FEASIBILITY STUDY, PARKER FLATS, MUNITIONS RESPONSE AREA

RESPONSES TO COMMENTS ON
DRAFT TRACK 2
MILITARY MUNITIONS RESPONSE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
PARKER FLATS MUNITIONS RESPONSE AREA
FORMER FORT ORD, CALIFORNIA
FEBRUARY 8, 2005

Responses to Comments from U.S. Environmental Protection Agency (EPA)

GENERAL COMMENTS

Comment 1. **A review of the document indicates that four foot removals were conducted on the Track 2 sites. The narrative discussions of these removals state that the Corps of Engineers Unexploded Ordnance Safety Specialist (COE UXO Safety Specialist) was contacted if any anomaly was not resolved when the four-foot depth was reached to determine if the attempt to resolve the anomaly should continue or be abandoned. No basis for the decision to stop or to proceed is provided, nor is any listing of the number of times this occurred and the resulting number of stop/proceed decisions. However, other portions of the document (Volumes 2 and 3) seem to indicate that all anomalies may have been prosecuted to resolution, regardless of depth. Please review the sections of the three volumes which are in conflict (see the Specific Comments provided for each volume) and determine the actual process used for investigating anomalies and the actions taken if an anomaly was not resolved when the four foot depth was reached during investigation. If all anomalies were not investigated until resolved, please provide the basis used by the COE UXO Safety Specialist for making the decision to proceed or to stop.**

Also, provide a listing of the number of stop/proceed decisions and the locations of any anomalies not resolved due to depth limitations. (Note: This information was requested in the comments provided on the draft preliminary version of this document, dated March 22, 2004.)

Response 1: According to the November 30, 2001 *Grid Sampling & OE Removal Inland Range Contract Closure After Action Report – Former Fort Ord* (*USA, 2001h*) prepared by USA Environmental (USA) to document activities conducted between June 1996 and 2000, USA actively pursued the investigation of all anomalies encountered during 4 foot removal operations. If an anomaly was detected below 4 feet, permission from the USACE OE safety specialist was obtained prior to continuing the investigation. The report also states *"This statement is made to ensure personnel reading this document do not believe any anomalies detected by the Schonstedt 52Cx magnetometer were left uninvestigated in an OE site that a 4'foot removal was performed"*.

Based on this statement, no anomalies detected above or below 4 feet were left in place within the Parker Flats MRA in areas where work was completed after June 1996. All removal activities within the Parker Flats MRA were conducted after June 1996 with the exception of a portion of MRS-13B. It should be noted, however that all anomalies detected within MRS-13B were within the top 4 feet (*USA, 2001*). Based on this information, no anomalies were left uninvestigated by USA Environmental within the Parker Flats MRA.

The three volumes of the report, the RI, RA, and FS were reviewed and the language was revised to indicate that all detected anomalies within the Parker Flats MRA including MRS-13B were investigated.

Comment 2. On December 14, 2004, the Department of Defense (DoD) Explosives Safety Board (DDESB) approved revisions to DoD 6055.9-STD (DoD Ammunition and Explosives Safety Standards) which made many of the definitions provided in the Glossary of the PFMRA RI/FS a part of DoD 6055.9-STD. As a result of that action by the DDESB, the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) published a memorandum on April 21, 2005, which provided these terms as attachments thereto and further directed that the Army use these terms in all correspondence and briefings related to the Army Military Munitions Response Program (MMRP). This memorandum replaced the October 23, 2003, memorandum which promulgated a shorter list of official MMRP terms.

This memorandum and the attached listing of definitions should be compared with the definitions and related references provided in the Glossary section of the PFMRA RI/FS to ensure that any nonstandard definitions present are, where possible, replaced by the definitions in the cited memorandum. (Note: a copy of the memorandum is included as an enclosure in the hard copy transmittal of this comment letter).

Response 2: The April 21, 2005 memorandum was used to update the Military Munitions Response Program related definitions provided in the glossary.

SPECIFIC COMMENTS, VOLUME 1

Comment 1. Acronym List, Page v through vii: The definition for the acronym "CN" currently reads "W-Chloroacetophenone." The correct definition is "w-Chloroacetophenone," which has the lower case Greek letter omega preceding the word "Chloroacetophenone" instead of the capital letter "W" as is found in the Acronym List. Also, the definitions for "MR" and "MP' are out of alphabetical order. In addition, the acronym "TM" stands for

"Technical Manual" (see Army Regulation (AR) 310-50, Authorized Abbreviations, Brevity Codes, and Acronyms), and not "Training Manual" as shown in the Acronym List. Please make these corrections.

Response 1: The acronym list has been revised as suggested.

Comment 2. Glossary, Military Munitions Response Program, Page x: The acronym for the Military Munitions Response Program is MMRP. The acronym shown here is MRRP, which is incorrect. Please correct this error.

Response 2: The acronym was corrected as suggested.

Comment 3. Glossary, Munitions Debris, Page xi: The definition of Munitions Debris provided here is listed as a Fort Ord-peculiar definition. As this term has been given a formal definition, and it is listed in the April 21, 2005 memorandum cited in General Comment 2 above, please replace the Fort Ord-peculiar definition with the official version provided in the cited memorandum.

Response 3: The definition has been replaced as suggested.

Comment 4. Section 1.0 Introduction, Page 1: There is a sentence on lines 3 and 4 of this section which reads, "Since 1917, portions of the former Fort Ord were used by infantry units for maneuvers, target ranges, and other purposes." While this statement is correct, it may give the impression that other branches of the Army did not use the area. Please remove the term "infantry" and replace it with the term "Army" to better describe the prior use of the former Fort Ord.

Response 4: The term infantry was changed to Army as suggested.

Comment 5 Section 1.2.1 Elements of the Track 2 MR RI/FS, Page 2: The last sentence in the last paragraph on page 2 (lines 38-39) states that "Data were integrated into the GIS according to procedures described in the Standard Operating Procedures (SOPs) prepared for the project (Appendix E)." A review of Appendix E reveals that it is entitled "Parsons Technical Reviewer Qualifications." Appendix D contains the referenced data integration SOP. Please correct this.

Response 5: The change was made as suggested.

Comment 6. Section 2.2.4.2 Ecological Setting, Page 20, lines 24-26: Wording in this sentence seems awkward. Is there a typographical error or are words missing? Revise as appropriate.

Response 6: The text was reviewed and modified to include updated information.

Comment 7. Section 2.3 MR RI/FS Background, Page 12: Please note that EPA listed the Fort Ord Site on the National Priorities List in 1990.

Response 7: The text of Section 2.3 was modified to include the referenced information.

Comment 8. Section 3.3 History of Military Munitions Response Program Investigations, Page 20: The first paragraph of Section 3.3 provides a listing of the sites investigated that are considered to be a part of the Parker Flats Munitions Response Area (MRA). Included in this listing is Munitions Response Site (MRS) 27G. However, a review of Plate 2 (Location of Parker Flats MRA) does not find MRS-27G on the plate. Please review the cited listing and the plate and make corrections as necessary.

Response 8: The label for MRS-27G was inadvertently left off the plate. The plate was revised to include the site label.

Comment 9. Section 3.3 History of Military Munitions Response Program Investigations, Pages 20 through 27: There are a number of instances where the types of munitions suspected of having been fired/employed in a specific MRS are not provided. As a result, the potential hazard which existed or which may remain in the referenced area cannot be determined. While it is recognized that this information is not always available, a statement such as "unknown type" would answer the question as to whether this is an omission or the result of limited data. For example, a range where the practice rifle grenade types fired at Fort Ord were the only rifle grenades fired should have no MEC present as a result of this use. This is because all of the practice rifle grenade types fired at Fort Ord were inert (only the associated grenade cartridge contained any energetic material). However, when it is stated that an area was used as "...a target area for rifle grenades..." (line 30, page 22), it must be assumed that explosives loaded rifle grenades were fired there. Please review the descriptions of the ranges and the munitions used in the cited section and ensure that they are identified by type or have the words "unknown type(s)" as a part of their identity.

Response 9: The text was modified to include additional information if available, or to indicate that the type was unknown, as appropriate.

Comment 10. Section 3.3 History of Military Munitions Response Program Investigations, Subsection entitled 1997 Revised Archives Search Report, Page 22: Lines 35 and 36 of this subsection contain a sentence which reads, "On this basis the sampling, an overall site investigation was recommended in the Revised ASR." It is unclear what this sentence means. Please review the sentence and correct its wording as necessary.

Response 10: This sentence was revised as follows "*On the basis of the site walk, an overall site investigation including sampling was recommended in the Revised ASR.*"

Comment 11. Section 3.3 History of Military Munitions Response Program Investigations, Subsection entitled MRS-50, Page 26: The last three lines (lines 20-22) of this subsection contain a sentence which reads, "The AAR indicated that while not probable, it is possible that DMM is buried beyond the detection capabilities of the Schonstedt Model GA-52/Cx, may remain at MRS-50 and the MRS-50 expansion area." It is unclear what this sentence means. Please review the sentence and correct its wording as necessary.

Response 11: The sentence was revised as follows: "*The AAR indicated that while not probable, it is possible that DMM is buried beyond the detection capabilities of the Schonstedt Model GA-52/Cx, and may remain at MRS-50 and the MRS-50 expansion areas*".

Comment 12. Section 3.3 History of Military Munitions Response Program Investigations, Subsection entitled MRS-53, Page 27: The last three lines (lines 1-3) of this subsection contain a sentence which reads, "The AAR indicated that while not probable, it is possible that DMM is buried beyond the detection capabilities of the Schonstedt Model GA-52/Cx, may remain at MRS-53 and the MRS-53 expansion area." It is unclear what this sentence means. Please review the sentence and correct its wording as necessary.

Response 12: The sentence was revised as follows: "*The AAR indicated that while not probable, it is possible that DMM may be buried at depths beyond the detection capabilities of the Schonstedt Model GA-52/Cx, and may remain at MRS-53 and the MRS-53 expansion areas."*

Comment 13. Section 3.3 History of Military Munitions Response Program Investigations, Subsection entitled MRS-55, Page 27: Lines 29-31 of this subsection contain a sentence which reads, "Of the 144 MEC items, only five were penetrating items (40mm and 37mm projectiles the remainder of the MEC items were fuzes, signals (flares and illumination), simulators, hand grenades (smoke, riot and practice), and pyrotechnic mixtures." It appears that this sentence should be two sentences. As currently written, its meaning is unclear. Please review the sentence and correct its wording as necessary.

Response 13: This sentence was divided into 2 sentences as suggested.

Comment 14. Section 3.4.1 Training Practices, Subsection entitled 37mm Training, Page 29: The first paragraph of this subsection on this page states that "The M1916 gun and its recoilless mechanism were fastened to the 37mm Subcaliber mount, M5, and used for training in the handling and firing of the 75mm Howitzer M1A1 (Hogg, 2001)." A check of page 148 of the cited

reference indicates that the word "recoilless" should read "recoil." Please correct this.

Response 14: The text was modified as suggested.

Comment 15. Section 3.4.1 Training Practices, Subsection entitled 60mm and 81mm Mortar Training, Page 30: The sentence on lines 32 and 33 of this subsection reads, "Maximum range of the M301 illumination projectile is approximately 2,200 yards and burns for approximately 60 seconds (tr66.com, 2004)." This sentence should be revised to read, "Maximum range of the M301 illumination projectile is approximately 2,200 yards, and the illumination candle which it ejects burns for approximately 60 seconds (tr66.com, 2004)." This will eliminate any possible confusion as to whether the projectile itself burns, which it doesn't.

Response 15: The text was modified as suggested.

Comment 16. Section 3.4.1 Training Practices, Subsection entitled Range 49 Training, Page 40: The sentence on lines 24 and 25 of this subsection reads, "One-quarter pound charges of TNT and C4 were authorized for fire into each demolition pit." As these charges were placed in the pits and fired during activities at the range, the word "into" should read 'in" instead, as they were not fired into the pits. Also, the sentence in lines 28 and 29 indicates that, "MEC that might be expected as part of this training include 1/4 pound charges of TNT and C4." While this is correct, it should be noted that the TNT was issued as 1/4 pound blocks, but the C4 was not. As a result, to use 1/4 pound blocks of C4, either the M5A1 block demolition charge (2.5 pounds) or the M112 block demolition charge (1.25 pounds) would have to be cut into demolition blocks of the appropriate size. Because of this, these two demolition charges may also potentially be present at Range 49. Please revise the cited subsection to reflect this information.

Response 16: The information provided on C4 in the comment above was added to the text.

Comment 17. Section 3.4.1 Training Practices, Subsection entitled Practice Mortars, Page 51: The sentence on line 19 of this subsection refers to a "20mm" subcaliber projectile for use during mortar training. It appears that this may be incorrect, as the subcaliber device approximating this size is a 22mm subcaliber device. Please review this subsection and correct it as necessary.

Response 17: The text was changed to 22mm subcaliber projectile.

Comment 18. Section 3.5.1 Literature Review, Subsection entitled Subsequent Use of the Area, Page 60: The first sentence of the fourth paragraph of this subsection states that "Because only a small area of the Parker Flats MRA was developed after documented use of a general training area, it is not possible

to determine whether MEC would have been used at the site based on subsequent reuse." As currently structured, this sentence is difficult to understand. Please revise the sentence so that it succinctly states why it is not possible to determine whether MEC was used at the site.

Response 18: The text was revised as follows: "*Because only a small area of the Parker Flats MRA was developed after documented use as a general training area, it is not possible to determine whether MEC was used in the undeveloped portion of the site after development occurred.*"

Comment 19. Section 3.5.2.1 Investigation Design, Page 61: This section reads as follows: "This section summarizes the information contained in removal checklist questions 15 through 17 (Appendix A). The boundary of the Parker Flats MRA is based on the limits of investigation as defined in the removal contractor's scope of work and not on defined areas of military munitions use. The Parker Flats MRA contains several MRSs investigated as part of the former Fort Ord military munitions response program. Initial sampling was conducted at each site within the Parker Flats MRA to determine if further action (removal) was necessary. Based on sampling results, a 4-foot removal action was conducted at each MRS. The objective of the removal action was to remove all munitions and explosives of concern from each site to a depth of four feet. Based on protocol developed jointly by the USACE and USA, removals were conducted beyond the established MRS boundary at some sites. Through a combination of the 4-foot removal conducted at each MRS and expansion at some MRSs, the entire Parker Flats MRA footprint was subjected to a 4-foot removal action (all magnetic anomalies detected were investigated to a depth of 4 feet, or deeper, if directed by the USACE site safety officer). Although all military munitions detected within the Parker Flats MRA have been removed, the investigation of military munitions beyond the Parker Flats MRA may be necessary in some areas."

It is stated in lines 19 through 20 of this section that, "Based on sampling results, a 4-foot removal action was conducted at each MRS. The objective of the removal action was to remove all munitions and explosives of concern from each site to a depth of four feet." However, lines 22 through 24 state that, "...the entire Parker Flats MRA footprint was subjected to a 4-foot removal action (all magnetic anomalies detected were investigated to a depth of 4 feet, or deeper, if directed by the USACE site safety officer)." This would seem to indicate that some unknown number of anomalies may have been abandoned prior to resolution.

The lines that immediately follow (lines 24-25), however, state that, "Although all military munitions detected within the Parker Flats MRA have been removed, ..." This would seem to indicate that every anomaly detected has been prosecuted fully to resolution.

Please revise this section to answer the following questions: 1) Were all anomalies which were investigated to the four foot level and remained unresolved at that level prosecuted to resolution? 2) If the answer to question 1 is no, how many anomalies were abandoned at the four foot depth? 3) What is the location of each of the unresolved anomalies?

Response19: See response to General Comment 1. The text of Section 3.5.2.1 was revised to include the information provided in General Comment 1. Based on the information provided in the November 30, 2001 USA After Action Report (USA, 2001) all anomalies detected within the Parker Flats MRA were investigated and discovered military munitions removed.

Comment 20. Table 1, Track 2 Parker Flats MRA and Other Track 2 Sites, Pages 1-4: The following issues concerning Table 1 were noted:

- **MRS-19 is listed as a "Rifle Grenade Range," but the column labeled "Past Use" describes it as a "Possible rifle range." Please investigate and correct this discrepancy as necessary.**

- **MRS-25 is listed as a "Firing Point-Within Range P-5; 14D." No explanation as to what type of firing point (i.e., small arms, mortar, artillery, etc.) is provided. In addition the "14D" added to the nomenclature is not explained. Please correct this.**

- **MRS-27A, B, and G (cleared portions) are not shown in the column entitled "Track" as being part of the Parker Flats MRA, although they are listed as such in the body of the PFMRA RI/FS. Please correct this discrepancy.**

- **MRS-27I is not described sufficiently in the "Past Use" column. "Suspected mortar, contains TS-9" does not indicate what mortar related operation was conducted/occurred there (i.e., was it a firing point, an observation point, or a target [impact] area?).**

- **For Sites MRS-30, MRS-31, MRS-32C and MRS-33, the Track noted in Table 1 is "Track 2 Plug-in". The BCT decided not have a plug-in process for Track 2. Please revise. (Note - at the May 24-25, 2005 early transfer meeting, there was some discussion of developing a plug-in process for Track 2 sites that had very little MEC. Development of a plug-in process for so-called MEC "de minimis" areas needs to be discussed in greater detail by the BCT. EPA's preference would be to include such areas in a larger grouping of Track 2 areas for the purpose of completing the CERCLA process.**

- **MRS-53 has two identical listings (except for the acreage) in the table. Please explain the reason for this.**

- **The column entitled "MRS Site Number" does not list the sites in numerical order. Please correct this, as it would assist in finding the sites in the table.**

- **Under Site Status, is it possible to note to what depth removal was completed?**

Response 20: Table 1 was reviewed and updated to reflect the most current information. In addition, MRS-19 was removed from the table because a full removal has not been completed. MRS-23 and MRS-33 have also been removed because they are being evaluated as Track 1 sites.

Comment 21. Appendix A, Evaluation of previous Work Checklists, Page 2 of 4: Item 4 and Item 5 -there appears to be a typographical error - "Dmilitary" - should this be "Did military"? Please revise as appropriate.

Response 21: This was a typographical error. The checklist was corrected.

Comment 22: Appendix B Data Tables, Military Munitions Discovered and Removed within the Parker Flats MRA, Table B1, Pages 1-14: Table B1 (and all others in Appendix B) has a column labeled "Burialbit." It is unclear what the term "Burialbit" represents (typo - burial pit?). Please review this term and explain its meaning or correct it throughout Appendix B if it is a typographical error.

Response 22: This was a typographical error. It has been corrected.

Comment 23. Appendix B Data Tables, Military Munitions Discovered and Removed within the Parker Flats MRA, Various Pages: On page 12 of Table B1, the first two munitions items listed read, "Projectile, 40mm, CS, M651 (model unknown)." This is somewhat confusing, as M651 is the model number that identifies the listed munition. In addition, the listings are marked with a red asterisk, which is not explained elsewhere in the table. Similar discrepancies are repeated at a number of other locations in Appendix B (e.g., Table B2, page 1, "Grenade, practice, M67, functioned, [model unknown], red asterisk; Table B2, page 1, "M88 Frag Bomb, w/o fuze, concrete filled [model unknown], red asterisk; Table B2, page 9, "Cartridge, 81mm, Illuminating, M301A2 [model unknown], red asterisk; Table B7, page 2, "Projectile, 81mm mortar, Illuminating, M301A3 [fins], [model unknown], red asterisk.) Please review the entire Appendix B and correct this category of error wherever it appears.

Response 23: The project database continues to be reviewed and updated. The above items were reviewed and corrected as appropriate. The most updated version of the

project database was used to generate the data tables provided in the draft final report.

SPECIFIC COMMENTS, VOLUME 2

Comment 24. Section 2.2.1 MRA Investigations, Page 5: This section of the MEC Risk Assessment states that, "Starting in 1998, one hundred percent of the grids within the Parker Flats MRA were surveyed and 100% of the items detected with the Schonstedt were removed to the depth of detection. The removal action was designed to address MEC at a depth of four feet below the ground surface; however, per the RI approval was given to investigate anomalies at depths greater than four feet." This seems to be somewhat incongruent with Section 3.5.2.1 Investigation Design of Volume 1, which is found on page 61 of that volume. Although this version of the removal process seems to indicate that all anomalies were prosecuted to resolution, it is not specifically stated as such.

As it is essential that the removal actions conducted in the Parker Flats MRA be consistently described with respect to depth and anomalies removed, please review all sections of all volumes of the PFMRA RI/FS and ensure that they all correctly and consistently describe what was done with respect to removal depths and anomalies investigated. Include a statement in each description as to whether all anomalies were resolved.

Response 24: Concur. Additional language will be added to clarify that all anomalies were investigated to resolution. Also, consistency between the three volumes is important for clear characterization of the MRA. Description of the actions will be made consistent and clear. See response to General Comment 1 for details.

Comment 25. Section 4.2.1 Baseline Analysis, Page 35: The second paragraph of this section has a sentence which notes that, "Given this usage, the expected MEC at the Army Maintenance Center would be similar to the MEC found throughout MRS 13B, specifically, hand grenades, practice mortars, signals, and flares." This description would be of greater value in assisting the reader to evaluate the risk potentially present if the hand grenade types were listed (i.e., were they fragmentation, practice, illumination, white phosphorous, or other smoke type grenades?). Please expand the description of the hand grenades used in the area to include the information suggested.

Response 25: Practice, smoke, and illumination hand grenades were discovered in MRS 13B. Sentence will be changed to read "Given this usage, the expected MEC at the Army Maintenance Center would be similar to the MEC found throughout MRS 13B, specifically, hand grenades (practice, smoke, and illumination), practice mortars, signals, and flares."

Comment 26. Tables 4-4 through 4-20 (Baseline and After-Action Risk Analysis Results), Pages 38 through 54: There are a number of instances where the cited tables have the letters "NA" entered in portions of the tables. The explanation of these entries is found at the bottom of the table and states, "NA - Not Applicable because no MEC Hazard Type..." This is followed by the MEC Hazard Type number and a statement listing the area and saying that these types were not found in the area. While this is an acceptable approach to describing the information which is not available as a result of no MEC of the listed Hazard Type being found in the area, it should not be construed to indicate that no potential exists for these types of munitions to be present in the area. While the probability of their presence is very likely low, it is not necessarily zero, and this should be noted at an appropriate place in Volume 2.

Response 26: The following sentences will be added to the text describing Tables 4-4 through 4-20:"The risk scores are based on the MEC Hazard Type found in each area and the related estimation of the residual MEC density. MEC Hazard Types that were not found in an area were not considered in the risk evaluation. While the probability of their presence is very likely low, the potential exists for items of these types to be found at the site."

SPECIFIC COMMENTS, VOLUME 3

Comment 27. Section 2.2.1 Application of Risk Assessment Results, Page 9: In the first bullet on page 9, the following statement is made: "These MEC removal actions were designed to address MEC to depths of four feet below ground surface (bgs). In addition, if anomalies were detected at depths greater than four feet bgs, the anomalies were investigated, and MEC removals were conducted if MEC was found." This seems to conflict with Volume 1, Section 3.5.2.1 Investigation Design, page 61. This section contains the following statement: "Through a combination of the 4-foot removal conducted at each MRS and expansion at some MRSs, the entire Parker Flats MRA footprint was subjected to a 4-foot removal action (all magnetic anomalies detected were investigated to a depth of 4 feet, or deeper, if directed by the USACE site safety officer)." This statement seems to indicate that the investigation of anomalies to a depth greater than four feet was an option exercised at the discretion of the USACE site safety officer. However, the cited section of Volume 3 states that all anomalies were investigated to depth. Please correct this inconsistency and advise the EPA as to which of the cited processes were observed in the Parker Flats MRA.

Response 27: See response to General Comment 1. According to the USA After Action Report (USA, 2001) all anomalies detected within the Parker Flats MRA were investigated and MEC removed if encountered.

Comment 28. Section 7.0, Approval Process, Second Bullet: Please add the following wording after "that" - "presents the Army's preferred alternative for Track 2 and".

Response 28: Change made as suggested.

Comment 29. Attachment to the Draft Track 2 Feasibility Study (FS) - additional MEC Remediation Alternative - Potential Applicable or Relevant and Appropriate Requirements: Mr. Robert Carr, Assistant Regional Counsel, EPA, reviewed the ARARs section of the Draft Track 2 FS and has two comments regarding the Federal ARARs presented in the ARARs Attachment to the FS. The Description and Remarks columns of the Federal RCRA regulation writeup on page 1 of 7 of the Attachment should be modified as follows:

Description: The regulation identify when military munitions on active ranges become subject to the regulatory definition of "solid waste", for purposes of Subtitle C, and if these wastes are hazardous, the management standards which apply.

Remarks: Portions of the Rule may be relevant and appropriate, but those provisions of the Rule which exclude military munitions from RCRA Subtitle C regulations are not appropriate to the remediation of a closed range. The relevant portions relate to the management of MEC which is recovered, including characterization as hazardous waste and requirements for treatment, storage and transportation. The Rule provides for the storage and transportation of recovered military munitions in accordance with DDESB standards.

Mr. Carr also reviewed the descriptions of state ARARs in the Attachment. While it appears that they are comparable to the description previously included in the Interim Action ROD, EPA has not examined them in detail and will leave the detailed review and comment of the State ARARs to DTSC.

Response 29: The text was revised as suggested.

Responses to Comments from California Department of Toxic Substances Control (Roman Racca)

GENERAL COMMENTS

Comment 1. A work plan approach of using a single sweep with GA-52/Cx magnetometers was used throughout the Parker Flats Munitions Response Area. The decision to utilize the instrument was dependent on contractual specifications noted throughout the text. In addition, Data Quality Objectives (DQOs) were not established for the Track 2 sites located within the Parker Flats MRA, prior to contractor field investigations and sampling activities. Contractual specifications were not available to this reader for review and therefore explanations should be included in the document, regarding the specifications.

Response 1: The first scope of work pertaining to development of a work plan for MEC removal actions performed under contract DACA87-96-D-0019 was reviewed. The Scope of Work required the following with regards to planning, conducting sampling and removal actions, and the type of instrument that should be used.

3.4.2 The contractor shall propose a planned, systematic approach to search and clear the project site that will result in optimum search effectiveness. This methodology shall be outlined in the WP.

3.4.3 During the subsurface operations, the contractor shall utilize a magnetometer capable of detecting a 105mm projectile at a depth of four feet. The contractor shall excavate to a depth of four feet to determine the identity of the magnetic anomaly. If deeper excavation is required, the on-site Government Safety Specialist will make that decision if he deems necessary for future land use.

Based on these requirements, the work plan was prepared. The USACE-approved work plan specified that a Schonstedt (Model GA-52/Cx) magnetometer would be used to detect sub-surface metallic anomalies and/or OE (MEC). The above contract specification information was added to Section 2.4 of the document.

Comment 2. Five-foot wide sweep lanes were used within 100-foot by 100-foot operational grids. With five-foot lanes, the GA-52/Cx has an Ordnance Detection and Discrimination Study (ODDS) demonstrated OE detection capability of 66 percent. Three-foot wide sweep lanes have been ODDS demonstrated to greatly improve GA-52/Cx detection capability to 87 percent. Clarify the rationale for 5 foot lane spacing versus 3 foot lane spacing. Please include information which may justify the wider lane spacing.

Response 2: The work was completed according to the USACE approved work plan that specified 5-foot wide search lanes. The work plan stated that during the forward movement the technician will move the magnetometer from one side of the lane

to the other. It also stated that the forward movement and swing of the magnetometer will be performed at a pace that ensures that the entire lane is searched and that the instrument is able to appropriately respond to subsurface anomalies.

The ODDS was completed after the work at Parker Flats was complete; therefore, the information obtained during the ODDS on 3 foot lane spacing magnetometer searches was not available when the work was completed. In addition, it should be noted that during the Field Trial studies conducted as part of the ODDS, the calculated detection rates for the Schonstedt Model GA-52/Cx ranged from 97 to 100 percent for a 1.6 foot. These surveys were conducted using a five-foot search lane.

Comment 3. Quality Control (QC) and Quality Assurance (QA) personnel noted numerous non-UXO anomalies which were representative in size to MEC/UXO and would normally indicate a failure of detection capability. The contractual grid failure criteria for QC and QA inspection personnel were the discovery of UXO and/or five or more metallic anomalies. The QC and QA personnel were obligated to contractually pass the grids even though the actual quality of work was unsatisfactory (exhibits 1 and 2). DTSC acknowledges that current contractual grid failure criteria have since changed to a QC/QA evaluation by representative size and quantity.

Response 3: It is not clear from reviewing the QC and QA reports what size anomalies were detected. It should be noted that the QC was completed according to the approved work plan. In addition, there were only 15 QC grid failures of 5,164 grids surveyed (0.29% failure). Of these, only 5 grid failures were due to excessive anomalies. The remaining failures were related to detection of either munitions debris or UXO. It should also be noted that QA was conducted in accordance with the standard USACE procedures. A review of the QA records for the work at MRS-50 indicates that an MD item was found in only 1 of the 611 grids surveyed. As stated in the QA record, although the grid was not failed based on the presence of a munitions debris item, the contractor was notified so that follow up would occur. Many of the QA records also indicate that no UXO or UXO related items were found during the QA. The Army feels that this shows that the clearance activities were successful at removing the MEC and MD at the Parker Flats MRA.

Comment 4. Numerous surface containment structures (e.g., pavement, roads, and buildings) exist within the Parker Flats MRA that may require further action. Typically these conditions would be designated as Special Concern Area (SCA) and addressed separately. For example, a latrine L55 is located in the Parker Flats MRA, which would normally be identified as a SCA. Please include text to clarify why these conditions are not designated as SCA.

Response 4**:** The term Special Case (Concern) Areas (SCAs) is a recent term. The discussion of the areas that could not be cleared due to pavement or other structures has been expanded and is provided in Section 3.3 of the RI and in Section 2.1.1 of the FS. In addition, a map the areas that were not previously cleared during the Parker Flats MEC removal are shown on Plate 6 of the RI. In addition, Latrine 55 was investigated for possible MEC as well as several others in Parker Flats MRA. The results of the investigation of latrines at the former Fort Ord is detailed in *Final, OE Investigation and Removal After Action Report, Inland Range Contract, Former Fort Ord, California, Field Latrines* dated September 30, 2001. Additional information on the latrine clearance is provided in the Draft Final report.

Comment 5. Review of US Army Corp Quality Assurance memo's reports that solid and possible hazardous waste was improperly buried on sites OE-4B and OE-13B. QA reports for the two sites document and approve the landfill actions. Site OE-4B, reports A trench containing used tires was discovered, inspected, and reburied, within Site OE-4B (exhibit 3). The USACE representative authorized the burial of non-OE trash in backhoe excavations, within OE-13B (exhibit 4). The contractor actions will seriously hamper further geophysical investigations of the sites. Please discuss if a policy was in place during munitions response activities throughout the Parker Flats MRA that allowed burial of solid and possible hazardous waste. In addition, the burials should be fully characterized for hazardous substances and if necessary remediate.

Response 5**:** The investigation and removal work at the Parker Flats MRA was focused on addressing explosive safety. According to USACE Military Munitions Safety Specialist for the Sacramento District, when other debris was found it was removed from the excavation and inspected for explosive hazards and for the presence of hazardous wastes. If MEC or hazardous wastes were identified they were removed and disposed of following the appropriate requirements. After the waste material was inspected, the trash was reburied or removed. This information was included in Section 2.4 of the draft final report. It should be noted that the USACE-approved Final Work Plan dated September 30, 1997 details the removal and disposal of scrap metal. The work plan indicated that a temporary scrap metal and non-hazardous OE collection points would be established. It stated that the material stored in the temporary collection points was loaded onto a vehicle for transfer to a central collection point. This indicates that the material would not have been routinely reburied. MRS-13B and MRS-4B were both evaluated as part of the Basewide Range Assessment program for potential soil contamination from small arms and multiple-use range activities. This evaluation indicated that no further action related to soil contamination was required at these sites. The results of the evaluation are documented in the Comprehensive Basewide Range Assessment Report (*Shaw/MACTEC, 2005*). No comments were received on this document, and it is now Final.

Comment 6. The Schonstedt GA-52/Cx magnetometer was used exclusively throughout the Parker Flats MRA. The GA-52/Cx magnetometer was designed to only detect ferrous metals. Many MEC items such as fuzes and flares are composed largely of aluminum or brass. During the ODDS, the GA-52/Cx was demonstrated to have a detection rate of over 66 percent. The instrument had a higher detection rate for ferrous OE items within two feet of the ground surface and approached detection by chance at a depth of three feet below ground surface. The use of all-metal detectors is desirable in areas which may contain non-ferrous MEC items. Handheld all-metal detectors should undergo ODDS testing to determine their use as alternate to presently used handheld magnetometers. Explain why all-metal detectors were not used for the Parker Flats MRA removal action.

Response 6: The work was performed according to the scope of work and approved work plan, which did not require the use of additional metal detectors. The Final Ordnance Detection and Discrimination Study (ODDS) report states that "the Schonstedt GA-52/Cx was selected for uses at Fort Ord based on tests performed by the USAESCH and the U.S. Army Environmental Center (AEC), and because it had been used extensively at other OE sites throughout the United States." *(ODDS Final Report, January 2002, p 1-5).*

It should be noted that MACTEC's review of the Final ODDS report shows that detection rates (Pd) for the GA-52/Cx were between 97 and 100 percent for a 1.6 foot search radius at Field Trial Sites 1, 4, and 6, where the instrument was evaluated. It should also be noted that numerous flares and fuzes were detected within the Parker Flats MRA.

It is recognized that the performance of all-metals detectors should be evaluated; however, at the time of the Parker Flats survey, the ODDS had not yet been performed and the GA-52/Cx was the standard instrument used by EOD technicians. Please note that "all-metal" detectors typically use the frequency-domain electromagnetic technology for detecting both ferrous and non-ferrous items. Frequency-domain electromagnetic technology was considered, but not selected, for evaluation under the ODDS. Moreover, at that time the MEC removal was conducted at the Parker Flats MRA there were concerns that electromagnetic (EM) all-metal detectors such as the Geonics EM-61, which, unlike magnetometers, are "active" instruments that broadcast a magnetic field, might function (detonate) certain fuzed items. Additionally, the sensor coils of EM devices are large and bulky compared to the GA-52/Cx sensor, so Schonstedt can be more readily maneuvered within the densely vegetated portions of Fort Ord.

Comment 7. Review of several of the Volume I Plates related to Munitions Discovered and Removed, Selected Training Areas indicates that as the density of

vegetation increased, the discovery of MEC lessened. Although, the density of vegetation limits significant exposure to the general public, a potential exists that MEC items may exist in area of dense vegetation. Potential MEC encounters within dense vegetations area may increase as vegetation is removed to accommodate reuse activity. Please include text within the document to address potential MEC exposure in dense vegetation areas. Quality Assurance audits should be accomplished shortly after completion of field work. Direct observation should verify compliance with written project plans and procedures. Additionally, an accurate audit of removal efficiency is difficult when the vegetation height increases form the previously cut level.

Response 7**:** Vegetation clearance activities were completed within the Parker Flats MRA prior to MEC removal activities. MEC removal was conducted over the entire site followed by contractor quality control. Quality assurance was conducted in accordance with standard USACE procedures. However, based on this comment and other DTSC comments, two follow-up actions were completed.

A site visit was conducted on July 11, 2005 by representatives of DTSC, EPA, Army, and USACE to observe the conditions of the vegetation at the site where the DTSC identified inconsistencies based on its review of where munitions-related items were found and vegetation density interpreted from aerial photographs. Two locations with vegetation concern were selected by DTSC. At one of these locations, vegetation had been cut several years after the removal work was completed, in support of a police investigation. At the other location, vegetation appeared have been burned but the area was not within the Parker Flats MRA.

An additional site validation effort was performed by Parsons under the direction of the USACE. In addition, the field activities were also supervised by qualified UXO personnel from EPA and DTSC. This site validation was performed on portions of four 100 by 100 foot grids and included a site walk in the remainder of the southern portion of Parker Flats. The work was completed between November 1 and 3, 2005. A memorandum describing the results of the survey is included as Appendix G.

The grid search covered approximately 25 percent of each of four previously cleared grids. A SchonstedtGA52Cx was used to search the site for anomalies. The areas in which the grids were located were selected by the DTSC. One pound of munitions debris was found in each of two grids. One pound of cultural debris (nails, wire) was found within one of the grids where munitions debris was found one pound of cultural debris was found in one grid. No MEC was found in any of the grids.

The site walk meandered throughout the southern part of Parker Flats and covered approximately 6.2 miles. A Schonstedt GA52Cx was used during the site walk to identify subsurface anomalies present along the path. A total of 83 anomalies

were identified and excavated along the path. 26 anomalies resulted in discovery of munitions debris, of these ten were small arms items, one was two empty ammo cans, nine were fragments, two were expended pyrotechnic debris, three were pieces of M125 series illumination signals, and one was an expended MK II practice hand grenade. The remaining anomalies consisted of range related debris and cultural debris. No MEC was identified during the grid search or site walk. The results of the validation is included in Section 3.2.5.4 of the report.

Comment 8. The remedial investigation of Parker Flats MRA has significantly mitigated the MEC hazard existing. However, MEC is likely to still exist within the project areas because of the approach, methods, and geophysical equipment used during the investigations.

Response 8**:** Based on review of the RI data and the results of the risk assessment it is acknowledged that the potential exists for MEC items to remain at the site. Volume 3: Feasibility Study takes into consideration the potential for MEC items to remain at the site.

GENERAL COMMENTS ON VOLUME 3, FEASIBILITY STUDY

Comment 1. Land Use Controls are discussed throughout the Feasibility Study as a component of Remedial Alternatives. A detailed MEC related Construction Support (Construction Monitoring) Plan should be developed for use within transferred land parcels which have exhibited evidence of MEC. Prior planning will help to lessen the duration and frequency of work stoppages during the possible future discovery of MEC. Please include text which outlines and explains the level of effort to be expected during possible MEC related Construction Support Activities.

Response 1**:** As stated in the FS, the construction monitoring activities will be described in further detail in the Land Use Control Implementation Remedial Design/Remedial Action Work Plan (LUCI RD/RAWP).

SPECIFIC COMENTS

Comment 1. Volume 1, Section 2.3 MR RI/FS Background, lines 21-21 states that regulatory agencies (USEPA and DTSC) have been and continued to be involved and provide input during MEC removal and remedial activities. This statement is misleading, since MEC removal and remedial activities associated with Parker Flats MRA was conducted without full consensus of regulatory agencies. Please rewrite the sentence to reflect the level of regulatory oversight at the Parker Flats MRA.

Response 1: This section will be revised to indicate that, at the time the MEC removal was planned and executed at the Parker Flats MRA, the regulatory agencies were involved in the process; the Army provided work plans and after action reports for agency review, as well as maintaining regular dialogues about ongoing and planned projects. An agreement was signed in 2000 among the Army, EPA, and DTSC to evaluate MEC at the former Fort Ord subject to the provisions of the Federal Facility Agreement. This agreement formalized the regulatory agencies' roles in the military munitions response program at the former Fort Ord.

Comment 2. Volume 1, Section 3.5.2.2, lines 28 through 38. The reference to GA-52/Cx capabilities at MRS-MOCO.2 should be removed or changed to a limitation. The Parker Flats MRS investigation used the past standard of 5-foot wide lanes unlike the 3-foot lanes used in the MRS-MOCO.2 investigation. The use of 3-foot lanes was demonstrated during ODDS and actual MEC investigations to significantly increase the detection capability of the GA-52/Cx. The use of 3-foot lanes with handheld geophysical instruments is now standard during MEC investigations within the former Fort Ord.

Response 2: Additional text will be added to indicate the limitations of using this data to support the Parker Flats MRA RI.

Comment 3. Volume 1, Table 1 indicates the status of Track 2 Parker Flats MRA and other Track 2 sites. Several Parker Flats MRS sites are listed in which sampling/removal is in progress (MRS-50, MRS-52, MRS-53, MRS-54EDC, and MRS-55). Please explain the rationale to use data from these sites, in which information is incomplete or pending.

Response 3: Table 1 has been revised to reflect the correct status of these sites which is removal complete.

Comment 4: Volume 3; Feasibility Study; Plate 1 does not include the location of the Monterey Salinas Transit (MST) Park and Ride as referenced in page 5 of Section 2.1.1 Assessment of Reuse Areas for FS Analysis. Please correct Plate 1 to indicate the location of this facility.

Response 4: Volume 3; Feasibility Study: Plate 1 was revised to show the Park and Ride location.

Comment 5: Volume 3; Feasibility Study; Plate 1 and The text varies between CSUMB extension and/or expansion. Please correct either the text or Plate 1.

Response 5: Volume 3: Feasibility Study: Plate 1 and the text were reviewed. The text was revised to match the plate.

Responses to Comments from California Department of Toxic Substances Control (Brian Davis)

GENERAL COMMENTS

Comment 1: UNCERTAINTY

Comment 1A: We commented previously (DTSC, 2004a) on the considerable uncertainty in the estimates of detection efficiency and the calculation of MEC density. The Army's Response to Comments agreed to improve this discussion, but the only change was the addition of a short paragraph acknowledging the small sample size.

Response 1A: Please see Response 1E.

Comment 1B: Sections 5.1.2 and 5.1.3 discuss the uncertainty in the MEC risk assessment. We do not find the discussion to be balanced. Section 5.1.2 devotes close to two pages justifying the estimates of detection efficiency and the new brief paragraph acknowledging small sample size. Nor do we agree with the conclusion that "*In summary, the ODDS Seeded Test and supplementary seed studies used in the RI equipment evaluation are considered representative and conservative in estimating the detection efficiency achieved in the field.*"

Response 1B: The sentence will be revised to read, "In summary, although the methodology of the ODDS Seeded Test is not identical to the field method used for the geophysical investigation, overall the ODDS Seeded Test and supplementary seed studies used in the RI equipment evaluation are considered conservative in estimating the detection efficiency achieved in the field." See Response 1E.

Comment 1C: Similarly, we do not agree with the conclusion of Section 5.3 that "*When considering the effect of all the uncertainties, the Overall MEC Risk score is likely overestimated in this analysis. The primary driver to the Overall MEC Risk score is the MEC Hazard Type. Given that the MEC items found were removed, it is not possible to know if any of the higher hazard items remain at the MRA, and therefore, the score could be lower.*" Of course, it is also not possible to know if many higher hazard items remain and therefore, the score should be higher. Our rationale for taking issue with the conclusions of Sections 5.12, 5.1.3, and 5.3 is presented in the following comment.

Response 1C: Inputs to the risk protocol reflect the uncertainties regarding the density of MEC items remaining at the site. The MEC Density inputs are based on the MEC items found and the estimates of equipment detection efficiencies. The estimate of equipment detection efficiency is expected to be lower than the actual field detection efficiencies as described in Section 3.5.2.2 of Volume 1:

Remedial Investigation. Page 67 of Volume 1: Remedial Investigation summarizes the reasons why the actual MEC removal efficiency is likely to be higher than the detection efficiencies in the Risk Assessment: the ODDS results used a 1.6 foot search radius instead of the larger 3.3 foot search radius; over 163,000 locations were excavated over the approximately 600-acre Parker Flats MRA as part of the removal action, and each excavation was further checked with Schonstedt magnetometer for additional anomalies; recovery of seeded items during MEC removal at MRS-MOCO.2 indicated that the Schonstedt magnetometer was capable of detecting 37mm projectiles better than the detection efficiency used in the Risk Assessment; typical depth distribution of MEC items are shallower than the depths of inert munitions debris items seeded for the ODDS Seeded Test, from which the detection efficiencies are calculated; and QC and QA inspections were performed on each removal grid, providing assurance that the Parker Flats MRA MEC removal was performed in a thorough and appropriate manner.

Although all MEC items found during the 100% survey of Parker Flats were removed, the after-action risk results for receptors with a Level of Intrusion greater than one foot below ground surface are the same as the baseline risk in 7 of the 9 reuse areas. In other words, the reduction in risk from removing the MEC items found during the survey of 100% of the area is not reflected in risk score. The fact that the risk reduction provided by the removal action often is not reflected in the risk scores is an indication of the conservative nature of the risk protocol in characterizing the potential remaining MEC risk at the site. Therefore, in the opinion of the Army, the risk results provide a conservative profile of the potential risk remaining at Parker Flats MRA."

Comment 1D: **First, Section 5.1.2 notes that the sample numbers are small, but doesn't point out the significance of that fact. Because small sample sizes are associated with large variances, the actual detection efficiencies and MEC densities could be far higher or far lower than the estimates. Second, the findings were extremely heterogeneous across Parker Flats (e.g., Footnote 1, page 11). This also increases the variance and decreases the reliability of the estimated detection efficiencies and MEC densities. Third, results were extrapolated from different areas. This compounds the intrinsic heterogeneity and adds uncertainty. Fourth, the detection efficiencies and MEC densities are based on nine different items found at Parker Flats. Detection efficiencies could be quite different for some of the items. Fifth, some of the percent detections reported for these nine different types of items are extrapolated from other items or other depths. Sixth, the Schonstedt magnetometer used at the time had limitations in its detection capability. Seventh, the field investigations, sampling, and removal activities were done by three different contractors. This may have introduced further variability.**

Response 1D: Additional text describing the sources of uncertainty will be added to the risk assessment as described in Response 1E.

In reference to the contractors performing the work at the Parker Flats MRA, the comment refers to three contractors. The initial work conducted by HFA was performed to determine the need for further removal activities. The grids sampled by HFA were re-evaluated during the sampling and removal activities performed by the second contractor, CMS. CMS changed its name to USA Environmental during the course of the program. Therefore, the removal activities in multiple grids were performed twice by two contractors (HFA and CMS/USA). The MEC removal action was completed over the entire Parker Flats MRA by one contractor (CMS/USA). Please see Section 3.3 of Volume I: Remedial Investigation for additional information.

Comment 1E: These aspects of the determinations of detection efficiency and the calculation of MEC density mean that the estimates are highly uncertain. A fair conclusion is that detection efficiency could be much better than estimated and MEC density could be correspondingly lower, or detection efficiency could be much less than estimated and MEC density could be correspondingly higher. Given the seriousness of the potential consequences, it is important to acknowledge this in the risk assessment and in the Remedial Investigation Report.

Response 1E: The uncertainty in the percent detection and the MEC density is reflected in the Overall MEC Risk scores. The Overall MEC Risk scores do not change for some receptors between the baseline and the after action scenario, even though all MEC that was detected, was removed. The Overall MEC Risk reported could be higher or lower than actual due to this uncertainty for some of the scenarios. It is important to have a balanced discussion of the uncertainty in the risk assessment.

Of the seven points raised in Comment 1D, one is resolved in Response 1D. The remaining six of the seven points raised in Comment 1D will be included in the risk assessment by the following sentences being added to Section 5.0:

"Several factors increase the variance in the percent detection and MEC density calculations:

- A small sample size was used in determining the detection efficiencies. Because small sample sizes are associated with large variances, the actual detection efficiencies and MEC densities could be far higher or far lower than the estimates.
- The location of MEC items identified in the Parker Flats MRA indicates a heterogeneous distribution of items, which may increase the variability.
- The detection efficiencies were extrapolated from studies performed in several settings at locations outside of the Parker Flats MRA. These

locations will have different physical properties than Parker Flats MRA and will increase the variability associated with the detection efficiencies.

- The detection efficiencies for different items from the studies were combined to determine the average detection efficiency for those items not included in the seeded studies.
- The detection efficiencies from some items were extrapolated to other items with similar characteristics; however, the detection efficiencies cannot be considered exact matches for those items.
- As discussed in Section 3.5.2.2 of Volume I: Remedial Investigation, there are limitations in the use of Schonstedt magnetometers. These limitations may increase the uncertainty of the density calculations.

Given these factors, the MEC Density calculations may be higher or lower than the numbers provided in Tables 4-1 and 4-2."

Comment 2: MEC DEPTH

Comment 2A: Section 2.5 states the "*Even though a 4 foot removal was carried out at the Parker Flats MRA, a MEC depth score of 6 (any MEC items remaining at the site are at a depth of 1 foot or greater) has been conservatively selected for input to the MEC risk assessment.*" We (DTSC, 2004a) challenged this statement. It is not "conservative" to select a MEC depth score of 6, because the detection efficiency was less than 100% at all depths. Therefore, there may be items remaining in the 0 – 6 inch interval and in the 7 – 12 inch interval.

Response 2A: A detection efficiency of 100% is not a premise in the risk protocol for determining depth of removal. The protocol establishes scores based on the best available information. A MEC depth score of 6 (any MEC items remaining at the site are at a depth of 1 foot or greater) was chosen as a conservative score because a four-foot removal would give a MEC depth score of 3 (any MEC items remaining at the site are at a depth of 4 feet or greater), and for Parker Flats MRA where all detected anomalies were intrusively investigated, a MEC depth score of 1. The MEC depth is scored higher than the removal action would warrant in the risk assessment protocol.

The following text will be added to Section 5.2.1: "A MEC Depth score of 6 was chosen for the after action scenario for all of the areas having a receptor with a Level of Intrusion greater than one foot bgs. A MEC Depth score of 6 describes an area where "any MEC items remaining at the site are at a depth of 1 foot or greater." This approach likely overstates the risk because no anomalies were left uninvestigated by USA Environmental within the Parker Flats MRA."

Comment 2B: Similarly, Section 2.5 argues that for receptors who only contact surface soil, a MEC depth score of 1 (100% of detected MEC removed considering data quality for the area) is appropriate. We (*DTSC, 2004a*)

also challenged this statement. The text supports these MEC depth scores because the survey and removal was "*…of high enough quality*". Given the uncertainties described in General Comment 1, the quality is arguable.

Response 2B: The quality of the survey and removal was determined in Volume 1: Remedial Investigation. As described in the RI, QC and QA procedures were conducted on the completed grids. Although uncertainty is inherent in MEC survey and removal, the Army believes that the actions performed at the Parker Flats MRA were of a higher quality than can be shown by the detection efficiencies from seeded tests, because items detected in the field investigation were investigated to resolution. Items detected in the seeded tests were noted, and not investigated. Please see Section 3.5.2.2 of Volume I: Remedial Investigation for additional information.

Comment 2C: Although the Responses to Comments addressed these issues, we do not find the reasoning to be compelling.

Response 2C: Please see clarifications provided in Responses 2A and 2B.

Comment 3: RECEPTORS. The choices of appropriate receptors are all predicated on the current proposed land uses, for both baseline risk assessments and post-remediation risk assessments. No consideration is given to future changes in land use.

A comparison of the planned land uses in the May, 2004 Preliminary Draft version of this document with the planned land uses in the current version of the document is informative. In this period of nine months, the list of planned reuse areas has increased from five to ten, and the descriptions of some areas (e.g., the horse park) have changed. These kinds of changes are typical at closed military facilities. Consideration should also be given to the desirability of this area and the population pressures, which could result in more residential housing than is currently planned.

Since these MEC risk assessments are restricted to current planned land use, it will be important to have institutional controls to prevent inappropriate land use in the future.

Response 3: Parker Flats Munitions Response Area was expanded to include MRS 13B in the Draft report. MRS 13B contains the five added land use areas. Comment regarding additional potential for changes in future land use is noted and is addressed in the recommendation of land use controls in the Feasibility Study.

Comment 4: INPUT FACTORS AND OVERALL MEC RISK. Because of time constraints, we did not do a detailed evaluation of the selection of input

factors for each scenario and the determination of overall MEC risk (Tables 4-3 through 4-20). Instead, we did spot checks and we looked at the results for plausibility.

Response 4: A thorough check of all input factors and overall MEC risk scores was conducted prior to submittal of the risk assessment for regulatory review. No response indicated for this comment.

Comment 5: **MEC RISK REDUCTION. We previously (DTSC, 2004a) pointed out that a comparison of the baseline risk assessment results (Tables 4-3 through 4-11) with the post-remediation risk assessment results (Tables 4-12 through 4-20) shows considerable improvement for those receptors with limited intrusion and essentially no improvement for those receptors (construction worker, outdoor maintenance worker, habitat worker, cemetery worker, and residents) who may intrude into deeper soil. We noted that the removal of a large number of items has in fact lessened the risk for all receptors. We then pointed out that these results serve to focus our attention on the greater uncertainty and poorer detection of hazardous items that may remain at depth. This is significant because the Remedial Investigation/Feasibility Study (e.g., Plate 16) notes that "*Most MEC found below the ground surface*."**

The Response to Comments is "*Concur. Discussion of the reduced risk for all receptors due to the removal of MEC will be added*." This response suggests that the author did not read the entire comment. There are two parts to the comment. The first part is that there has been risk reduction for all receptors. The second part, for which there is no response, is that the risk assessment leads to an important conclusion about residual risk. The potential risk from intrusive activities remains significant.

Response 5: The following text will be added to the conclusion (Section 6): "If items do remain at Parker Flats, it is likely that they are below the ground surface. Therefore, as seen in Tables 6-1 through 6-9, the risk for receptors performing intrusive activities (e.g., construction worker) remains high."

Comment 6: **CONFIRMATION SAMPLES. We previously (DTSC, 2004a) recommended confirmation sampling. The response is that it has already been decided that confirmation sampling "…*would not tell us anything more and so all agencies decided not to do it*." We continue to strongly recommend confirmation sampling.**

Response 6: The survey and removal activities performed at the Parker Flats MRA cleared 100% of the detected anomalies to the depth of detection. Over 14,000 MEC and MD items were detected and removed. Over 163,000 locations were excavated in Parker Flats MRA during the removal action. QC and QA methods were in place to assess the quality of the work performed.

The effect of confirmation sampling on the risk assessment would be limited. If confirmation sampling were performed, two outcomes would be possible, either more items would be found or no more items would be found. If no more items are found, detection efficiency performance would still be used to estimate the number of items remaining. If more items were found, they would be removed, and detection efficiency performance would be used to estimate the items remaining. Once those are removed, the after action risk would not change.

As discussed previously in Response to DTSC Comment 7, a site validation effort was performed in November 2005. During this effort, a 25 percent grid search of 4 grids was performed along with a Schonstedt assisted site walk. No MEC was discovered during this effort; therefore, no changes to the Risk-Assessment would occur.

If seeded items were used in the confirmation sampling, it may be possible to better determine the actual percent detection in one portion of the Parker Flats MRA; however, the percent detection would need to be significantly different from the assumed percent detection used in the risk assessment to influence the outcome of the density calculations. In addition, the sample size for the determination of a percent detection would still be small, introducing variability as discussed in General Comment 1.

The FS recommends land use controls for the Parker Flats MRA. If confirmation sampling was performed, the results would not likely allow for changes in this recommendation.

Comment 7: QUALITY OF THE RESPONSES TO COMMENTS.

Comment 7A: It is disappointing to find changes, which the responses commit to, have not always been done (Specific Comments 1 and 4; General Comment 1).

Response 7A: The draft final Track 2 MR RI/FS report incorporates the comments and responses as noted herein.

Comment 7B: In reviewing documents, we spend the time and care to provide thoughtful, constructive comments. It therefore seems inappropriate to apply generic, boilerplate responses. The same response is given to DTSC General Comment 1, DTSC General Comment 5A, U.S. EPA (C. Trombadore) General Comment 1, U.S. EPA (C. Trombadore) Specific Comment 2, and U.S. EPA (D. Stralka) Comment 1. Not only is this response generic, but its meaning is unclear. The second sentence states that "*The removal action was designed to address MEC at a depth of four feet below the ground surface; however, per the RI approval was given to invest anomalies at depths greater than four feet." What is intended by "per*

***the RI approval*"? What is intended by "*to invest anomalies at depths greater than four feet.*"?**

Response 7B: Each of the comments asked for clarification of the survey and removal action. The response was tailored to give a consistent response to similar questions. The grammatical errors identified in the comment were corrected in the report. The statement was intended to clarify that anomalies detected at depths greater than 4 feet were investigated, although the original plan was to remove MEC items only to a depth of 4 feet.

Comment 8: REVIEW OF PRELIMINARY DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY. We commented (DTSC, 2004b) on the Preliminary Draft Remedial Investigation/Feasibility Study. We did not receive responses to those comments.

Response 8: The Army received the referenced comments on July 6, 2005.

SPECIFIC COMMENTS

Comment 1: Documentation of Changes. Responses 6A, 6B and 6C in the Responses to Comments state that "*Specific changes will be noted and the cover letter transmitting the revised risk assessment…*" This cover letter was not included with the document.

Response 1: The receptor input factors are given in Tables 3-1 and 3-2. A table identifying specific changes was provided to DTSC.

Comment 2: Section 3.1 of Volume 1, Section 1.2 of Volume 2. We previously (DTSC, 2004a) pointed out inconsistencies within the previous version of the document in the number of Munitions Response Areas (MRSs). The number was sometimes said to be ten and sometimes twelve. Inconsistencies remain. Section 3.1 of Volume 1 states that Parker Flats "*…is composed of portions or all of several MRSs*" and lists 13, while Section 1.2 of Volume 2 states that there are 13 Munitions Response Areas or MRSs and lists14.

Response 2: Concur. The text referring to the number of MRSs will be made consistent with the discussion in Volume 1.

Comment 3: Section 1.2 of Volume 2. The text states that the risk assessment is an appendix to the Remedial Investigation/Feasibility Study. This will confuse the reader because the risk assessment is Volume 2 of the Remedial Investigation/Feasibility Study, not an appendix.

Response 3: Concur. Risk assessment will be referred to as Volume 2 instead of an appendix.

Comment 4: Section 2.21 of Volume 2. The text discusses "*CAIS Kits*." This term should be defined in the text and in the list Acronyms and Abbreviations.

Response 4: CAIS Kits are Chemical Agent Identification Set Kits. The definition of the term will be included in the text and the Acronyms and Abbreviations list.

Comment 5: Section 2.4.1 of Volume 2. Our previous review (DTSC, 2004a) requested the use of a consistent symbol for percent detection. Although the Response to Comments agreed, it remains sometimes symbolized by "*Pd*" (page 11 text) and sometimes symbolized by "PD" (page 11 equation).

Response 5: "Pd" will be used consistently throughout the document to refer to percent detection.

Comment 6: Section 4.2.1 of Volume 2, Tables 4-3 through 4-20. The text states that "*The line of input factors for the MEC Hazard Type driving the Overall MEC Risk score is highlighted*." An explanation is needed to clarify what is being highlighted. It is unclear why one MEC Hazard Type or another is chosen for given receptor.

Response 6: The following sentences will be added to the paragraph describing Tables 4-3 through 4-30: "The MEC Hazard Type giving the highest Overall MEC Risk score is highlighted in each table. In general, the highest MEC Hazard Type (MEC Hazard Type 3) produces the highest Overall MEC Risk. However, in some instances, the MEC Density associated with MEC Hazard Type 3 is lower than the MEC Density of another MEC Hazard Type and the Overall MEC Risk score is determined using another MEC Hazard Type. Theoretically, if there is one MEC Hazard Type 3 item in an area and ten MEC Hazard Type 2 items in the same area, the risk is more likely to be from the MEC Hazard Type 2 items."