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PROJECT DOCUMENT REVIEW RECORD

DOCUMENT TITLE/DESCRIPTION: **Waste Area Groups 6 and 10: *Draft Record of Decision Experimental Breeder Reactor-1/Boiling Water Reactor Experiment Area and Miscellaneous Sites*, DOE/ID-10980, Revision Draft A, April 2002, (Operable Units 6-05 and 10-04)**

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COMMENTS

EPA Note: The second additional general comment (#10), in particular, poses some challenges for this decision. I think to a degree the matrix of UXO remedial actions specific to the various locations can be developed as part of RD/RA. I also think, however, that the comment is well taken that the ROD should be more specific and affirmative there possible about UXO remediation. For instance, in addition to institutional controls, I think it is clear that there should be an ongoing program to record existing UXO, identify and investigate additional discoveries, and to remove the UXO that is known. When there are fires, for instance, the program should note any newly- identified UXO, document, and proceed to remove. Similarly for new finds reported by other methods. This is an ongoing effort that resembles O&M as much as anything, but I think it is an important element to the remedy that can be applied universally and is one of the elements of the remedy about which we can be specific. Other actions can also be specified that will taken based on the circumstances.

ITEM NUMBER	SECTION NUMBER	PAGE NUMBER	COMMENT	RESOLUTION
1.	Section 1	General	Section 1 needs to much more clear regarding the division of responsibilities between OU 10- 04 and OU 10-08 with regards to evaluation of impacts on the Snake River Plain Aquifer. Some tabular format showing the components of 10-04 is probably necessary.	Text was added to more clearly explain responsibilities of 10-08 and 10-04 with regard to groundwater concerns as well as new site evaluations.
2.	General	General	The distinction between CERCLA offsite/onsite and INEEL offsite/onsite needs to be explained. CERCLA has a specific view of what constitutes offsite and onsite. Where there are two or more non-contiguous facilities that are reasonable related on the basis of geography, or on the basis of the threat, or potential threat to the public health or welfare or the environment, CERCLA section 104(d)(4) and the preamble to the NCP (55 FR 8690) allows EPA to treat these related sites as one facility for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. Throughout this document, I recommend that where "on the INEEL site" is meant, that it be stated that way for clarity.	The text will be corrected as requested. "On site" and "off site" will be changed to "on the INEEL" and "off the INEEL" as appropriate.

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3.	General	General	Throughout the document, it should be clear that 'Limited Action" is a form of remedial action, subject to the same considerations including periodic reviews for continued protectiveness.	Accept – text is changed to make it clear limited action is also a remedial action.
4.	General	General	For ecological risk, the decision is best characterized as "no action with monitoring"	The text has been changed to indicate for ecological receptors no action with monitoring will be performed.
5.	General	General	It is clear we will need institutional controls on the Naval Gun Range and bombing areas. Given that, there will necessarily be ICs in the other ordnance areas which the Naval Gun Range overlaps, as well as the TNT/RDX soil contamination sites. This should mean that the cost estimates for these other areas should be less, since the IC portion of their remedy is already "paid for" by the Naval Gun Range estimate.	Comment noted. While it is agreed that when considered on a comprehensive INEEL-wide basis, many of the costs for institutional controls may be redundant at the site-specific level. However, to facilitate evaluation and selection of alternatives for the different sites (i.e., TNT/RDX soil sites, UXO areas, and STF-02) it is necessary to cost all the alternatives with the same assumptions.
6.	General	General	For the ordnance, I think we need a remedy that is a combination of alternatives 2 and 3. The basis of the remedy would be alternative 2, but the O&M would provide for periodic visual surface surveys of the areas of known ordnance, and removal of identified ordnance. This would not include the Naval Gun Range or the bombing areas unless special circumstances (such as fires) made them worthwhile. The kinds of surveys and removals included in alternative 3 would be evaluated during reviews of the remedy. This review would also evaluate the continuing effectiveness if the ICs. Performance of surveys and removals would be contingent on demonstrating that the action would result in reduction of the ICs necessary.	As per agency discussion, the selected alternative for the ordnance areas will be Alternative 3, but the remedial actions will be phased and the large-scale UXO survey postponed. The phased appropriate will be developed during preparation of the remedial design/remedial action plan. The INEEL-wide institutional control plan will specify 10-04 responsibilities for maintaining access and activity restrictions and identify conditions/circumstances when 10-04 would perform UXO survey and removal. The INEEL-wide IC plan will also define the responsibilities

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				other programs to perform UXO survey and removal to support project specific activities in areas known or suspected of containing UXO.
7.	General	General	For the TNT/RDX soil contamination, similar contingencies would apply. Action would be contingent on showing that remediation of the soil contamination would reduce ICs. From a practical standpoint, this would be unlikely as long as these sites were also UXO risks.	Resolved through agency discussion. The remedy will be implemented in phases and the specific approach will be described in the remedial design/remedial action plan.
8.	General	General	A priority-based phased approach to site cleanup is needed, consistent with recommendations from the CAB. I recommend categorizing sites based on the nature (e.g. explosive vs cancer risk) and magnitude of risk, whether the risk is current or an estimated future risk, effectiveness of cleanup, and cost, among other attributes. Based on this, the sites can be ranked by priority for action.	Resolved through agency discussion. The remedies will be implemented in phases and the specific approach will be described in the remedial design/remedial action plan.
9.	General	General	There is a lack of specificity on clearance depth requirements. The Department of Defense, Explosive Safety Board has published policy guidelines (DDESB 6055.9 Chapter 12) for clearance depths based on current and/or anticipated land use. This is noted in the ROD under discussions of "To Be Considered", which is appropriate since these are policy, and not regulations. The depths listed in Chapter 12 are not considered to be "default" clearance depths, and can be adjusted up or down based on site specific conditions. The ROD text at various locations indicates that removal actions have achieved clearances ranging from the surface, one foot, two feet, and four feet. No rationale is provided for the variety of clearance depths. The ROD would benefit from a discussion of land use objectives and a site- specific determination of appropriate clearance depths to support intended land use. Without this building block, it is very problematic to establish	Comment noted. Presently the extent of UXO is not known, and the risk from remaining UXO has not been determined. While most UXO detected and removed to date has been within 2 ft of the surface, with some UXO as deep as 4 ft, until the extent, depth and risk of UXO are known and understood, and placed in context of land use requirements, it may not be appropriate to specify a depth of clearance in the ROD. Rather, it is intended that the remedy include performing surveys, defining the extent, nature, and risk of remaining UXO be determined, define land-use objects defined, and then determine the extent and depth of UXO removal required.

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			data quality objectives for detection systems, which by their nature are sensitive to soil matrices, terrain, and depth requirements for clearance.	
10.	General	General	The remedial action to address UXO safety concerns reads more like a scope of work general statement of purpose (i.e., protection against unintentional detonation of UXO). While this is a very good goal statement, there is a lack of details in the ROD on how this will be accomplished. Therefore, it makes measurement of accomplishment of ROD goals very problematic and potentially very subjective. The ROD should include some clearer performance statements for the remedy. These would constitute a toolkit from which the specifics of the remedy could be developed. Examples could include the following: • Development of site-specific management plans for each of the areas. These should take into account historic information, and potential migration pathways, and should be updated as more data becomes available through reconnaissance, geophysical investigations, excavation of target anomalies, or through new historical information. • Criteria for surface clearance of ordnance, UXO, and metallic debris prior to undertaking geophysical surveys. • Removal and onsite storage of bulk explosives prior to undertaking geophysical surveys. • The use of aerial and/or land based geophysical equipment to delineate the boundaries of firing and bombing impact areas, as well as kick out from weapons testing areas, and ammunition detonation areas.	The text was modified to more clearly indicate the activities for implementing the selected remedy for the UXO areas. Because information on the extent, depth, and risk of the UXO in incomplete a clear plan that defines all the criteria necessary to remediate the UXO can not yet be developed. Therefore, the work necessary to obtain this information will be performed post-ROD as part of the remedy.

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			• The establishment of performance criteria for geophysical detection systems. • Establish boundaries of firing and bombing impact areas, as well as kick out from weapons testing areas and ammunition detonation areas. • Criteria for excavation of anomalies (i.e. appropriate depth for site-specific land use). • Geophysical data will be digitally recorded and geographically cross-referenced in order to provide a permanent record. • Establishment of quality assurance and quality control methods throughout the ordnance detection, excavation, disposal, and certification processes that are consistent with EPA's Handbook on the Management of Ordnance and Explosives at Closed, Transferring, and Transferred Ranges and Other Sites.	
11.	General	General	Offsite Incineration of soils contaminated with TNT and RDX. Onsite composting should be given more serious consideration. It has a much lower unit cost (typically $250 - $300/ton for composting versus $750/ton for incineration). It is difficult to understand how the onsite composting alternative costed ($5.1M) out at nearly the same cost ($5.2M) for offsite incineration. I expect that the composting alternative has the potential for far greater cost savings and should be given more careful consideration. Other considerations to think about with respect to composting is that it has been successfully implemented at Umatilla Weapons Depot in Oregon and achieved greater than 99% reduction in concentrations.	Comment noted. The actual cost for excavating and composting the soils is estimated to be $770 K, and the cost for excavation, transportation, and incineration of the soils is $900 K. Thus these treatment costs are similar, and are estimated to be about $100/ton. The cost for incineration is lower than the $750 stated because an existing, permitted facility can be used. These costs do not include preparation of the planning documents, safety documents, waste management documents, etc. or management oversight, which adds significantly to the overall cost of implementing the remedy.

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			Summary technical information can be found at the following sites. Cleanup Technology. Cost and Design for Application of Biotreatment Technologies for Explosive Contaminated Soils. Overview of technical paper evaluating several biotreatments http://aec.army.mil/usaec/technology/cleanup01b.html Cleanup Technology. Windrow Composting of Explosives Contaminated Soil. Overview of Umatilla Chemical Depot windrow composting. http://aec.army.mil/usaec/technology/cleanup01b.html. Featured Research. Melting Away Danger. Overview of research efforts at INEEL to compost soils with TNT by addition of nutrients and acetone. http://www.inel.gov/featurestories/6-99tntpre.shtml	Additionally, it was assumed the sites would be controlled for 100 years, and that periodic soil sampling and groundwater sampling would be performed during this 100-year period, which added significant cost to the total estimate. It is recognized that composting will be effective in reducing the TNT and RDX concentrations. However, after the soil is excavated to achieve the remediation goal, the average concentration is expected to be very low – between 400 and 600 ppm. This is because the contamination exists in small (less than 2-ft diameter) and widely spaced areas. Unlike Umatilla, where the TNT contamination was very extensive (thousands of cubic yards) with much higher concentrations (thousands of ppm), direct disposal is practical when the volume of soil is low and the concentration of TNT and RDX is low.
12.	General	General	Onsite disposal of soils in a landfill with TNT concentrations of less than 10,000 mg/kg. This is a questionable alternative at best. It is essentially taking untreated soils with potentially high levels of an explosive compound that does not degrade well under ambient conditions and placing it under a cap where it will persist for an indefinite period of time. It would be better to compost it or burn it. This would provide for permanent destruction by treatment. See	The average concentration of TNT/RDX contamination in the soil is expected to be less than 600 ppm. Experimental evidence indicates TNT and RDX will degrade under conditions in the landfill. ("Laboratory Studies of Soil Sorption/Transformation of TNT, RDX and HMX," USACE Technical Report IRRP-98-8,

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			comment # 3 above.	Sept. 1998)
13	General	General	The current text of the draft ROD is difficult to follow when it comes to listing areas of concern for the presence of UXO. For example, the Declaration on pages iv and v indicate that three areas (NPG, Arco, and Twin Buttes Bombing Ranges) will be cleared for UXO. Later in Chapter 7 the text indicates that there are 29 areas with UXO potential and that 22 are within the NPG (pages 59 and 60). Chapter 8 then discusses six areas that are of concern for UXO within the NPG, plus the Arco and Twin Buttes Bombing Ranges. Later in Chapter 8 (pages 91 and 92) only the six areas within NPG are considered for remedial action. Finally, in Chapter 11 concerning institutional controls, Table 33 identifies 25 sites where..."There is a potential for UXO to remain in the area." There needs to be a consistent logic concerning the number of sites where UXO may pose an explosive safety hazard, and a consistent methodology to investigate and clear these areas for UXO.	The text has been changed to clarify the areas with potential UXO. Text in section 8 was revised to make it clear that all ordnance areas will be remediated and that the TNT/RDX soil sites are within the ordnance areas. Revisions were made to the description of the selected remedies for the TNT/RDX and ordnance sites to present a consistent methodology for investigating and removing UXO.
14.	General	General	The ROD contemplates the use of aerial magnetometer surveys. To date, aerial platforms have shown promise for detecting very large discrete items and burial areas. Aerial platforms are currently a focus of considerable research and development efforts to improve production rates and efficiency at detecting smaller items of ordnance. Research is also focusing on multiple arrays of magnetometers and EM devices. Aerial platforms may be useful at INEEL for the aerial bombing ranges where large weapons systems were deployed, but it is unlikely that the current state of the art will be very useful for the majority of the areas where smaller weapons systems were deployed and/or tested. Another alternative for boundary delineations, as well as	Considerable effort was made to investigate aerial and towed-array methods of UXO detection during development of the feasibility study, including consultation with USACE and the researchers most active in these areas. A detailed discussion was presented in the feasibility study. The use of towed array systems would require removal of large sagebrush and other native vegetation across vast areas at the INEEL, which would destroy critical habitat. Towed array systems are still considered appropriate for smaller areas where

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			identification of discrete anomalies, is the use of towed array systems where the terrain is amenable to such systems. The ROD may benefit from discussion of these kinds of detection platforms as well for identification of anomalies for excavation.	vegetation has been destroyed by fire and other disturbed areas where vegetation will not hinder use of a towed system The ROD will provide a reference to the technology evaluations presented in the feasibility study.
15. (EPA#1)	Part I	iii	Statement of Basis and Purpose: The second sentence should be clarified to state that limited action is also remedial action.	Text was changed as requested.
16. (EPA#2)	Part I	iii	Assessment of Site: The ROD Declaration must include the following language: "The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment."	Required changes were made to the text.
17. (EPA#3)	Part I	iii	Description of Selected Remedy: The last sentence in the first paragraph needs clarification. The operable unit does not encompass the RI/FS report. The report addresses the OU.	Text was corrected.
18. (EPA#4)	Part I	iii-iv	Description of Selected Remedy: The 4th and 6th paragraphs should be deleted and the 5th paragraph	Text was changed as requested. The selected remedies are now described in terms of the remedial actions that will be performed, such as

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			edited for clarity. There are more than "three remedial actions". There are a number of "types" of remedial actions, including limited action. In the 3rd paragraph, remedial cations need to be selected in accordance with CERCLA, not "to the extent practicable".	removal, treatment, institutional controls, etc.
19. (EPA#5)	Part I	iv.	Selected Remedy for the Ordnance Sites: The list of actions that shall be taken should be modified. The remedial action will be institutional controls (as in the last bullet) combined with other actions, which may include the ones listed as appropriate.	The list was revised to emphasize institutional controls as a primary action, which will be maintained until the UXO hazard is removed or reduced to acceptable levels. The implementation of other actions will be phased. The phases and strategy for implementing the phases will be developed during development of the RD/RA plan.
20. (EPA#6)	Part I	v.	6th bullet: MDA should be defined.	Text was corrected.
21. (EPA#7)	Part I	v.	8th bullet: The distinction between CERCLA offsite/onsite and INEEL offsite/onsite needs to be explained. CERCLA has a specific view of what constitutes offsite and onsite. Where there are two or more non-contiguous facilities that are reasonable related on the basis of geography, or on the basis of the threat, or potential threat to the public health or welfare or the environment, CERCLA section 104(d)(4) and the preamble to the NCP (55 FR 8690) allows EPA to treat these related sites as one facility for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. I	Text was changed throughout the ROD to replace 'on-site' and off-site' with 'on the INEEL' and off the INEEL' in all cases where it was appropriate. On-site and off-site are used only in context of the areas to be remediated.

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			recommend that where "on the INEEL site" is meant, that it be stated that way for clarity.	
22. (EPA# 8)	Part I	v.	Selected Remedy for TNT/RDX Contaminated Soil Sites: Similar to the ordnance sites, the remedy should be described as institutional controls combined with other actions to include those listed as appropriate.	The list was revised to emphasize institutional controls as a primary action, which will be maintained until the TNT/RDX hazard is removed or reduced to acceptable levels. The implementation of other actions will be phased. The phases and strategy for implementing the phases will be developed during development of the RD/RA plan.
23. (EPA #9)	Part I	vi.	5th bullet: Field screening methods may be useful in estimating extent, but they may not be sufficient.	Text was changed to include laboratory analysis.
24. (EPA# 10)	Part I	vi.	6th bullet: What is the reference/basis for stating that TNT above 10,000 ppm is RCRA-regulated? Clarify "offsite" consistent with previous comment from p. v.	USACE HQ Environmental Division Lessons, October 30, 2000, "Classification and Management of Soils Containing Secondary Explosives." Based on review of the A.D. Little report "Testing to Determine Relationship Between Explosive Contaminated Sludge Components and Reactivity, the Omaha HTRW Center (the USACE resource pertaining to hazardous waste classifications) concluded that, for environmental media contaminated with secondary explosives at a

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				concentration of 10% or greater, and in the absence of testing site specific soils for detonation or deflagration, these soils should be considered RCRA reactive and would require a D003 waste code. This is also cited in McCoy's RCRA Unraveled, 2002 edition, page 52, although a concentration of 12% is given as the level for determining when soil contaminated with explosive should be considered reactive. The more conservative concentration of 10% is used in the ROD.
25. (EPA# 11)	Part I	vi.	10th bullet: IC s will be implemented to restrict access "and activities". What will be monitored?	The text was changed to explain air and soil would be monitored until the TNT/RDX contamination is removed or reduced to acceptable levels.
26. (EPA# 12)	Part I	vi.	Selected Remedy for the STF-02: The remedy should be described as removal and treatment which may include the listed activities as appropriate.	Text was corrected as requested.
27. (EPA#13)	Part I	vii.	Institutional Control Sites: This section needs to make it clear that Limited Action is remedial action. If the 7 sites listed have risks less than 1E-4 then why are we taking action on them? This section needs to be modified to accurately explain the basis and need for institutional controls at these sites. What	Text was corrected to clarify that limited action is a remedial action. The text was revised to more clearly state that sites with risks between E-04 and E-06 must still have restrictions on use, as only sites with risks less than E-06 are considered for unrestricted use. Action is therefore required to minimize potential

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			are the objectives of the ICs?	human exposure to contamination.
28. (EPA#14)	Part I	Viii.	OU 10-04 Site-Wide Ecological Monitoring; This section needs to explain that no basis was found in the RI/FS for action based on ecological, risk. The site-wide ecological monitoring should be characterized as part of a "no action with monitoring" decision. The statement of purpose for the site-wide ERA ("compile information...into a depiction of the effects..." is only partially true. This is not an open-ended research project, it is a CERCLA decision process. The purpose of the ERA is to characterize risks for the purpose of making remedial decisions. The monitoring is for the purpose of ensuring that expectations regarding the protectiveness of the no action approach to eco are met.	This section was revised as requested.
29. (EPA#15)	Part I	viii.	Groundwater: This should be characterized as monitoring to support a no action decision on 10-04 groundwater impacts. It should also be tied into the OU 10-08 schedule and sitewide groundwater decisions. The 5-year review discussion here and elsewhere in the ROD needs to clearly distinguish between the statutory 5-year review and the "ROD-level" reviews at INEEL. The statutory 5-year review is performed on	This section was revised to explain the revised strategy for analyzing groundwater samples for nitroaromatics during the fall 2002 sampling event, and the results will determine the need to continue monitoring for TNT and RDX. Text was corrected throughout the ROD to distinguish the statutory review from remedy

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			a sitewide basis for INEEL. The ROD can specify other reviews for its own purposes, but should make the distinction clear. I recommend something like "remedy review" or something similar.	review as recommended.
30. (EPA#16)	Part I	ix.	Five-Year Review Requirements: This section should discuss and clarify the statutory vs remedy review requirements.	Text was corrected throughout the ROD to distinguish the statutory review from remedy review as recommended.
31. (EPA#17)	Part I	ix.	Statutory Preference for Treatment: This section needs to be revised to reflect EPA guidance on principal threat and low level threat wastes (Superfund Publication 9380.3-06FS, November 1991). The statutory preference is for treatment of principal threat wastes (not "preference for treatment as a principal element of the remedy"). The discussion needs to start with what wastes are considered principal threat, as defined by the guidance. Note that guidance recognizes that in some situations site wastes will not be readily classifiable.	Comment noted. The text presently in the ROD is consistent with the EPA guidance "Guide to Preparing Superfund Proposed Plans, RODs, and Other Remedy Selection Decision Documents," July 1999, Section 6.2.5, Statutory Determination Highlight.
32. (EPA# 18)	Part I	x.	Record of Decision Data Certification Checklist: The bullet items should include page or section references for each item. There should be a 9th bullet that addresses source materials/principal threats.	The pages were referenced and a bullet added on source materials and principal threats.
33. (EPA# 19)	Part I	xiii.	The EPA Regional Administrator is John Iani.	Correction was made.

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34. (EPA# 20)	4.	19.	This section should make clear the distinction between no action and limited action remedy and also the distinction between statutory 5 year reviews and remedy reviews specified by the ROD.	The text was clarified as requested.
45. (EPA# 21)	7.2	35.	Recommend review of current guidance on the EPA website (e.g. RAGs part D) to ensure citations are current and complete.	The citations were updated.
46. (EPA# 22)	7.2.1	35.	The screening description in the second paragraph should be clarified. Screening was performed against criteria, and was not just a review of risk assessments.	The paragraph was revised to discuss more clearly what action was performed.
47. (EPA# 23)	7.2.1	35.	3rd paragraph: This paragraph should address cumulative risk evaluations (soil, groundwater, air impacted at a given site).	Comment noted. The cumulative risk assessment discussion is presented in Section 7.2.2. Section 7.2.1 is focused on the data evaluation. A short section on the site evaluation was moved under the introduction to Section 7.0 to improve clarity.
48. (EPA# 24)	7.2.3.2	40.	4th paragraph: The RDX guideline should be explained in a little more detail. How does it relate to MCLs?	The text was changed as follows: "The health advisory (HA) guideline for lifetime exposure is 2 ug/L (HSDB 2000). The lifetime HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects for a lifetime of exposure. No enforceable standard, such as an MCL is currently available."
49. (EPA# 25)	7.3.3	54.	4th paragraph: The discussion of Table 5 needs clarification. The INEEL-wide ecological risk assessment is discussed in the future tense ("will	The text was changed as indicated. The last two sentences in the 6th paragraph in section 7.3.3 were changed as follows: "Information from the INEEL-wide monitoring will be used to determine

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			consider the 10-04 sites eliminated..."), which is incorrect. The INEEL-wide ecological risk assessment has already been completed. In the second to the last sentence, information from sitewide monitoring, not "Information from the INEEL-wide evaluation" will be what is considered by the 5-year review. I recommend either striking the reference to the 5-year review or clarifying it consistent with previous comments regarding the distinction between statutory 5-year reviews and ROD-level remedy reviews. This paragraph needs to include a discussion/rationale for the HQ=10 screening criterion.	if additional remediation is required to protect ecological receptors." The rational for use of an HQ of 10 is based on agency agreement that this value indicates a low risk and that this level or 10 time background for bringing sites forward to the feasibility study. A statement to this effect was added to the text.
50. (EPA# 26)	7.3.3	54.	6th paragraph: This paragraph should point out that generally the loss of individual members of populations does not represent an unacceptable ecological risk.	Text was revised as requested.
51. (EPA# 27)	Table 5	55.	The last column headed "WAG 6 & 10 Remediation?" should be changed. It should indicate screened or not, rather than remedial decision status.	The column heading was changed to "Considered for WAGs 6 and 10 Remediation"
52. (EPA# 28)	7.4	59.	2nd paragraph: "NGP" typo. This paragraph should more clearly follow and describe the CERCLA decision process: evaluate risks, determine whether or not they are acceptable, establish RAOs, etc.	The text was corrected. Comment noted. This is a summary of the risk assessment rather than a summary of the CERCLA process.

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53. (EPA# 29)	7.4	60.	Bullets: This is part of the baseline risk assessment summary. The bullets, however, describe remedy decisions which are not part of the risk assessment.	The text was changed to indicate results of risk assessment for the listed sites.
54. (EPA# 30)	Table 7	61.	This table should include those sites which only require institutional controls.	Comment noted. Since the IC sites were not evaluated in the feasibility study they are not indicated on this table.
55. (EPA# 31)	7.4	62.	This section should include the following language: "The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment."	Text was added as requested.
56. (EPA# 32)	7.5.2.2	64.	Bullets: Define "T/E"	T/E is threatened or endangered. Text in the ROD was changed to spell out threatened or endangered.
57. (EPA# 33)	7.5.2.3	66.	The last paragraph should be expanded to summarize in more detail the sites and where they came from.	A statement was added indicating that the WAG ERAs identified the sites and the COPCs.
58. (EPA# 34)	7.5.4	73.	First paragraph: The last sentence should explain how the unacceptable risks have been or will be addressed.	Comment noted. This discussion does not belong in the uncertainty section. If unacceptable risks are identified during monitoring, an approach to address them will be developed at that time. Any remediation will necessarily be based on the type

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				of contamination, the receptor and the habitat impacted.
59. (EPA#35)	7.5.6	75	The discussion of uncertainties in the first paragraph should be moved to the uncertainty section.	Text was revised as requested.
60. (EPA# 36)	8.	77.	Last paragraph: Was there a RCRA closure for NODA?	The following statement has been added: "As discussed in Section 2.4.2.4, the Hazardous Waste Permitting Bureau (HWPB) of the IDEQ terminated the Interim Status for the NODA, EPA ID No. ID 4890008952, with the understanding that the CERCLA program would perform the final evaluation of the site in accordance with the FFA/CO and would include any requisite ARAR and HWMA reviews prior to issuance of the final Record of Decision."
61. (EPA# 37)	8.4	88.	I recommend replacing "inhibit" with "prevent" or "reduce".	Term was changed to prevent.
62. (EPA# 38)	8.5.3	88	This section needs to address potential RCRA issues with detonation at the MDA.	Text revised to address the RCRA issues with detonation of explosives and UXO at the MDA.
63. (EPA# 39)	8.4	88.	2nd paragraph: The second sentence is incomplete.	Text was corrected.
64. (EPA# 40)	Table 9	89.	General comment: The use of "not applicable" (e.g. compliance with ARARs, statutory	Text was corrected. When ARARs would be triggered only when an action is taken, then NA is still used in the No Action Alternative.

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			preference for treatment, etc.) is not correct. The criterion is applicable, the alternative just doesn't meet it. This is problem throughout the tables.	
65. (EPA# 41)	Table 9	91.	Cost: Costs shown should include Capital expense, O&M, the discount rate, and the number of years discounted.	The cost information was revised as directed.
66. (EPA# 42)	8.6	92.	Language regarding preferred alternatives appears to have been carried over from the RI/FS. This is the ROD, we ARE making a decision.	Text was revised; the 3rd sentence was deleted.
67. (EPA# 43)	8.6.9	94.	Community Acceptance: This section should reflect the significant comments by the CAB and changes made to the selected remedy as a consequence, and also mention the 30-day extension for comments.	Text was revised to include the public concerns and identify the 30-day extension for comments.
68. (EPA# 44)	8.7	94-95	Bullets: See comments for p. v.	Text revised as described in response to comment # 22.
69. (EPA# 45)	8.7	94.	Selected Remedy for the Ordnance Areas: The selected remedy should be described in terms of "technology type" and identified by alternative number. The details listed in this section as specified remedial activities should be described as types of actions that may be taken as appropriate, rather than actions that "shall" be performed.	Text was modified as requested.

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70. (EPA# 46)	8.7	94.	5th bullet: More explanation of relative risk determinations is needed to show how this will work.	Comment noted. The relative risks however have not yet been determined. Data from post-ROD surveys are needed to determine UXO types, amount, accessibility, etc. so that risk determinations can be made.
71. (EPA# 47)	8.7	95.	3rd bullet: The specific goals of the institutional controls should be described.	Text was changed to include goals of the ICs.
72. (EPA# 48)	8.7	95.	First paragraph following bullets: This discussion needs to reflect previous comments regarding onsite/offsite definitions. In addition, it should address RCRA issues and ARARs for UXO detonation.	The on-site/off-site has been changed to on the INEEL and off the INEEL. The RCRA issues and ARARs were added to the text.
73. (EPA# 49)	8.7.1	95.	Cost: I recommend costing the remedy without the helicopter survey.	Comment noted. However, an air borne method is presently the only cost effective means to survey very large land areas and the areas at the INEEL that may contain UXO is extremely large. The test was revised to indicate costs for remediation can be reduced by implementing the remedy in phases and postponing a large-scale UXO survey.
74. (EPA# 50)	Table 10	96.	321K for deed restriction reviews? This does not appear in the remedy description. Are deed restrictions even an option? Define "G&A and PIF".	Cost for deed restriction reviews was deleted from the estimate. G&A is spelled out as General and Administrative and PIF was deleted.
75. (EPA# 51)	8.7.2	97.	The last paragraph should describe the goals/performance standards for controls.	Text was revised to include the goals.

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76. (EPA# 52)	8.8.2	97	Replace "The evaluation of Alternative 3..." with "The ARARs and TBCs for the selected remedy...". In the last sentence, replace "alternative is capable of complying..." with "selected remedy will comply...". This section should describe in more detail how the use of the MDA meets UXO and RCRA ARARs.	Text was revised as suggested and to explain how use of the MDA meets ARARs.
77. (EPA# 53)	8.8.5	100.	Preference for Treatment: This section needs to be revised to reflect EPA guidance on principal threat and low level threat wastes (Superfund Publication 9380.3-06FS, November 1991). The statutory preference is for treatment of principal threat wastes (not "preference for treatment as a principal element of the remedy"). Where treatment is to be performed as part of the remedy, it is reasonable to take credit for that as treatment of principal threat waste.	Comment noted. The text in the ROD is from the most current EPA guide, as explained in response to comment #31.
78. (EPA# 54)	9.1.3.1	105.	First paragraph: What is the medium/pathway of concern for the TNT risk?	Comment incorporated. No one pathway presents a risk greater than 1E-04 alone, but when the ingestion of homegrown produce pathway (6E-05) and the dermal absorption of soil pathway (5E-05) are combined (exposure pathways presenting the highest risk) then the total risk is 1E-04. The mention of both of these pathways was added to this section.
79. (EPA# 55)	9.2.3.2	107.	Some additional explanation is required here. It appears as if ecological risk were driving the remedy.	Comment noted. For human health, the hazard index (10) for the noncarcinogenic COC (TNT) is the driver for clean up at this site. See section

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				9.2.3.1
80. (EPA# 56)	Table 15	107.	1,3 dinitrobenzene shows only 1 hit but has both a minimum and maximum value.	Comment incorporated. A footnote was added to this table stating that, "although the minimum concentration was an non-detect, this value was used in determining the exposure point concentration for this site (per EPA guidance on using ½ of non-detects for determining the 95% UCL). The 95% UCL exceeded the maximum concentration at this site and the maximum value was there for defaulted as the EPC.
81. (EPA# 57)	9.3.3.1	109.	What pathways drive the TNT risks described?	Comment incorporated. The exposure pathways of concern were ingestion of soil, groundwater, and homegrown produce.
82. (EPA# 58)	9.4.3.1	111.	What pathways drive the TNT risks described?	Comment incorporated. The exposure pathways of concern were ingestion of soil, groundwater, and homegrown produce.
83. (EPA# 59)	9.5.1	112.	Was clearance done to 12m or 4 feet?	12m was changed to 1.2 m
84. (EPA# 60)	9.5.3	113.	This section should include the risks for the chemicals described.	Comment noted. Risk numbers were only presented for the final COCs. Many of the contaminants presented in this list did not contribute significantly to the total risk or hazard index. Please see the OU 10-04 RI/FS for these

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				numbers.
85. (EPA# 61)	9.5.3.1	114.	What is the medium/pathway of concern for RDX?	Comment incorporated. At NODA, the primary pathways of concern were ingestion of groundwater (1E-02) and ingestion of homegrown produce (2E-03). The text "… through ingestion of groundwater…" was added to the second paragraph following Table 20.
86. (EPA# 62)	9.6	115.	First bullet: Why not establish this earlier in the chapter?	Comment incorporated. This sentence was also placed in Section 9, following the sentence "…extent of contamination, and baseline risk estimates."
87. (EPA# 63)	9.6	115.	Remediation Objectives for TNT/RDX: Since these sites also have UXO risks, the remedial objectives should include those for UXO as well as for TNT/RDX contamination.	The text was revised to clarify remediation objectives for UXO and TNT/RDX. The TNT/RDX sites are within the UXO areas.
88. (EPA# 64)	Table 22	116.	Footnote "a" needs explanation in the text. What are the bases for the Region 9 PRGs?	Comment incorporated. An explanation was added to the footnote better explaining why the Region 9 PRG was chosen as the soil concentration remediation goal.
89. (EPA# 65)	9.6	115.	This section should include the following language: "The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.	Text was added and the principal threat wastes identified.

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			Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment." The section should also address principal threat wastes.	
90. (EPA# 66)	9.7.3.2	119.	The distinction between CERCLA offsite/onsite and INEEL offsite/onsite needs to be explained. CERCLA has a specific view of what constitutes offsite and onsite. Where there are two or more non-contiguous facilities that are reasonable related on the basis of geography, or on the basis of the threat, or potential threat to the public health or welfare or the environment, CERCLA section 104(d)(4) and the preamble to the NCP (55 FR 8690) allows EPA to treat these related sites as one facility for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. Will all waste stay within the area of contamination?	As appropriate throughout the ROD the terms on-site and off-site were replaced with on the INEEL and off the INEEL. All waste is to be removed from the areas of contamination.
91. (EPA# 67)	Table 24	122.	Alternatives that include treatment should take credit for treatment of principal threat wastes. The "not applicable" characterizations should be changed for these cases.	Text was corrected as recommended.
92. (EPA# 68)	Table 24	123.	MDA detonation impacts should be included as environmental impacts.	Detonations at the MDA are not expected to have environmental impacts.
93. (EPA# 69)	Table 24	124.	Cost: Costs shown should include Capital expense, O&M, the discount rate, and the number of years discounted.	Revisions made as requested.

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94. (EPA# 70)	9.8.6	125.	The explanation of the need for a temporary building is weak. Other sites have had good results without the need for a building.	Text was revised to explain the purpose of the temporary building, which is to control gaseous emissions generated during composting, and to maintain optimal conditions for composting. Most composting of TNT/RDX contaminated soils is actually done in a structure.
95. (EPA# 71)	9.8.9	126.	Community Acceptance: This section should reflect the significant comments by the CAB and changes made to the selected remedy as a consequence.	The public comments and concerns were added to this section.
96. (EPA# 72)	9.9	127.	5th bullet: Clarify whether acceptable levels are for unrestricted use.	The text was clarified.
97. (EPA# 73)	9.9	127.	6th bullet: Specify goals of the institutional controls.	The goals were added.
98. (EPA# 74)	9.9	127.	Last paragraph: Clarify this paragraph with regard to CERCLA onsite/offsite definitions.	The on-site/off-site has been changed to on the INEEL and off the INEEL.
99. (EPA# 75)	Table 25	128.	321K for deed restriction reviews? Define "G&A and PIF"	Cost for deed restriction reviews was deleted from the estimate. G&A is spelled out as General and Administrative and PIF was deleted.
100. (EPA# 76)	9.9.2	129.	In the last sentence, land use restrictions WILL BE (vs may be) specified...	Text was corrected.

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101. (EPA# 77)	10.4	137.	The first sentence references a nonexistent Section 10.2.1.	Text was corrected.
102. (EPA# 78)	10.6.5	144.	This section needs to address alternative 3A.	Text was revised to include alternative 3A.
103. (EPA# 79)	10.6.9	145	I recommend including a separate section distinct from the 9 criteria to address "tribal concerns". It should include a description of the input and comments from the Tribe as well as a summary of their concerns.	Comment noted. The format of the ROD is consistent with the current EPA guide.
104. (EPA# 80)	10.6.9	145.	This section should describe the CAB comments.	The CAB and public comments and concerns were added.
105. (EPA# 81)	Table 31	147.	See comments on previous cost estimate summary tables.	Text was corrected.
106. (EPA# 82)	10.8.6	152	See previous comments regarding statutory vs ROD-level reviews.	Text was corrected. See response to comment #29.
107. (EPA# 83)	11.1	153.	The second paragraph should be stated in terms of a no action with monitoring decision.	Text was revised as requested
108. (EPA# 84)	11.	153.	There should be a section added here to described the phased and prioritized approach to implementation of the selected remedies. The response to the CAB provides a good starting point and framework for describing this approach: In response to this comment and similar comments received from other members of the public, DOE-ID, the State of Idaho, and EPA are evaluating the source-by-source prioritization of cleanup at the INEEL.	The ROD has been revised to explain that a phased approach will be developed to remediate the UXO and TNT/RDX sites in response to public concerns about the cost of implementing the selected remedy, which will reduce cost.

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			Under the assumption that the federal government will maintain control of the site until at least 2095, it is prudent to prioritize both the risks and scenarios presented by the OU 10-04 sites. We are evaluating a phased approach to remediation at the OU 10-04 source areas. Many of the sites are only a risk if land use assumptions change. For these source areas, Institutional Controls may be fully adequate in the near term. Other sites, which may present a worker risk or impede facility siting on INEEL will likely require a higher priority. Delaying removal activities through a prioritized phased approach will allow us to target resources where they are needed the most. Hopefully, this will result in an overall cost saving.	The phases will be determined and described during remedial design.
109. (EPA# 85)	11.1	153.	The first paragraph states: "any site with 100 year future residential scenario with an estimated risk of 1E-06 ... or greater was assumed to pose a current residential risk of 1E-4". This does not make sense for radionuclide unless we are dealing with a radionuclide with a 15 year half-life or less. It makes even less sense for nonradioactive contaminants which would not be expected to decay over the 100 years. For nonradionuclides it makes sense to assume that if the 100 year risk is less than 1E-4, then so is current risk. For radionuclides which are less than 1E-4 risk in 100 years, simple decay correction calculations will show whether or not the risks would be above 1E-4 for current residential. Only in those cases would institutional controls be needed. If current risks are less than 1E-4, they are acceptable. In the second paragraph, the second sentence reads "the other eight sites", implying that there are nine limited action sites, when in fact there are only seven. In the third sentence, current residential risks greater than 1E-6 are incorrectly cited as the basis for limited actions.	Text was revised to clarify the reasons for maintaining institutional controls at sites with risks between E-06 and E-04. For the INEEL, it was determined that removal/treatment actions to reduce risk will not be performed at sites where the risk is less than E-04, and sites with risk between E-04 and E-06 will be maintained under institutional control. If the risk is from radioactivity, then ICs will be required until natural decay reduces risk to less than E-06. "Eight" was changed to "six."

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			If current residential risks are below 1E-4, no actions are required.	
110. (EPA# 86)	11.1	153.	This section needs a discussion of the CERCLA 9 criteria as applied to selection of institutional controls. In the last paragraph, discussion of land use restrictions should also include reference to restrictive easements, covenants or other measures. In the last sentence of the same paragraph, substitute "document" for "indicate".	The institutional control sites were not evaluated in the feasibility study. Hence evaluation to the criteria was not performed. Rather it is a policy decision to maintain institutional controls on sites with risk between E-04 and E-06. The text was corrected as suggested.
111. (EPA# 87)	11.2	154.	This section should be modified to cover site-wide institutional controls. Provisions should be consistent with the May 3 199 Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities. Example: Facility-wide Institutional Control Requirements The XYZ Facility will develop a comprehensive facility-wide approach for establishing, implementing, enforcing, and monitoring ICs at the facility. This approach will include a comprehensive permitting system and other installation policies and orders. This comprehensive facility-wide approach will: i. Include a comprehensive facility-wide list of all areas or locations covered by any and all decision documents at the facility that have or should have ICs for protection of human health or the environment. The information on this list will include, at a minimum, the location of the area, the objectives of the restriction or control, the time frame that the restrictions apply, the tools and procedures the	The text was revised to explain an INEEL-wide institutional control plan will be developed and implemented. The example provided was used in the ROD.

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			facility will use to implement the restrictions or controls and to evaluate the effectiveness of these restrictions or controls; ii. Cover, and legally bind where appropriate, all entities and persons, including, but not limited to, employees, contractors, lessees, agents, licensees, residents of the base, and invitees. In areas where the facility is aware of routine trespassing, trespassers must also be covered; iii. Cover all activities, and reasonably anticipated future activities, including, but not limited to, any future soil disturbance, routine and non-routine utility work, well placement and drilling, recreational activities, groundwater withdrawals, paving, troop training activities, construction, renovation work on structures or other activities; iv. Include a tracking mechanism that identifies all land areas under restriction or control; v. Include a process to promptly notify both EPA and the state prior to any anticipated change in land use designation, restriction, land users or activity for any IC required by a decision document. Within six months of signature of this ESD, the XYZ Facility will submit to EPA and the state a monitoring report on the status of their ICs. The facility will then submit an updated IC monitoring report to EPA and the state at least annually thereafter. After the facility's comprehensive facility-wide approach is well established and the facility has demonstrated its effectiveness, the frequency of future monitoring reports may be modified subject to approval by EPA and the state. The IC monitoring report, at a minimum, must contain:	

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			(i) a description of how the facility is meeting the facility-wide IC requirements; (ii) a description of how the facility is meeting the OU-specific objectives, including results of visual field inspections of all areas subject to OU- specific restrictions; (iii) an evaluation of whether or not all the OU-specific and facility-wide IC requirements are being met; (iv) a description of any deficiencies and what efforts or measures have been or will be taken to correct problems. EPA and state review of the IC monitoring report will follow existing procedures for agency review of documents. The XYZ Facility will notify EPA and the state immediately upon discovery of any activity that is inconsistent with the OU-specific IC objectives for the site, or of any change in the land use or land use designation of a site addressed under item A(I). The facility will work together with EPA and the state to determine a plan of action to rectify the situation, except in the case where the facility believes the activity creates an emergency situation, the facility can respond to the emergency immediately upon notification to EPA and the state and need not wait for EPA or state input to determine a plan of action. The facility will also identify what went wrong with the IC process, evaluate how to correct the process to avoid future problems, and implement these changes after consulting with EPA and the state. The XYZ Facility will identify a point of contact for	

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			implementing, maintaining, and monitoring institutional controls. The XYZ Facility will use its best efforts to request and obtain funding to institute and maintain institutional controls. The XYZ Facility will notify EPA and the state at least six (6) months prior to any transfer, sale or lease of any property subject to ICs required by an EPA decision document so that EPA and the state can be involved in discussions to ensure that appropriate provisions are included in the conveyance documents to maintain effective ICs. If it is not possible for the facility to notify EPA and the state at least six months prior to any transfer, sale or lease, then the facility will notify EPA and the state as soon as possible but no later than 60 days prior to the transfer, sale or lease of any property subject to ICs. The XYZ Facility will not delete or terminate any IC unless EPA and the state have concurred in the deletion or termination.	
112. (EPA# 88)	11.2	154.	In addition, The ROD must be explicit regarding the goals and performance objectives of institutional controls. Example: OU B ROD, June 30, 1996 East Site Geographic location where ICs are required: The IC objectives listed below apply to the site of the East Landfill, which is roughly bounded by Deep Creek on the east, the facility boundary fence on the north, G Street on the south, and R Avenue on the west. Objectives of the restriction:	The specific goals for the UXO areas and the TNT/RDX sites are included in the remedy description. The goals for the IC sites are listed in Tables 33 and 34. Further details will be developed during preparation of the IC plan.

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			Prevent any disturbance to the cap, except as necessary for authorized O&M cap maintenance activities • Prevent any current or future land uses that could jeopardize the integrity or life of the cap. • Notify the state and EPA prior to any development or redevelopment of the landfill site. The object of this notification is to ensure that the agencies concur that the development has been designed to retain the integrity of, and to avoid damage to, the cap. • Prevent any use of the ground water under the landfill except for monitoring, unless approved by EPA and the state • Ensure that these restrictions apply now and in the future, even if the U.S. Department of BCD no longer has control of the property • Ensure that these restrictions will run with the land if the property is no longer federally owned.	
113. (EPA# 89)		155.	Correct "preliminary recommendation". This is a ROD and we are making decisions regarding institutional controls. In addition, the use of the word "recommendation" in the text sections of that column are not appropriate. For instance, in the first item dealing with BORAX-01, the last sentence should be " Appropriate land-use restrictions will accompany any land transfer".	Text was changed to "Goals of the Institutional Controls"
114. (EPA#90)	Table 33	157.	Why are institutional controls needed on EBR-1 tank?	The risk from residual contamination is estimated to be greater than 1E-06.

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115. (EPA# 91)	Table 34	173.	Throughout this table, the CERCLA reference should be 120 vs 120(h) for current operations. The section 120 reference is followed by a superscript "b", which should be "c". More specificity is needed in describing land restrictions. What about controls on excavations? What about limits on disposal of excavated material?	Text was corrected. The institutional control plan will define in more detail the specific land use restrictions for each site.
116. (EPA# 92)	11.2	184.	3rd paragraph after bullets: Replace "possible thereafter" with "DOE learns of the possible transfer".	Text changed as requested.
117. (EPA# 93)	13.	189	Refer to the EPA ROD guidance (EPA-540-R-98-031) p. 6-53 for this section. This section needs to include the changes made subsequent to CAB comments, and provide a rationale for those changes.	The section on Alternative 2 for the ordnance areas was deleted, as this does not pertain to the selected remedy. The text on the gun range was corrected to conform to guidance.
118. (EPA# 94)	13.	207.	Written Comments and Responses: The written responses should be reviewed and edited to ensure that they are both responsive to the comment made and recognize the commenter's concern. Tone matters. We need and welcome public comment. In responding, sometimes shorter is better, particularly when the information is available elsewhere.	The responses have been revised to be more responsive and considerate.
119. (EPA# 95)	Part I	iv-v.	Declaration. As noted in the general comments, the remedial action described here	Comment noted. The phased approach to remediation will allow for more options in actually implementing the remedy. These details will be

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			for UXO sites reads more like a generic scope of work for an investigation and clearance. Given the lack of knowledge concerning the nature and extent of UXO contamination at the sites, developing an observational approach style remedial action with specificity concerning on the ground requirements and cleanup objectives may be more appropriate.	defined during remedial design.
120. (EPA# 96)	Part I	v.	Declaration. Bullet # 6. Using Magnetometers for sweeping an area will pick up signals from all ferrous items, whether they are UXO related or not. Based on the results of a geophysical proveout, the use of EM equipment may be preferable.	Since various detectors are being considered, the term magnetometer was deleted and only geophysical surveys is stated.
121. (EPA# 97)	Part I	v.	Declaration. Last bullet. The land use objectives should be determined first, then excavation depths, and finally institutional controls in the event clearance depths do not support unrestricted use. As it is written now, it would likely require a ROD amendment to establish IC's.	This section was revised to emphasize implementation and maintenance of ICs until the UXO hazard is removed or reduced to acceptable levels.
122. (EPA# 98)	Part I	vi.	Declaration. Bullets 4 and 6. See general comments on composting of soils.	More discussion on composting was added to the description of alternatives. See also response to comment #11.
123. (EPA# 99)	Part I	ix.	Declaration. 2nd paragraph. It is not clear that the selected remedy for TNT and RDX soils satisfies the CERCLA preference for treatment. The contaminated soils would be disposed of "as is" in an non-hazardous material landfill. This is not treatment.	Most of the TNT and RDX contamination is in the form of solid fragments. Detonation of the fragments is considered treatment.

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124. (EPA# 100)	7.4	59.	2nd paragraph. The text states that.."At the NPG, Arco High Altitude Bombing Range, and the Twin Buttes Bombing Range surveys will be performed to detect and possibly remove UXO." The text needs to be more affirmative concerning clearance of UXO. UXO that is identified should be removed.	Since this section addresses risk assessment, reference to types of remediation to be performed was deleted.
125. (EPA# 101)	7.4 & Table 7	60.	See general comment # 13 above. Also, The Naval Proving Ground should be listed in a bullet on page 60 in a manner similar to the Arco High Altitude Bombing Range, and the Twin Buttes Bombing Range for consistency.	Text was corrected.
126. (EPA# 102)	Table 7	62.	Footnote "a" This footnote states that UXO encounters are relatively common. However on page 87, section 8.3.1, the opposite is stated. This should be reviewed for consistency.	This was changed to just UXO encounters occur.
127. (EPA# 103)	8.1	79.	1st paragraph. The "EPA 2001" reference is not listed in Chapter 14. The most current EPA reference with a definition for "clearance" is the Handbook on the Management of Ordnance and Explosives at Closed, Transferring, and Transferred Ranges and Other Sites. EPA 505-B-01-001. Feb 2002. The definition of clearance in that document is as follows. "The removal of UXO from the surface or subsurface at active and inactive ranges".	Text was corrected as requested.

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128. (EPA# 104)	8.0	77-100	Chapter 8. This Chapter needs clarification regarding categorization and evaluation of UXO sites. It is not clear why only six areas are being addressed under this ROD. The text in this chapter indicates that 29 ordnance areas within NPG were identified in the 2001 RI/FS, and that since that time seven more have been identified. If there is sufficient data to support a no further action required for those sites, it should be documented in the administrative record and supported in this ROD. However, at other locations in the ROD, (i.e. Chapter 11) it is stated that many of these areas may still contain UXO. Page 79 of the text in Section 8.1.1 states that the extent of potential UXO outside of these areas (the six sites) has not been determined.	Text was revised to make it clear that UXO detection and removal is for all areas where UXO is known and suspected, and to better explain that within the large UXO areas there are specific high-impact areas that also have soil contamination from TNT and RDX. No area with potential UXO present can at this time be considered no further action.
129. (EPA# 105)	8.1.2	85.	Were other ordnance besides M38A2 practice bombs deployed at the Arco High Altitude Bombing Range ? The text states that these were the "primary" weapons deployed. The type and number of weapons systems used can have a significant affect on the design and implementation of site characterization efforts and clearance efforts.	Comment noted. All types of munitions used at the INEEL are not known since the records on ordnance usage is incomplete.
130. (EPA# 106)	8.3.1	87.	Agree with the rationale and discussion on why no quantitative risk assessment was performed for explosive safety. At this time there is no consensus on quantitative approaches. Therefore qualitative approaches are being relied on for explosive safety hazard management approaches.	Comment noted.
131. (EPA# 107)	8.4	88.	The language here is somewhat awkward. It looks like the ROD is trying to make the distinction between chemical exposure risk	Text was clarified to indicate the BRA did not evaluate UXO at the ordnance areas.

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			assessment and explosive safety hazard assessments. It gets somewhat tied up in the second paragraph, and makes an inaccurate statement that the UXO sites were excluded from the BRA. This is true for explosive safety hazards, but not for risks associated with chemical exposure. Recommend re-writing for clarity.	
132. (EPA# 108)	Table 9	90.	First Line. Editorial, "ARAR" should be replaced with "TBC".	Text was corrected.
133. (EPA# 109)	8.7	94-95	Selected Remedy for Ordnance Areas. See general comment # 14 concerning aerial surveys. Other concerns in this section include the following two comments.	Comment noted. See response to comment #14.
134. (EPA# 110)	8.7	95.	The text discusses remediation of soil if it exceeds 1x10E-4. However, no numerical cleanup level is provided in the ROD. There should be a cleanup level(s) established in the RI/FS documents and agreed to in the ROD.	To date, detonations of UXO at the MDA have not resulted in any chemical soil contamination. It is also expected that future detonations will also not result in soil contamination. Since all types of UXO that may be present on the INEEL are not known, consequently it is not known if detonation of other types of UXO not yet encountered will leave residual chemical contamination in the soil, nor what that contamination would be from. Since chemical contamination can't be defined, a risk based concentration goal can not be defined.
135. (EPA# 111)	8.7.1	95.	Cost. The $16.5M cost estimate does not appear to be realistic. A number of areas of concern are readily apparent with this estimate. First it is	Information on the cost for performing the surveys was obtained from Fugro and from researchers at the Oak Ridge National Laboratory who are developing and deploying helicopter-mounted

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			stated that aerial extent of the 3 Ordnance Areas is 208,192 acres. It is highly unlikely that the entire areas have been impacted by ordnance and may contain UXO. Assuming that the areas were completed impacted, this would work out to a unit cost of approximately $80/acre for characterization and clearance. This does not reflect current costs for these kind of activities, which are more typically in the thousands of dollars per acre. Secondly, the cost breakout on page 96, indicates that of the total, $8,249,000 is the estimated cost for the actual site work, the rest is documents, support activities, contingency, etc. This now yields a per acre production rate of approximate $40/acre. Additional detail on the basis for the estimates should be provided.	UXO detection and mapping systems. Fugro is a commercial company that performs airborne surveys for UXO and other geophysical mapping. They have a proven UXO aerial system, which was able to meet Army Corps of Engineers criteria for aerial UXO detection and mapping. The researches at ORNL are making improvements on the Fugro system. Use of an airborne system for large areas is very cost-effect compared to hand-held or towed systems, since 300 to 500 acres can be surveyed in one day compared to 50 acres/day for a towed system and a few acres/day with hand-held detectors. Details on the cost estimate are provided in the feasibility study.
136. (EPA# 112)	8.7.2	97.	First sentence. Good statement of objective for the remedial action.	Comment noted.
137. (EPA# 113)	9.1.1	101.	1st paragraph. The text discusses a cleanup level of 44 ppm for TNT in soils under a 1993 interim action. Is that cleanup level applicable for this ROD ? If it is, the supporting rational should be in the ROD.	This cleanup level is not applicable to this ROD.
138. (EPA# 114)	Table 23	117.	The contaminated soil volumes shown in the table do not match any of the volumes listed in the preceding text for each area. This should be reviewed for consistency.	The TNT/RDX soil contamination exists in small, very widely spaced areas. These areas are generally less than 2 ft in diameter. The preferred method of soil removal is to hand excavate just the contaminated soil and not any of the adjacent

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				uncontaminated soil. This will minimize the amount of soil to be removed and disposed, hence the volume is small compared to the size of the sites.
139. (EPA# 115)	9.7.2	117.	Last paragraph. The text states that verification sampling will be conducted to ensure final cleanup goals are met. However, no cleanup goals are provided. See previous comments.	The cleanup goals are listed in Table 22.
140. (EPA# 116)	Table 25	128.	The "Operations Costs" line in the cost estimate summary indicates that the unit cost for excavation and transportation, plus disposal costs at the treatment facility are $2,027,000 for an estimated 800 cubic yards. This comes out to a unit cost of $2533 per cubic yard. This appears to be substantially higher than typical costs incurred at other facilities. If this is considered an accurate cost, presumably most of it is associated with transportation and tipping fees. If this is the case, then onsite composting should be a more cost- effective alternative and the cost assumption for composting may need to be revisited.	The cost for removing and disposing the TNT/RDX contaminated soil and detonating the TNT/RDX fragments is $220,000, which is under capital cost, remedial action. The operations cost are for 100 years of monitoring and institutional controls.
141. (EPA# 117)	11.	153-186	Chapter 11. It is not clear why this is a separate chapter. Institutional controls could be presented as an alternative along with the other alternatives for the sites in the previous chapters and be linked to performance of the other alternatives. It is also not clear why Ecological Monitoring is presented as a remedial action. Are there potential adverse ecological risks that will be monitored for abatement during and after the implementation of remedial actions?	The IC sites in this section were not evaluated in the feasibility study. See response to comment #109. The ROD has been revised to indicate for ecological receptors no action with monitoring will be performed.