

CORRES CONTROL
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ACTION

| DIST | LTR | ENC |
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| BORGMAN, K A | | |
| BUHL, T R | | |
| CARD, R G | | |
| JEAN, C | | |
| VANS, B L | | |
| FENN, T M | | |
| FERRERA, D W | | |
| GILLISON, W R | | |
| GRANT, B A | X | X |
| HERRING, C L | | |
| HILL, J A | | |
| HUEMAN, T P | | |
| KELL, R E | | |
| KELLY, G M | | |
| MANI, V | | |
| MARTINEZ, L A | | |
| MCANALLY, J L | | |
| MCGOVERN, L J | | |
| McKAY, R | | |
| McKIBBIN, J G | | |
| OKEY, R | | |
| O'BRIEN, G D | | |
| PANGERSIS, P A | | |
| RICHEY, C L | | |
| SANDLIN, N B | | |
| SHUMWAY, W K | | |
| STAGG, R | | |
| STEELMAN, M | | |
| TUOR, N R | | |
| TURNER, K A | | |
| VOORHEIS, G M | | |
| WALLER, C A | | |
| WEDDLE, T | X | X |
| WHAHN, S | X | X |

ates Government

memorandum

OCT 3 1995

EP KM 14160

Department of Energy Environmental Guidance Division Comments on the Phase I
Interim Measure/Interim Remedial Action Decision Document

Steven Hahn
Environmental Restoration and Waste Management
Kaiser-Hill Company

Attached are the Department of Energy (DOE) Environmental Guidance Division (EGD) comments on the Operable Unit (OU) 7 Interim Measure/Interim Remedial Action (IM/IRA) decision document.

Please note that the EGD comments entitled, "RCRA/CERCLA Issues" challenge the regulatory approach described in the IM/IRA from a RCRA-based perspective. Environmental Programs understands that the regulatory approach presented in the IM/IRA was developed in close cooperation with the Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE), and represents an accelerated regulatory pathway to OU 7 remediation which EPA and CDPHE representatives verbally endorse under the auspices of the Interagency Agreement. Environmental Programs is seeking comments from DOE counsel on the IM/IRA regarding these legal issues, and will forward any legal opinions to you.

These comments are provided for your consideration, and are not intended to impact the cost, schedule, or scope of the contract. If you believe there will be such an impact, you should immediately notify the COR and the Contracting Officer and not implement any action arising from these comments.

If you have any questions or comments, please call me at extension 2184

Kurt Muenchow
OU 7 Project Advocate

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| CORRES CONTROL | X | X |
| ADMN RECORD/080 | | |
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Attachment

Reviewed for Addressee
Corres Control RFP

10/14/95
DATE BY

Ref Ltr #

DOE ORDER # 5480-19

Post-It™ brand fax transmittal memo 7671 # of pages 16

| | | | |
|-------|------------------------|---------|------------|
| To | Laurie Peterson-Wagner | From | Steve Hahn |
| Co. | RMRS | Co. | KIT |
| Dept. | | Phone # | 9888 |
| Fax # | 8663 | Fax # | |

ADMIN RECCRD

Consolidated EGD Comments on the
Phase I IM/IRA Decision Document for Operable Unit 7
Present Landfill

RCRA/CERCLA Issues:

- 1 Section 1 3 1 Leachate Accelerated Action, Page 1-5. This section states that a passive seep collection and treatment system is proposed as an accelerated action to eliminate discharge of F039 RCRA-listed waste from the leachate seep

Assuming that the waste in question is actually groundwater contaminated with F039 multi-source leachate, the appropriate classification of the seep water is groundwater that contains F039 multi-source leachate. Classifying the seep in this manner will allow application of the contained-in policy and thus formal delisting may not be required. However, if listed waste constituents are present above the CDPHE conservative risk screening levels after treatment so that the contained-in levels cannot be met, then formal delisting of this waste would be required in order to remove it from hazardous waste regulatory control.

Because the Present Landfill is subject to interim status requirements, any wastes generated from closure of this unit must also be managed in a unit that is operating under interim status or in accordance with a RCRA permit. The IM/IRA Decision Document states that the seep will be treated pursuant to a PAM. However, it is not clear how the RCRA permitting issues associated with the treatment unit will be addressed. The fact that the regulators have approved the PAM does not eliminate RFFO's liability for treating hazardous waste without a permit when such waste is subject to RCRA requirements.

Finally, the IM/IRA Decision Document states that the treated seep water, designated as F039, will be discharged to the East Landfill Pond. The seep will remain a listed hazardous waste after treatment unless such waste is formally delisted or unless the seep water is actually groundwater containing F039, in which case the contained-in policy could be applied. Although the regulators may be open to the suggestion of performing an informal delisting, as discussed in "A Guide to Delisting RCRA Waste for Superfund Remedial Actions," dated September 1990, the fact remains that this waste that is being generated from a RCRA regulated unit and not as a result of a CERCLA remedial action. Therefore, from a RCRA regulatory perspective, the informal delisting approach is not allowed considering the site conditions at hand. RFFO should first consider applying the contained-in policy either prior to or after treatment to remove the contaminated water from hazardous waste regulatory control.

- 2 Page 2-2, General Comment This paragraph provides a discussion of the types of hazardous waste that were received at the Present Landfill

This discussion should be broadened to specifically identify the types of spent solvents and degreasing agents that were disposed in this unit and also specify whether such solvents were disposed as listed hazardous waste. The associated listed hazardous waste codes should also be specified. This information will be necessary for evaluation of the contained-in determination for the seep water or for delisting such waste.

- 3 Page 2-3, Section 2 1 2, Inactive Hazardous Waste Storage Area This section provides a discussion of IHSS 203, which is an inactive hazardous waste storage area

Although the data appears to indicate that there are no contaminants of concern above background for this unit, the unit must still undergo closure in accordance with RCRA regulations. Therefore, it is recommended that the closure of this unit be included in Section

eight of the IM/IRA Decision Document for OU7 and discuss how certification of closure and any other applicable closure requirements will be met

4 Section 2 5.1 This section discussed potential contaminants of concern Given the extent of investigation already performed on this unit, the contaminants of concern should be well defined and not referred to a "potential" contaminants of concern.

5 Section 3 3 1, Methodology to Determine if a Response Action is Necessary This section provides a methodology for determining whether the seep is appropriately designated as F039 multi-source leachate The following comments on this section are offered for your consideration

- For clarification purposes, reference to Subpart D in the first sentence should be replaced with 6 CCR 1007-3 §261, Subpart D.
- The designation of a waste as F039 is only relevant when leachate is generated from the land disposal of more than one listed hazardous waste identified at 6 CCR 1007-3 §261, Subpart D Because the presence of characteristic hazardous wastes (i.e., those identified at 6 CCR 1007-3 §261, Subpart C) are not relevant to the designation of a waste as F039, reference to Subpart C in the first sentence should be deleted.
- The fourth sentence states that it is necessary to determine whether leachate exists by application of the derived-from rule The presence of leachate is not determined by the derived-from rule Leachate is defined as "any liquid, including suspended components in the liquid that has percolated through or drained from hazardous waste" (§260 10) Therefore, I recommend rewriting this sentence to state the second step is to determine whether leachate is being generated at this unit. The third step would be to determine whether the leachate is being generated from the land disposal of more than one listed hazardous waste and thus is defined as multi-source leachate.
- The last sentence to the first paragraph in Section 3.3 1 states that when standards are met, the media no longer contains listed waste The document should specify that the standards which must be met in order to receive a contained-in determination are the conservative risk based screening levels of one in a million incremental cancer risk for carcinogens and a hazard index that does not exceed 1 0 for non-carcinogens. Alternatively, a comparison of available water quality standards is another option to determine if the media "contains" hazardous waste since the media of concern is contaminated groundwater For this comparison, CDPHE, applies the most stringent of the following: (1) protective Colorado water quality standards as set by the Colorado Water Quality Control Commission including, but not limited to, domestic use water supply standards or agricultural water supply standards, (2) Safe Drinking Water Act standards, and (3) Clean Water Act standards

6 Page 3-6, Section 3 3.4. Landfill Leachate at the Seep. This section provides a discussion of risk associated with the seep water based upon a comparison of preliminary remediation goals (PRGs)

Although this approach may be acceptable from a CERCLA perspective, in order to remove the seep from RCRA regulatory control a risk analysis using CDPHE's conservative screening criteria discussed above must be performed. This section should provide a discussion of whether the risk to human health from the leachate exceeds the risk level of one in a million incremental cancer risks for carcinogens and/or whether the hazard index for non-carcinogens exceeds 1.0 or the appropriate water quality standard discussed in comment number 5

7

Page 3-15, First Paragraph, Third Sentence This sentence states that on-site actions must comply only with the substantive requirements.

4

Although this is a true statement for actions initiated at a site that are subject solely to CERCLA authority, the unit in question has received hazardous waste after the effective date of RCRA regulations and, thus, is also subject to RCRA/CHWA requirements. This is clearly stated in the first sentence to Section 3.4. Therefore, this paragraph should specify that administrative requirements are applicable to the Present Landfill. If such administrative requirements were not applicable there would be no need for development of a closure plan (clearly an administrative requirement) as provided in Section Eight of the IM/IRA Decision Document.

8. General Comment. ARARs are either "applicable" or they are "relevant and appropriate" given the site conditions at hand. The discussion of ARARs should, thus, specify whether the requirements that have been identified are applicable to the action in question or whether they are relevant and appropriate. It is not acceptable to merely identify a requirement as an ARAR.

9. Page 3-23 Section 3.4.33 Delisting Requirements. This section discusses a proposed approach for delisting the landfill leachate.

As stated earlier in this document, RCRA/CHWA regulations are applicable to the unit in question. Therefore, the formal delisting requirements of 6 CCR 1007-3 §261.22 are also applicable requirements for delisting a RCRA hazardous waste. Reference to the informal delisting procedure developed by the EPA is not appropriate in this case because RCRA/CHWA regulations are applicable to this unit and not merely an ARAR. The last sentence in the second paragraph states that only the substantive requirements of delisting must be met. Unfortunately, the unit in question is subject to RCRA regulation and therefore, formal delisting of waste generated during the closure of that unit is required.

This document continually switches from the regulations that must be met for this action. In some sections RCRA/CHWA requirements are identified as being applicable and in other sections the document states that the administrative requirements of RCRA/CHWA do not need to be met. This inconsistency should be corrected.

10. Table 3-21, Potential Federal and State Action-Specific ARARs. The following comments are offered on this table for your consideration:

- Because this unit is a RCRA regulated unit, the table should identify the Resource Conservation and Recovery Act as an applicable requirement.
- The land disposal restrictions will be applicable to the seep water, leachate and any other waste that is removed from the unit in question and treated within a tank system or other hazardous waste management unit, irrespective of whether such treatment occurs entirely within the area of contamination. Placement of such waste within the area of contamination will constitute placement of a hazardous waste and trigger minimum technology requirements.
- The interim status standards of 6 CCR 1007-3 §265 are the applicable standards in this case and reference to §264 can be deleted.
- The Colorado Hazardous Waste Act regulations of 6 CCR 1007-3 should be cited as an applicable ARAR.

11. Figure 3-2 Number (2) on this table should be corrected to state "Determine if leachate exists." The determination of whether leachate exists has nothing to do with the derived-from rule and reference to the derived from rule should be deleted from this number. Leachate is defined at §260.10. The flow diagram for Item 2 does not require revision.

12 Section 4 2 3 Institutional Controls. The RCRA/CHWA regulations require an owner or operator of a hazardous waste landfill to conduct closure activities that extend way beyond the use of institutional controls. The use or suggestion of using only institutional controls for this unit does not satisfy RCRA/CHWA requirements and should be reflected in the text or this option should be deleted since it will not satisfy ARARs

13 Section 5 3 2 Alternative 1 No Action. This alternative should be screened from further evaluation during the screening of alternatives process. Clearly, an alternative that proposes no action will not meet the threshold criteria of protecting human health and the environment and compliance with ARARs. Therefore, there is no benefit in carrying this alternative into the detailed analysis. I recommend that this alternative be screened from further consideration at this point and further discussion in the detailed analysis can be eliminated.

14. Page 8-1, First Paragraph, Last Sentence. This sentence states that the specific closure requirements for interim status units are contained in Part 265, Subpart I through Q

A review of the interim status requirements concludes that there are no unit specific closure requirements for interim status container storage units. Therefore, this section of the IM/IRA Decision Document should be corrected to delete reference to Subpart I for interim status container storage units

15 Page 8-3, Second Paragraph. This section states that the landfill leachate is F039 multi-source leachate that is contained-in groundwater, is non-hazardous and does not pose a threat to human health or the environment

Environmental media contaminated with a listed hazardous waste may be removed from regulatory control if the conservative screening levels established by CDPHE are met. It is not clear from reading this section if RFFO intends to attempt to make a contained-in determination for the landfill leachate. If so, reference to delisting should be deleted. If the groundwater contains F039 above the conservative CDPHE screening levels and, thus, the need for delisting is justified, reference to language stating that the leachate does not pose a threat should be deleted. The reason for this is because CDPHE would view any such media that contains one or more listed hazardous wastes to pose a threat

16. Section 8 1 8 Emergency Response. This section provides a description of the emergency response capabilities for the Present Landfill

All interim status units and units that are subject to interim status are required to comply with §265 standards, including emergency preparedness. However, this information is not required to be included in the closure plan. Therefore, the provided information is superfluous and should be deleted.

17. Section 8 0 General Comment. In an earlier section of this document, a statement was made indicating that OU7 included a hazardous waste container storage unit. A closure plan should be provided for that unit or a discussion should be provided discussing when that unit will undergo closure.

18 Section 8 2 3 2 Point of Compliance. This section states that post-closure groundwater monitoring requirements for this unit are relevant and appropriate to interim status facilities such as the Present Landfill

Groundwater monitoring requirements are applicable to all RCRA regulated land disposal units, such as the Present Landfill, and must be conducted in order to satisfy the post-closure care requirements. 6 CCR 1007-3 §265.310(b)(3) states that after closure of a landfill, the owner or operator must maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subpart F. This section should be revised to correctly identify the groundwater monitoring requirements as applicable requirements.

Surface Water Issues:

1. There needs to be more information on what is proposed for the Landfill Pond Dam. Will it be breached and removed? Will it be maintained as is, or allowed to degrade?
2. Page 7-13, Section 7.3.6. There is not enough information on the disposition of the water from the Landfill Pond to other ponds. EG&G was supposed to drain as much water as possible from the Landfill Pond to the A-series ponds last summer, after concurrence was received from CDPHE. Since that did not happen, K-H or RMRS will need to be more detailed on their plans for transferring that water, and make those plans consistent with the pond operations plan now being refined.
3. Page 3-19, Section 3.4.2.1. Not all wetlands are waters of the U.S. Since the legal determination of whether the ponds on plant site are waters of the U.S. has not yet been decided either by policy from DOE-HQ, or by regulatory challenge, any reference to waters of the U.S. in this document needs to be removed.

Ecological Issues:

1

Phase I IM/IRA Decision Document for Operable Unit 7 Present Landfill
Draft July 27, 1995

Environmental Guidance Division - Ecological Programs

September 7, 1995

Page 1-2

Section 1.1 Purpose of Report

- ¶1, sentence 2 The sentence states, "The alternative addresses all source areas with risk levels greater than 1E-06 or a hazard index greater than one."

Text later in the report related to ecological risks indicates the alternative does not address all potential contaminants of concern (PCOCs) with a hazard index greater than one. Further, text contained within ¶1 seems to imply that the preferred alternative may have been selected on the basis of risk to human health generally excluding consideration of ecological risks.

Page 2-21

Section 2.4 Ecology

2.4.2 Wildlife

- ¶4 states, "The Rocky Flats site supports several species of reptiles and amphibians. Snake species include the bullsnake, yellow-bellied racer, western terrestrial garter snake, and prairie rattlesnake. Western painted turtles are also present. Amphibian species include the plains leopard frog, Woodhouse's toad, northern chorus frog, and tiger salamander."

Page 2-22

- ¶2, last sentence states, "Because the pond lacks predaceous fish such as bass, it may be a resource for breeding amphibians such as tiger salamanders, chorus frogs and bull frogs (Appendix D)

Amphibians and reptiles, concerning their important status within the food web and especially ~~considering the habitats they frequent and the food foraging guilds in which they participate, may be~~ more susceptible to adverse effects of cumulative environmental stressors than other classes of wildlife. Yet amphibians and reptiles were essentially ignored in the screening level risk assessment presented in Appendix D. This is inappropriate.

When conducting ecological risk assessments under CERCLA and/or for purposes of estimating potential injury to natural resources, the potentially most susceptible classes of wildlife must be evaluated. It was stated at an ER '95 presentation on Rocky Flats ecological risk assessments that State of Colorado water quality criteria were assumed to be protective of amphibians and reptiles and consequently these classes of wildlife need not be assessed. However, there are no Federal or State numeric criteria established to protect wildlife from residue concentrations of environmental contaminants in sediments, soils, and air.

Consequently, it is important these classes of wildlife and their sustaining/supporting habitats be considered in ecological risk assessments and ecological components associated with decision making for the Site.

A valid justification should be provided along with supporting documentation if such species representing important food foraging guilds are to be dismissed from ecological risk consideration.

- ¶3, last sentence states, "The Preble's meadow jumping mouse is a subspecies of the meadow jumping mouse and, therefore, receives protection under state law "

The apparent implication of the text of this sentence is inaccurate. The sentence implies the reason the Preble's mouse is protected under State law is because it is taxonomically related to the western meadow jumping mouse. The reason the Preble's mouse is protected under State of Colorado statutes is because it is classified by the Colorado Division of Wildlife and the State of Colorado Wildlife Commission as a non-game animal. As such, the Preble's mouse derives protection pursuant to CRS 33-1-106, "Authority to regulate taking, possession, and use of wildlife." State of Colorado, Division of Wildlife regulations for non-game wildlife are provided within Chapter 10, Articles 1-4 (#1004), item 6 Mammals

Section 3.3 Evaluation of Risks

Section 3.3.4 Landfill Leachate at the Seep

Page 3-7

- ¶¶3, 4, and 5. The last sentence in ¶3 states, "Baseline risk estimates were based on the conservative assumption that receptors spend all of their time at the East Landfill Pond "

It is agreed that this is a plausible assumption for screening risks in a qualitative manner.

Paragraph 4 states the Hazard Indices (HI) for various species including mallards, raccoons, and coyotes was greater than one ($HI > 1$).

Paragraph 5 states in part, "Sources of uncertainty for ecological risk are the actual bioavailability of PCOCs, frequency and duration of exposures, and importance of the East Landfill Pond as a habitat resource (Appendix D). Because it was assumed that mallards, raccoons, and coyotes spend all [emphasis added] their time at the pond and drink exclusively from the seep, risks were conservatively overestimated."

The implication for these species appears to be that the degree of conservatism with respect to exposure assumptions is so great the true risk that should be ascribed to each of these species is negligible.

The problem with this concept is that the ecological risk assessment as performed does not indicate how much time, or better yet how much exposure, for mallards, raccoons, and coyotes to landfill leachate is required to drive the HI to be greater than one. To do so would require data indicating how much time individuals within populations of each species could reasonably be expected to be exposed to landfill leachate from the seep.

Based on the constraints of the data used in this screen for chronic measurement endpoints influencing population assessment endpoints for each of the species in question, results in $HI < 1$ is beyond the scope of this screening level ecological risk assessment. It can be conclusively derived to establish that the risks to populations of each species are negligible. Precisely calculating under what conditions and circumstances, especially for chronic measurement endpoints influencing population assessment endpoints for each of the species in question, results in $HI < 1$ is beyond the scope of this screening level ecological risk assessment.

Although possible, the statement is that risks "were conservatively overestimated" cannot be conclusively ascertained based on the data presented. The text should be modified to more accurately represent the facts.

Section 3 3 5 Surface Water in the East Landfill Pond

- ¶1, sentence 3 The sentence states, "After contaminants from the leachate seep or from run-off have entered the East Landfill Pond, they may remain suspended, or dissolved in surface water, be discharged to groundwater, or be taken up by plants or aquatic life in wetland areas."

Based on the data presented it is also plausible that some of these PCOCs may become entrained in pond sediments where they would represent exposure to biota. The text should provide discussion of this fact.

Page 3-8

- last ¶ The first two sentences state, "Since the East Landfill Pond was constructed only 20 years ago, it is probably not a historically important component of the local ecosystem (Appendix D) The pond apparently does not contain fish or crayfish populations."

Twenty years approaches near half the amount of time the RFETS facility has been in existence. Twenty years is a substantive amount of time from the standpoint of influencing local aquatic and terrestrial ecology over the life of the industrial facility's existence. Fish and crayfish represent important parts of food webs in aquatic habitats, especially those aquatic habitats occurring in semi-xeric climates.

Since the East Landfill Pond has been in existence approximately two decades, for scientific purposes of performing this IM/IRA and given the costs incurred to taxpayers, should we not conclusively know by now if fish and crayfish populations exist in the East Landfill Pond?

Page 3-9

Section 3 3 6 Sediments in the East Landfill Pond

- ¶2, the last sentence states, "There is no risk [emphasis added] to human health from inhalation or incidental ingestion of, or dermal contact with sediment from the East Landfill Pond."

Risk can be ascribed to everything to which a living organism is exposed. It is impractical and inappropriate to state there is "no risk" to exposure of humans to landfill pond sediments. The text should be modified to reflect this fact.

Page 3-10

- ¶1, last sentence, states, "Although there is risk to terrestrial wildlife, it is unlikely that receptors spend all of their time at the East Landfill Pond, and therefore, the risk is conservatively overestimated."

It is agreed that wildlife receptors are unlikely to spend all their time at the East Landfill Pond. However, time spent does not necessarily directly or completely reflect exposure. From the data presented it is conjectural whether it can be conclusively stated that "the risk is conservatively overestimated." The statement in the text should be qualified to more accurately represent the qualifications of the data at hand.

Page 3-19

Section 3 4 Compliance With ARARs

Section 3 4 2 1 Wetlands Requirements

- ¶2, second sentence states, "Because the East Landfill Pond and pond margins have been designated as wetlands, they are considered waters of the United States under the CWA."

Not all wetlands are necessarily waters of the United States. For a wetland to be included as a water of the U.S. it must be hydrologically connected and tributary to other water bodies that, with certainty, are conclusively demonstrated to be waters of the U.S. Further, the Site is engaged in a number of regulatory issues concerning whether a number of on-site channels and/or impoundments legally qualify as waters of the U.S. Since these issues are legal in nature and are yet to be resolved it is strongly suggested that any text discussing on-site water bodies and their potential classification as waters of the U.S. be stricken from the document.

Page 7-1

Section 7 Recommended Alternative

Section 7.1 Description

- The description of the layers comprising the single-barrier cover apparently does not provide for a biota barrier layer to prevent mammals, primarily, from burrowing into the cap and disrupting its integrity. Is this an oversight?

Section 7.2 Design Requirements

Section 7.2.1 Compliance with RAOs

Page 7-4

- ¶2, states in part, "Wetlands mitigation is in progress. Acreage from the wetlands mitigation bank currently being developed in association with the Standley Lake Protection Project is used to mitigate the loss of wetland areas that fall under the landfill cover and injury to surrounding wetland areas." To date the wetland considering the problems DOE-RFFO is having establishing an actual wetlands bank, is appropriate, yet the draft document appears to place substantial reliance on the bank and implies that the bank is a done deal. A substantial re-drafting of text related to wetlands mitigation, especially considering the problems DOE-RFFO is having establishing an actual wetlands bank, is appropriate.

Page 7-5

Section 7.2.2.2 Location-Specific ARARs, Wetlands Assessment, Wetlands Effects

- This section states that placement of fill material to achieve design grades will degrade approximately 1.1 wetland acres. An additional assumption is made that 10% or 0.1 acre may be "injured" during placement of cover layers at the east end of the landfill. The paragraph states, "Because two-thirds of the East Landfill Pond and wetland areas remain in place after closure, the proposed activities have only negligible positive or negative, direct or indirect, short-term or long-term effects on the survival, quality, or natural and beneficial values of the wetlands."

In terms of quality aquatic quasi-deep water habitats on-site, the East Landfill Pond may be second in quality only to the Lindsey Ranch Pond in Rock Creek. Wetland habitats and the biota occupying those habitats along the perimeter of the pond, especially along the perimeter of the pond to the east end toward the impoundment, may be dependent on the presence of deeper water consistently occurring to drive and sustain ecological functions. No mention is made in the document about maintaining the quality of the overall aquatic, wetland, and terrestrial system now present. This may be a serious oversight and not easily mitigable. The document should address these concerns in detail.

Section 9 Environmental Assessment

Page 9-5

Section 9 2 Ecological Risk

- Although this section is labeled "Ecological Risk" it appears to also somewhat address potential injury to natural resources from physical damage or displacement due to construction/implementation of the preferred alternative. This treatment in the text begins to address the issue of natural resource damage assessment (NRDA) values integration relative to implementing the IM/IRA and this is an appropriate issue to be discussed in this document. The discussion of potential injury to natural resources resulting from implementation of the preferred alternative needs to be expanded and strengthened. Additionally, more detailed discussion of how potential injury to natural resources will be minimized and/or off-set by environmental restoration efforts concurrent with implementation of the preferred alternative should be added to the text

Page 9-6

Section 9 2 1 Wildlife and Vegetation

Section 9 2 1 1 Short-Term (Construction Period) Impacts

- ¶1 addresses potential loss of Preble's meadow jumping mouse habitat. However, no details are given concerning NRDA values integration concurrent with implementation of the IM/IRA, especially since the ¶ states that Preble's mouse habitats "will be significantly affected by construction activities for the eastern end of the cap, "

- ¶2 states in part, "the area of disturbed vegetation is closer to 35 acres." Again, no detailed mitigation/remediation plan to replace lost aquatic, wetlands, and terrestrial values is proposed. NEPA values coordination appears to be missing and/or inadequate.

- ¶2 also states in part, ". noxious weeds could be introduced [emphasis added] during revegetation and would be controlled until adequate native vegetation is established."

Most CERCLA and non-CERCLA projects associated with the site have had, and continue to have, substantial problems with revegetation of anthropogenically disturbed sites. Revegetation efforts associated with OU3 have been miserably inadequate. Revegetation efforts associated with OU1 have essentially failed.

With respect to OU1, the Executive Summary, "Rocky Flats Environmental Technology Site Ecological Monitoring Program, 1995 Annual Report," May 31, 1995, states in part, "Revegetation efforts on the 881 Hillside (Hillside) were monitored by EcMP personnel in late fall of 1994. The results reveal that the success of the revegetation effort this far has been poor. Of the 13 species seeded on the Hillside, only six were recorded during the 1994 sampling and these provide only 3.5% of the cover on the Hillside. The Hillside is dominated by non-native, annual species and 63% of the species recorded there are considered "weeds [emphasis added]." Vegetation cover, although having increased from 1993, is still less than half that found in reference areas on the Site. The significance of the problem should not be underestimated. With no action, the domination of the Hillside by non-native, annual species will continue to persist and provides the potential to spread throughout the Woman Creek drainage, downstream and downwind. Other studies have shown that the competitive influences of plant communities dominated by annual species prevent the re-establishment of native plant communities and often lead to lower quality watersheds by increasing the potential for erosion and typically increasing the frequency of (uncontrolled, [emphasis added]) wildfires. It is recommended that additional reseeded of the Hillside be commenced as soon as possible with a seed mixture of native, perennial grass and forb species like those found in the reference areas of the mesic grassland community at the Site."

The preceding quote is an indictment of revegetation efforts ascribed to site-associated projects. The OU7 IM/IRA decision document does nothing to improve revegetation plans. In fact, the decision document is so vague about revegetation details it leaves readers with no other choice than to conclude that results of revegetation efforts for the OU7 IM/IRA will be no better than those described for the OU1, 881 Hillside

- ¶3 states, "Temporary loss of habitat may cause direct mortality to small and less mobile animals such as rodents and reptiles resident in the area. Indirect mortality may occur due to displacement and indirect causes of mortality, cumulative impacts of habitat disturbance across the site, project-by-project, are now adding up to large-scale insults to site-wide and off-site natural resource attributes with potential substantive adverse impacts to local and regional ecological functions. These adverse impacts are likely exacerbated for certain species depending on the time of the year and season because of breeding/reproduction, survival of new-born and juvenile recruitment into populations, etc. The draft IM/IRA decision document fails to recognize and adequately address these issues. More detailed discussion of these issues should be inserted in the subject document.

- ¶4, states in part, "Increased equipment and human activities associated with construction inevitably result in increased noise levels and vehicle traffic. These activities probably have the least disturbance to wildlife because surrounding areas are already in industrial use and wildlife is habituated."

While this phenomenon may be true for minor disturbances, the cumulative impacts of noise and anthropogenic disturbance will ultimately progress beyond a threshold of stressor effect that will elicit adverse effects to biota. This concept apparently is not fully appreciated by the authors. As pointed out above, cumulative effects, undoubtedly are worse upon certain species and various age-classes of wildlife depending upon the time and season of the year they are experienced.

- ¶4, states in part, "Habitat loss is expected to be temporary and would continue only until adequate revegetation is established. With the use of straw mulch, adequately spaced silt fences, and other appropriate measures, the final vegetative cover would be established within two to three years."

As pointed out previously above, the final vegetative cover with respect to specific projects requiring revegetation in OUs 1 and 3, despite assurances otherwise, have become exotic weed patches and sources of weed seeds that have been adversely affecting some of the few remaining high-quality prairie vegetative communities left on site. This IM/IRA document completely fails to either address or satisfy previous revegetation problems experienced and on-going at/associated with site construction projects. Because this issue has become so important to the continued health of the native ecology of the Site and the general local and regional geographical area ecologically influenced by the Site it should be considered a fatal flaw for this project until these issues are adequately addressed and corrected

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Section 9 2 1.2 Long-Term Impacts

- ¶1, last sentence states, "Leaving approximately two-thirds of the East Landfill Pond in place results in minimal risk to aquatic life and wildlife."

This may be so. However, even if the geographical area and extent of the East Landfill Pond remains intact and relatively undisturbed, no hydrological analysis of surface water quantity available to support the pond's remaining ecology appears to have been done. Therefore, while the impoundment and approximately two thirds of the volume and area extent of the pond remain, will enough water be seasonally and annually available to the pond to sustain its high quality aquatic, wetland, and terrestrial habitat attributes to a relative level and extent commensurate with its size? This issue should be addressed under the Long-Term Impacts section. The issue directly affects DOE-RFFO's NRDA liability with respect to trust natural resources and biota survival dependent on the hydrology and ecology of the East Landfill Pond as it currently exists versus under what conditions it will exist in the future

Section 9 2 1 3 Sensitive Habitats and Endangered Species

- There appears to be substantial conjecture over just how much damage will be caused to Preble's mouse habitats by implementation of the preferred alternative. How can dollars be accurately projected and budgeted for mitigation of habitats when it is readily apparent in the text that it remains uncertain how much habitat will need to be replaced? The document invites and encourages its readers to trust in DOE-RFFO and bet on the outcome. The general implication promoted throughout the document is that taxpayers, Federal and State Natural Resource Trustees, and the general public should trust that DOE-RFFO and its contractors will adequately accomplish the project with appropriate follow-up to ensure that natural resource mitigation is properly and adequately completed over time without providing specific details of how much mitigation will be necessary nor how the mitigation is to specifically be accomplished.

As documented above for a number of previous projects in OUs 1 and 3, and because of reliance on other programs for mitigation offset, e.g. the wetlands mitigation bank which has been administratively floundering for some time, this is inappropriate.

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Section 9 2 2 Wetlands/Floodplains

- ¶1, last two sentences states, "A wetlands assessment which describes the recommended alternative, is included in Section 7. The proposed mitigation plan is to use acreage from the wetlands mitigation bank currently being developed in association with the Standley Lake Protection Project

As commented on above, the proposed wetlands bank is still suffering administrative difficulty. This IM/IRA document should not be published suggesting the OU7 IM/IRA be implemented with reliance on the proposed wetlands bank for required wetlands mitigation unless and until the wetlands banking proposal has received all necessary and required regulatory approvals.

Section 9 2 2 2 Long-Term Impacts

- ¶2, states in part, "The importance of the East Landfill Pond to aquatic life at Rocky Flats and the Big Dry Creek basin appears to be minimal (Appendix D). The pond apparently does not contain fish or crayfish populations, if it does, the populations are very small. Because the pond lacks predaceous fish such as bass, it may be a resource for breeding amphibians such as tiger salamanders, chorus frogs, bull frogs "

First, the East Landfill Pond has been characterized by some ecologists and hydrologists who have worked on the Site as probably the second most biologically active and important impoundment, second only to the Lindsey Ranch Pond. Second, given the importance of aquatic habitats, their association with and importance to wetlands and terrestrial habitats, and the fact that to a large extent surface water hydrology drives biotic interactions and ecological functions-especially in xeric/semi-xeric environments, it seems important that we should know conclusively by now what the composition of aquatic food webs and food foraging guilds are in deeper water habitats on the Site, especially for the most biologically productive ponds.

Note see also previous comments above on this issue.

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- ¶1 states, "The East Landfill Pond does not empty directly into a stream under normal flow conditions; however, large rainstorms could cause the pond to overflow into No Name Gulch. Because this has not occurred, sensitive fish such as common shiners and stonerollers are not at risk from release of contaminants into streams "

These two statements as currently presented raise a number of issues. Some of these issues have been previously raised in other areas of the text of this document. Most have been commented upon above. However, their importance in the context of this IM/IRA bears repetition here

First, the statements raise the issue of a surface water hydrological connection of No Name Gulch, aka Hobbs Gulch, with Big Dry Creek-a water of the United States. This implies that, per the hydrological tributary concept, No Name Gulch is also a water of the U.S. This issue has not yet been settled between DOE-RFFO and the regulators. Nowhere in the text should conceptual approaches be presented that undercut DOE-RFFOs current position which is that the on-site impoundments are not waters of the U S

Second, reducing the size of the East Landfill Pond presumably will exacerbate the ability to retain surface stormwater runoff in this impoundment. It should be anticipated that the pond will have reduced hydrological capacity. Doesn't this increase the risk of overflow of the impoundment? Is it possible that the increased volume of stormwater with respect to the capacity to store it behind the impoundment will lap back toward the landfill cover? Are these issues that require further consideration and discussion in this document?

Third, because an event "has not occurred" to date does not necessarily mean that it will not ever occur nor that, through implementation of the preferred alternative, it will not ever occur. In fact, from the descriptions and accounts provided in the IM/IRA decision document, the capacity of the East Landfill Pond will be substantially reduced due to the area extent of the landfill will also be reduced and upland terrestrial habitat which also would tend to naturally control sheet flow will also likely be reduced. Each of these factors individually, as well as cumulatively, suggest that the probability of overflow of the redesigned landfill pond due to storm events and runoff has a higher probability. These factors apparently have not been considered in risk assessments. They should be treated to more detailed discussion in the text.

Finally, neither common shiner nor stoneroller apparently were considered in the screening level risk assessment. If risk to these plains fishes is raised as an issue anywhere in the text, it should be treated to a detailed discussion.

Each of these issues require further discussion in the subject document.

Section 9.4 Impact to Surface-Water Quality

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Section 9.4.2 Long-Term Impacts

- ¶1. It appears that the discussion in this paragraph implies that as a result of implementation of the IM/IRA flows of surface water from storm events will generally be commensurate with the new, reduced size of the East Landfill Pond. If this is the case this issue should be discussed in the document in greater hydrological detail.

Also, this hydrological discussion should be extended to further evaluating potential adverse impacts to biota within the functioning aquatic and terrestrial ecologies associated with the East Landfill Pond.

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Section 9.6 Commitment of Irreversible and Irrecoverable Resources

- Inclusion of this section is highly appropriate and commendable. It is suggested that the discussion be enhanced to directly relate these I&I reservations with respect to the appropriate sections of CERCLA.

• Item 6 This item is referred to in previous discussion concerning the wetlands mitigation bank. That the bank has not yet received all necessary approvals remains an issue.
Page e water available to flow into the East Landfill Pond the following items are issues suggested for further detailed discussion in the text:

• With potentially less surface water available to flow into the East Landfill Pond the following items are issues suggested for further detailed discussion in the text.

- Potential changes to surface water hydrology and surface water-ground water interactions
- Potential adverse changes to aquatic and terrestrial habitats and the ecological functions they support
- NRDA values integration analysis, particularly injury minimization and/or off-set concurrent with the IM/IRA implementation
- Endangered Species Act, Section 7 consultation concerning surface water depletion's to the Platte River Basin

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