# Appendix EE

# Comment Resolution Forms for the Draft Final Remedial Design/Construction Work Plan

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

**DOCUMENT TITLE: General Comment**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| A. | General | General | It is important that the RAWP address the issue of how the long term performance of the landfill cover will be monitored over time to insure the continued achievement of the assumed 0.0001m/yr specification? | This comment is applicable to and will be addressed in the Remedial Action Work Plan (RAWP). |
| B. | General | General | Although, the revisions to the Screening Level Ecological Risk Assessment correspond with past comments, there still appears to be a units conversion error in the calculation of soil exposure point concentrations. The soil contaminant concentrations used in the ecological risk assessment have not been revised. It appears as if a units conversion error in the calculation of the soil contaminant concentrations increased the contaminant concentrations by three orders of magnitude. (JS) | The soil exposure point calculations, with their associated tables and unit conversions were reexamined. The values are correct however, there was some confusion in the text and in the table headings (a mass instead of curies was indicated) and a conversion factor of a 1000 to convert kg to mg was inadvertently excluded. These have been corrected. |
| C. | General | General | Although, DOE/ID-10848 — ICDF Remedial Design/ Construction Work Plan, indicates that several engineering design files were 'finalized' as part of 30% and 60% design efforts, only summaries are provided for the conclusions from these EDFs. These previously completed documents should have been provided as part of the 90% review since they are still subject to revision prior to the finalization of the RD/RAWP. | The 30% and 60% design documents have been provided to the Agencies and comments incorporated. If no outstanding comments remain, the document was not included in the draft or draft final submittal. The final ICDF RD/CWP will include all pertinent documents. |
| D.** | General | General | Although, EDF-ER-270 (60% June 28, 2001 Document) — *ICDF Storm Water Drainage Calculations,* was not included with the 90% Draft Final design submission, an evaluation of the effect that a 500 year flood would have on water flow into the active ICDF, prior to closure, is required.<br><br><u>Suggestion:</u><br><br>Based upon an analysis presented in the 90% Appendix K of EDF-ER-281, it appears that the 500 year flood water will reach elevation 4925 at the location of the ICDF. The ICDF berm is at elevation 4929 during the active phase allowing a 4 foot resistance to wave action. | The evaluation has been performed in the Draft Final EDF-ER-281. This EDF looked at a hypothetical flood elevation of 4925 and its effect on the final cover of the ICDF. As noted in the EDF, the calculated 500 year flood plain by the Bureau of Reclamation is below the 100-year flood plain elevation of 4,917 feet which was calculated by the USGS. The text will be expanded to discuss how elevation 4,925 compares with the calculated floodplains and describe how the additional 8 feet of depth is well above the projected 500-year flood plain level. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

**DOCUMENT TITLE: General Comment**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| E.** | General | General | Although the study, *EDF-ER-273 (60% June 28, 2001 Document) — ICDF Permeable Reactive Barrier Decision Analysis*, evaluated whether I-129 sorption properties could be increased by use of commonly available materials serving as a reactive barrier, it did not evaluate the possibility of sorbing I-129 on Granular Silver Impregnated Activated Carbon (GSIAC), located in the sump area of the landfill. Based on limited literature information, SIAC could serve the dual role of decreasing I-129 leachate migration to groundwater in the event of a liner failure and minimize the mass of I-129 in solution that is transferred to the evaporation pond and subsequently released into the atmosphere. Although such an attenuating zone is not required to meet minimum protectiveness standards for the safe operation of the ICDF complex, it does provide an added margin of safety during the landfill operational phase, in keeping with ALARA principles and the Agencies' promise to design, construct, operate, close and post closure maintain the ICDF Complex safely.<br><br><u>Suggestion</u>:<br><br>The use of an GSIAC/soil for the bottom of the sump area can achieve necessary hydraulic conductivity by setting the mean grain diameter so that '$D_{10}$' in Hazen's formula is >0.1mm. Necessary compressive strength can be achieved through the use of a 6" thick permeable geogrid mattress (see Robert Koerner's "Designing with Geosynthetics' or equivalent text). The effectiveness of SIAC can be determined through a modest cost bench-scale treatability study (TS) which evaluates: 1) whether I-129 would be sorbed or precipitated out of solution within the leachate detention times expected within the sump; and 2) the effect | This issue has not been resolved to the satisfaction of EPA.<br><br>It is DOE's position that the need for the PRB has not been identified in any of the design documents. Using conservative assumptions for all calculations, the landfill can safely operate within the limits of the OU 3-13 ROD and the National Contingency Plan. Operational limits will be developed during the RAWP that will provide further protection of human health and the environment. Until a technical need for the PRB is identified, DOE does not support further discussion on the implementation of the PRB. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: General Comment | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| | | | that other cations, anions and possibly organics have on the effectiveness of the SIAC during the landfill operational phase. Table 2-2 in EDF-ER-274 could serve as a reference for simulating leachate quality. Concerns about possible clogging of leachate collection pipes can be eliminated by the use of a gravel only filter zone in the pipe intake area. | |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-271, Evaporation Pond Sizing | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 1.** | Section 2, #3 | 2-1 | The pond grading should be a minimum of 2% to the low point.<br><br>Suggestion:<br><br>It is difficult given the scale on Dwg C- 205 to determine if the 2% slope is accounted for in the design. | Text will be changed to state the pond grading will be performed to establish a minimum installed slope of 1 percent in accordance with the minimum slope identified in 40 CFR 264.221(c)(2)i. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-274, ICDF Leachate/Contaminant Reduction Time Study (Appendix A) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 2. | General | General | The text did not discuss the sensitivity of the results to variation in parameter concentration. For example, some contaminant mass is emitted to the atmosphere through transfer to the evaporation pond and from landfill operations. Also, the data is limited in that organics were not accounted for as they are presumed to represent <1% of the total mass fraction.<br><br>Suggestion:<br><br>The RAWP should address monitoring the leachate characteristics to track contaminant and concentration trends over time in order to verify that the contaminants in the landfill are hydrolyzing at the rates and ratios assumed by the modeling. The actual leachate characteristic and trends should be tracked to verify the predictions regarding the leachate characteristics. (JR) | The RAWP will address the monitoring of leachate and will present how concentration trends will be tracked over time. |
| 3. | Section 4.1.4 | 4-4 | Although they may not represent a >1% mass fraction, a number of organic contaminants are present in the waste that represent a significant theoretical leachate concentration, e.g., see Table A-16, benzene @ 9ppm, TCE @ 1ppm, acetone @10ppm. | The comment should refer to Table A-6. No response required. Comment noted. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-275, ICDF Fate and Transport Modeling Results and Summary Report (Appendix B) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 4.** | Section 2.1.3, 1st para | 2-4 | The text states that the fate and transport modeling assumes "... no influence from the wastewater disposal ponds or the Big Lost River." In previous comments made on successive stages of the ICDF design we have challenged this assumption stating that the Big Lost River, when it flows, will very likely influence the vadose zone moisture content. As part of the sensitivity discussion, the text should indicate that the predicted contaminant travel time to the Snake River Plan Aquifer may be reduced. (JR)<br><br><u>Suggestion</u>:<br><br>The accuracy of predicted contaminant travel times to the Snake River Plain Aquifer without consideration of the influence of the Big Lost River on moisture content in the vadose zone is still a matter of potential concern. The degree to which the contaminants will be diluted is an additional area of uncertainty that relies solely on modeling rather without supporting data. | The text already states that the predicted travel time to the SRPA may be reduced. DOE agrees that any influence from the Big Lost River will reduce travel times. However, any influence based on modeling from the Big Lost River will also reduce concentrations. |
| 5. | Section 2.1.3, 1st para | 2-4 | Although the text states that in modeling performed in 2000 by Martian the influence of the Big Lost River would result in decreased contaminant concentrations due to dilution. It is unclear of the significance of this statement in terms of regulatory or health based criteria being exceeded as there are no actual data for model calibration. | Introducing additional water in the vadose zone has to reduce contaminant concentrations and correspondingly reduce health-based risks. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-275, ICDF Fate and Transport Modeling Results and Summary Report (Appendix B) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 6.** | Section 3 | 3-1 | The conclusion section should be changed so that it compares an ineffective cover, e.g., 0.01m/yr, against the design cover given the fact that the ineffective cover would result in an unacceptable MCL exceedance for I-129.<br><br><u>Suggestion</u>:<br><br>The sensitivity analysis in Table 2-7 points out the importance of maintaining a 0.001m/yr recharge rate as the theoretical I-129 concentration at the 0.01m/yr would exceed the drinking water MCL for I-129. | On page 3-1, the phrase "if no barrier existed" will be deleted. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-277, ICDF Waste Soil Design Ratio Calculations (Appendix I) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 7. | Section 3 | 3-1 | The assumptions and calculations do not support the presented conclusion. Table 3-1 presents debris type, total landfill volume and total debris volume. These Table 3-1 column headings can be justified. The remaining columns require an assumption that each debris type is the only debris placed into the landfill. This is not a realistic assumption to justify the conclusion of a stable waste fill. Table 3-1 requires revision to integrate the various debris types. More discussion is required on how the soil achieves a stable waste fill. (RH) (EPA #43).<br>The resolution of this comment (EPA #43) is acceptable if this language is incorporated into the EDF text. | Comment will be incorporated. The table was not meant to summarize or justify a stable waste fill, but the placement diagrams demonstrate access by compaction equipment and significant volumes of soil around containers based on maintaining a stable waste fill. The main intent of this table was to summarize the expected soil to debris ratios calculated and compare with the volumes anticipated for disposal at the landfill. The text will be changed to clarify this intent. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-278, Liner/Leachate Compatibility Study | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 8. | Section 1.4, 1st para | 1-2 | The compatibility of the landfill liner with leachate is a concern throughout the life of the landfill post- closure care period which far exceeds the 30 years mentioned. | Text will be changed to differentiate between the leachate compatibility of the synthetic liner systems and the natural clay. The natural clay liner system is expected to last for thousands of years while the synthetic systems may last for hundreds of years. Clarification will be provided in the text to indicate no compatibility issues with the liners for extended periods of times. |
| 9. | Section 1.5, 4th para | 1-4 | It is unclear what the assumption of a 4cm maximum depth of leachate is based on, especially in the sump area? | The 4 cm was calculated as the maximum head on the liner system outside the sump area. Based on the evaporation pond depth of 36 cm, even the maximum 12-in. head on the liner would be acceptable. |
| 10.** | Section 1.6, 1st para | 1-5 | The designed absorbed dose from Sr-90 alone is 0.062 rads/hr. Further, the design life for the landfill liner is not 15 years. It could be argued that the design life is 1,000 years and the design life for the pond is 45 years.<br><br><u>Suggestion</u>:<br><br>A 45 year design requirement would subject the liner to 35.5 krads and 1,000 years would equate to 788 krads. | The design life for the synthetic layers will be revised to indicate expected life may be well beyond the minimum 45 years. Also the clay liner is not susceptible to degradation based on radiation and therefore will last for greater than 1,000 years.<br><br>Based on radiation absorbed dose, the HDPE liner is not expected to be degraded below acceptable levels for mechanical properties. |
| 11. | Section 3.1, Table 3-1 | 3-1 | Please correct the design inventory dose for radionuclides to 800,000 rads due to 1,000 year vs. 15 year design basis. | Synthetic liner systems have a minimum design life of 45 years and the clay liner system is not susceptible to degradation from radiation. Text will be clarified to indicate potential life of liner systems is well beyond the minimum of 45 years.<br><br>Based on radiation absorbed dose, the HDPE liner is not expected to be degraded below acceptable levels for mechanical properties. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-279, ICDF Hydrologic Modeling of Final Cover (Appendix M) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 12.** | Section 3.2, 2nd para | 3-3 | The selection of a poor stand of grass along with the SCS run-off curve number of 79 tends to increase the amount of water run-off from the landfill cap. These assumptions maybe realistic, but the range of alternatives should have been modeled since this is a facility constructed to design specifications. For example, what happens if the grass stand is good and more infiltration occurs? (RH) | The text will be clarified by adding sentences as follows: The runoff from the cover system was modeled to promote infiltration. However if a good stand of grass is established it would decrease the infiltration due to increased evapotranspiration. |
| 13. | Section 2, Figure 2-1 | 2-1 | Does the note that appears just above the figure refer to the soil bentonite liner or if the word "layer" is correct, please indicate which layer is being referred to. (JR) | The note will be clarified to refer to the specific layers that are referred to. Horizons E and F refer to the entire layer and are the locations where percolation was determined. |
| 14. | Section 3.3.1, 1st para | 3-3 | The original comment on the draft document questioned how the filter type 2 well graded sediment will be kept from migrating into the bio intrusion layer resulting in a reduction of the function of the capillary break. The text does not mention the use of a geomembrane although that was mentioned when the comment was discussed in the Seattle comment resolution meeting. The text should specify the use of a geomembrane and direct the reader to Section 4 of EDF 281 where the expected effective life of these materials are discussed. (JR) | The filter layers have been designed using standard geotechnical filter criteria to prevent any migration. No geomembranes were specified because they are not required. The reference to EDF 281 where the filter calculations have been presented will be included in the text. |
| 15. | Section 3.3.2, Table 3-3 | 3-5 | The SBL value should be corrected to reflect design minimum, given that the Test Pad permeability results did not demonstrate that the required $1 \times 10^{-7}$ cm/s permeability will be achieved. | The regulations specify the cap must be less permeable than the bottom liner system and therefore this value was selected to meet this requirement. The future selection of the cap barrier material will be required to meet this maximum hydraulic conductivity. A new test pad will be required to demonstrate that Boutwell tests or other larger scale permeability tests will meet this minimum hydraulic conductivity. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-279, ICDF Hydrologic Modeling of Final Cover (Appendix M) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 16. | Section 4.3 | 4-5 | The section discusses a single burrow as representing 0.005mm/yr infiltration and states that the total infiltration from burrowing animals is 0.015mm/yr representing only 3 burrows on the landfill. Given the pocket mouse frequency is 2.9 burrows per 100m transect it is unclear the basis for this assumption?<br><br>Suggestion:<br><br>It would appear that a more appropriate number burrows for Cells 1 & 2 of the landfill is 16+ resulting in a net infiltration of ~0.1mm/yr. | Comment incorporated by clarifying that the additional infiltration due to 16+ pocket mouse burrows would be 0.16 mm/yr through the water storage layer. Adding this to the infiltration due to natural infiltration totals 0.62 mm/yr which still produces less than 0.1 mm/yr infiltration through the clay cap barrier layer. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-280, Landfill Leachate Collection System | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 17. | Section 1 | 1-1 | The design criteria of maintaining runoff for a leachate collection system is unclear. | This text will be changed to state: "The leachate collection system has been designed to handle the runoff from a 25-year, 24-hour storm." |
| 18. | Section 1 | 1-1 | The landfill system sump should have sufficient aerial extent to allow accumulation of multiple day normal precipitation without exceeding the 1ft leachate heigth limitation. | The sump capacity currently provides storage for approximately 9,260 gallons assuming a porosity of 0.33. This will be included in the text. |
| 19. | Section 1 | 1-1 | According to Dwg C-202, the minimum slope to the drainage is 2% and it should starte that here. A 1% slope is inadequate for drainage. | Text will be revised to state the minimum slope is 2%. |
| 20. | Section 2.4 | 2-2 | Providing $D_{10}$ data in Appendix A would assist in determining whether screened native soils are acceptable based on the particle size distributions, for meeting the $10^{-2}$ cm/s requirement for the drainage layer. | The data is provided on page A-31 of Appendix A.4. The $D_{10}$ for the gradation will also be identified. |
| 21.** | Section 3.2.1.2 | 3-3 | Although an ALR is given for the surface impoundment, nothing is said for the landfill. Based on reference EPA 1992b, the ALR for the landfill detection system should be less than 100 gpad. | The specific calculation for the ALR for the landfill is contained in the Leachate Generation Study, EDF-ER-269. A calculation identifying the gpad based on the ALR calculation will be included. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-281, Liner and Final Cover Long-Term Performance Evaluation (Appendix J) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 22.** | Appendix B | | The analysis for puncture resistance of a geotextile was recalculated based upon previous comments. The reference method is of most use when the geotextile serves as a structural component between layers. Professor Koerner in the cited reference also provides an analysis method on page 535 about puncture protection for a geomembrane. Based on our calculations the geotextile cushion on the FML and the puncture resistance is too low. (RH) | CH2M Hill has performed the calculations cited in Professor Koerner's book and determined the 12-oz cushion geotextile is adequate. Additional calculations will be included in the revised EDF. |
| 23. | Section 5.2, 4th para | 5-1 | The text states that "The ICDF will lie within alluvial, aeolian and lacustrine sediments deposited over millions of years ago by the Big Lost River." However, the text states further that the ICDF landfill is outside the river flood plain, but that the sediments were deposited over millions of years ago by the Big Lost River. The ICDF excavation exposed sediments that, based on field observation, are the result of depositional processes associated with the Big Lost River. Glacial activity is believed to have occurred in the area as recently as tens of thousands of years ago, but the event the text refers to as occurring millions of years ago is not clear. Additional information, editing or references are needed to support the apparently contradictory statements in this section of the text. (JR) | Text will be changed to clarify the following points:<br><br>1. Existing Big Lost River floodplain is the 100-year floodplain.<br>2. The text concerning the geologic history. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-290, ICDF NESHAP Modeling (Appendix O) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 24. | | | While author's note says to be included with 90% Draft Final design submission, no submission was included in 90% draft final? We assume that DOE has not changed this document from the 8/31/01 submission? | The author's note says the document will be provided in the Final. There have been no changes to this document. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-311, Screening Level Ecological Risk Assessment for the ICDF Complex (Appendix R) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 25. | Section 1.1.1 | 6 | The section of the ecological risk assessment describing how the soil exposure point concentrations were calculated has been expanded to include the density of landfill material (1500 kg/m$^3$). The description of how the soil contaminant concentrations are calculated was enhanced to provide the equations used. However, there still appears to be an error in units conversion which results in the organic and inorganic contaminant concentrations being three orders of magnitude higher? (JS) | The soil exposure point calculations, with their associated tables and unit conversions were reexamined. The values are correct however, there was some confusion in the text and in the table headings (a mass instead of curies was indicated) and a conversion factor of a 1000 to convert kg to mg was inadvertently excluded. These have been corrected. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10851, ICDF CQA Plan for the INEEL CERCLA Disposal Facility (Appendix X) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 26. | Section 2.1.2.10 | 1-7 | The CQA certifying officer should be given the authority to recommend a work stoppage and/or possible remedial actions to DOE and the Regulating Agencies. (WF) | The organization chart will be modified to say: "The CQA certifying officer has the authority and responsibility to stop work and recommend remedial actions to the regulatory Agencies." In addition, the text will be clarified to indicate the independence of the CQA certifying officer. |
| 27. | Section 2.1.2.10 | 1-7 | The text states that the CQA certifying officer should be an independent third-party, however the organization chart shows the position responsible to the field representative of the ICDF project manager. This will not allow the CQA certifying officer to be independent, and will not give the authority to recommend a work stoppage. (WF) | The organization is mandated by contractual agreements. The CQA certifying officer does have the authority to stop work as described in the response to Comment 26. |
| 28.** | General | | This document requires revision to include procedures for performing aspects of Phase I over given the results of the test pad field and laboratory permeability results. A major purpose of the test pad is to demonstrate that the minimum liner requirements can be achieved based on field measurements. | The recommended additional test pad construction and testing will be included in the final document. The additional test pad will be started as soon as possible to minimize schedule delays. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10865, Waste Acceptance Criteria for ICDF Landfill (Appendix P) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 29. | Section 4.1.3, Table 4-2 | | In the resolution to comment #36 in the 90% document the text states that "DOE will supply a discussion and comparison table of the conservatism used to develop the [WAC] limits." Where is this information in the Draft Final document? (AP) | This information is included in Appendix F of DOEID-10865. |
| 30. | Appendix A, 2nd bullet | A-4 | It is unclear how background is being accounted for here. As we have stated repeatedly, risk-based concentrations, e.g., MCLs are not alowed to be exceeded. This includes MCLs exceeded due to an incremental increase above background. This bullet appears to imply that if the incremental increase were below background, the contaminant release could go as high as 10X? | Agree with concept.<br><br>The existing background concentrations in the SRPA will be reviewed to evaluate if any modifications are required to the allowable waste concentrations. |
| 31.** | General | | The known inventory of wastes destined for the ICDF landfill relies on CWID data that, as has been discussed in previous reviews, is limited in its analytical accuracy and the number of samples collected to characterize the extent of contamination. The potential inaccuracy of the CWID data is an additional reason to consider the use of a safety factor in determining the WAC limits, rather than 'maximize' WAC limits. (JR)<br><br><u>Suggestion</u>:<br><br>The Waste Acceptance QA program will provide an opportunity to assess the accuracy of the design inventory. | The waste acceptance process will track the actual waste to be disposed in the ICDF landfill. This information will be used to ensure that all wastes are within the WAC and operational limits identified in the RAWP. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10866, WAC for ICDF Evaporation Pond (Appendix Q) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 32. | Section 4 | 4-1 | Only Table 4-1 was located. Table 4-2 is referenced but not published? (RH) | The reference to Table 4-2 will be changed to Table 4-1. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10878, ICDF Drawings (Appendix Z) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 33. | Drwg. C-201 | | Please explain the potential CERCLA storage area, Note 9. The side slope test pad area must include area on both the bottom and side slope of the landfill. Other comments about the test pad are included under the test pad report. (RH) | The CSA is an area where waste containers are temporarily placed for accumulation of wastes and awaiting characterization and/or disposal. Note 9 indicates this area will be field located based on activities being performed in the field. The horizontal component of the test pad will be included in the CQA Plan, Section 02666 of the technical specifications, and shown on the drawings in the final document. |
| 34.** | Drwg. P-207 | | Will the leachate cleanout pipe provide opportunity for manual readings of leachate level in sump? | Each leachate cleanout pipe will provide access for manual readings of leachate levels. |
| 35. | Drwg. P-209 | | Detail "A" does not illustrate LCRS piping nor could this piping be found at any detail other than Detail "C4" on Drawing P-206. (RH) | No LCRS piping is required or will be provided in the evaporation pond. No hard piping is provided for removal of liquids from the evaporation pond. This operation will be included in the RAWP. |
| 36. | Drwg. P-210 | | On Detail "1", what is the purpose of the ½" air connection and is the valve designed to prevent accidental discharges? (RH) | The purpose of the air connection is to purge the pipe prior to any potential maintenance operations. The air valve will be a standard air connection and the only potential for leakage is during connection of an air hose. The containment slab will collect any drips or discharges during this operation. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10955, ICDF Complex Groundwater Monitoring Plan (Appendix S) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 37.** | Section 3.2.2 | 3-2 | Determining if concentration increases are related to decreased perched water levels or releases from the ICDF complex, will be difficult to substantiate. The presumption will be that statistical increases in detection monitoring wells are associated with a release from the ICDF Complex. | See response to DEQ Comment #47. In addition, the initial perched water wells network is used to gain information on the baseline. An acceptable statistical approach will be determined in the detection monitoring evaluation criteria for the perched groundwater. |
| 38. | Section 3.2.4 | 3-3 | This section is missing the likely corrective measures that will be taken if a release is identified in the perched water and SRPA monitoring program. Please include the corrective measures in this section, as they are an important part of the DQO seven step process as previously discussed. (AP) | Corrective measures are outside the scope of this Groundwater Monitoring Plan which is required to meet the substantive requirements of RCRA detection monitoring. Corrective measures will be provided upon confirmation of a leak as required by the regulations. |
| 39. | Section 3.3, Item 8 | 3-4 | This section states that "Techniques to evaluate ICDF Complex perched water and SRPA data will be outlined in the ICDF Complex RAWP." Please indicate why the reviewer(s) will be given only one chance to review, documentation in the RAWP, on these techniques. (AP) | The RAWP is the primary document. As such, it will go through all the reviews outlined in the FFA/CO for primary documents. |
| 40. | Table 3-1 | 3-10 | This table indicates that leachate sampling will include two radionuclides (Sr-90 and Tc-99) for years one and beyond ICDF Complex Operations. Why were these two radionuclides chosen and not a longer list? Please explain. (AP) | These indicator parameters were agreed upon by the EPA, IDEQ, and DOE based on prevalence in waste (Sr-90) and low distribution coefficient (Tc-99). The indicator contaminants may be adjusted up or down based upon the results from the baseline sampling. A larger set of radionuclides will be analyzed during baseline sampling and every 2.5 years thereafter. |
| 41.** | Table 4-5 | 4-4 | This table indicated that QA/QC samples will be collected at a frequency of one per 20 samples for groundwater samples. However, 20 samples most likely will not be collected at each groundwater sampling event. Therefore, in order for this critical data to be defensible and useful, QA/QC samples should be collected at a frequency of one sample per 20 samples or once per sample day, whichever is more frequent. Please correct the text in order to maintain known quality for this project. (AP) | Field blanks will be collected at a frequency of 1 per 20 samples or 1 per 4 sampling days (whichever results in a greater number of QA/QC samples) per scheduled sampling event (baseline, semiannual, etc.). In addition, the text will be clarified to indicate that if less than 20 samples are collected, 1 QC sample will be collected. If 21 to 40 samples are collected, 2 QC samples will be collected. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10955, ICDF Complex Groundwater Monitoring Plan (Appendix S) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 42. | Figure 2-6 | 2-9 | Although the data presented is useful, it would be more compelling if daily readings were recorded and analyzed to assess the correlation, if any, between perched water wells and peak river flows. | Although daily readings are available for the river, water levels in the perched water wells were not recorded daily. Actual data were provided to the EPA and IDEQ as previously requested. Correlation coefficients were extremely low, meaning that the Big Lost River (BLR) is not a direct influence on the perched water. The water elevations monitoring frequency will be addressed in the RAWP. |
| 43. | Section 4.4 | 4-4 | This section includes corrective measures, however it is only three sentences long. Please include detailed corrective measures that will be taken if discrepancies arise in the field and during the laboratory analysis. For example, if the laboratory calibration is out of control, then all associated samples will be re-analyzed. (AP) | Section 4.3.1 of the QAPjP (Revision 7) discusses corrective action. Additional corrective actions will be identified in the RAWP. |
| 44.** | Section 3.7, Figure 3-2 | 3-7 | This figure indicates an annular space of less than two diameters of the of the intermediate casing size. Water well industry standards, and many state well construction regulations specify two casing diameters to insure an adequate annular seal. (JR) | The figure will be modified. This design is in compliance with State of Idaho regulations, which specifies two nominal casing sizes (not two casing diameters) will be used for permanent casing. There are more than two nominal casing sizes between the 6 inch casing and the temporary intermediate casing. This design allows more than adequate annular space for a 1" or 1 ¼" tremie pipe. The figure is a conceptual design and may be altered due to field conditions but the well will meet State of Idaho regulations. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10955, ICDF Complex Groundwater Monitoring Plan (Appendix S) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 45.** | Section 3.7, 2nd para | 3-8 | The text states that "If no saturated zones are encountered...the three completion intervals that are most likely to encounter water in the future from a possible source." The statement should clarify that the completion intervals will be selected at depths that are likely to develop water as a result of downward infiltration from any of several potential surface water sources. The Big Lost River, for instance, is known to infiltrate the vadose zone and result in shallow perched water adjacent to the river and a greater depths farther away from the river. Correlated depths of corresponding lithologies should be compiled during the drilling activities and considered in the selection the monitoring well completion intervals if no saturated zones are encountered. (JR) | The last sentence of the comment will be included in the GWMP to better define how the completion zones will be determined if no water is encountered. |
| 46. | Section 1.2, Last para | 1-4 | According to the text it suggests that compliance with contaminant MCLs extends only to the 2095 date. Please modify the sentence so that protection of SRPA is perpetual and not limited to 2095. (JR) | The text will be changed. |
| 47. | Section 5.3, 1st para | 3-2 | The text states that "...a purge rate that will maintain a constant stagnant water level.." A constant or steady water level elevation while pumping a well is generally referred to as a dynamic pumping level. Please amend the text for clarity as the term stagnant has other implications in reference to purging wells. (JR) | The term "stagnant" will be removed. The text will be reworded to clarify that this section refers to low flow purging technology. |
| 48. | Section 3.7, Figure 3-3 | 3-9 | This figure indicates PVC casing will be used to construct the monitoring wells. Due the depth of the deepest monitoring zones, however, and the height of the cement grout column that will produce heat and pressure on the PVC while constructing these wells, steel casing should be used. (JR) | The heat of hydration and effects upon PVC well casing are well understood. This will not be an issue if the grout lift per pour is limited to within acceptable ranges. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10955, ICDF Complex Groundwater Monitoring Plan (Appendix S) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 49. | Section 5.3, 2nd para | 5-1 | The text states that "This purge volume will be different for each well within the monitoring network due to differing lengths of discharge tubing." The tube length will depend on either the water level or the screen depth and will actually dictate the purge time as well as the tube length. (JR) | This will be reworded to be more clear. |
| 50. | Section 5.3, 3rd para | 5-1 | The text refers to a static water level during purging and sampling, which in the case of low capacity wells may not be possible. In most cases as the wells are purged and the water level will initially decline from static and then attain a stead pumping or dynamic water level as noted previously. Please amend the text using the correct term. (JR) | Text will be changed to clarify that a constant water level will be ensured when using low flow purging technologies. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: SPC-1476, Technical Spec for the ICDF (Appendix Y) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 51. | Section 02371, Section 2, Line 1 | 2 of 5 | The 12 ounce geotextile has been revisited by the design engineer in EDF-ER-281 and EPA comments are provided for that analysis.<br><br><u>Suggestion</u>:<br><br>Page 147 in "Designing with Geosynthetics" discusses how the reduction factor is a modification of the data uncertainty compared to a factor of safety. Although not presented to its final conclusion, the global factor of safety for the EDF-ER-281 analysis is slightly less than 2.0, which is acceptable for this calculation, not the 4.0 presented in the resolution of EPA comment #74. (RH) | See response to Comment #22. |
| 52.** | Section 02315, Section 2, Line 35 | 2 of 6 | The drain gravel allows 5% passing the #10 sieve and the operations layer allows 5% passing the 200 sieve. Considering the largest particle size allowed is 2" for both, should the drain gravel be more restrictive, say 2% passing the # 10 sieve? The Drain sand allows a maximum particle size of 1" with a maximum of 10% passing the #200 sieve. This appears to be a wide range of particle sizes to be allowed for a material described as sand. (RH) | The drain gravel with 5% passing the No. 200 sieve meets the hydraulic conductivity requirements and also meets the filter criteria. The 2% passing the 200 sieve is considered excessively restrictive without improving the hydraulic conductivity.<br><br>The sand is only used for pipe bedding and additional maximum particle size requirements for specific pipe materials is further defined in the technical specifications, Section 02320. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: TFR-71, T&FRs-WAG 3 ICDF and Evaporation Pond (Appendix CC) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 53. | Section 1.7, Item L | 6 | This section states, "Waste arriving at the ICDF will be limited to one waste profile per container." Please include in the text DOE's previous response, which was, "The Waste Profile will be based on the waste stream. There may be more than one container per profile but if the waste content changes a new Waste Profile will be required. Mixing waste streams within containers will not be allowed." (AP) | Comment noted. No change to the document. This will be addressed in the RAWP. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-2899, ICDF Test Pad Construction Report (Appendix U) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 54.** | Section 2.2.2, Mixing | 3 | State the methodology used to determine that the spreader was not able to distribute the bentonite evenly. The field construction report for August 17, 2001 states that there were two methods for calculating bentonite spread rates: sacks used versus amounts sampled and calculated, and also that the contractor decided that more bentonite was required. Summary calculations that predict the range of bentonite actually used should be provided. At a minimum the total weight of bentonite used, and the amount of borrow soil treated should be quantified. (WF) | QA and QC personnel did calculations that predict the range of bentonite to be used. These calculations will be included in the Final Test Pad Report. |
| 55. | Section 2.2.2, Mixing | 3 | The field calculations are very difficult to understand. As stated previously, at a minimum, the total weight of bentonite used, and the amount of borrow soil treated should be quantified. (WF) | Field calculations will be revised and summarized for clearer understanding and will be included in the Final Test Pad Report.<br><br>Field calculations will include total weight of soil and total weight of bentonite. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

**DOCUMENT TITLE: EDF-2899, ICDF Test Pad Construction Report (Appendix U)**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 56. | Section 4.5, Field In-place moisture Density | 7 | Our previous comments on the 90% RD included two graphs as an attachment. The graph of rapid vs oven- dry moisture contents shows that a correction factor of about 0.5 percent, which is shown as the dashed line, should be subtracted from the rapid moisture contents to reduce systematic errors. The graph of rapid versus sand cone wet densities shows a large scatter. This scatter implies that operator error with one or both of the tests is too large to determine a correction factor. If the three data points in the lower right corner of the graph are eliminated as outliers, the graph shows that a correction factor of about 2 pcf, which again is shown by the dashed line, should be subtracted from the rapid wet densities to reduce systematic errors. Both graphs show a thinner line that would correspond to the condition that required no correction for systematic errors. (WF)<br><br><u>Suggestion</u>:<br><br>The EPA Technical Guidance Document, Quality Assurance and Quality Control for Waste Containment Facilities Technical Guidance Document, Quality Assurance and Quality Control for Waste Containment Facilities - EPA/600/R-93/182, September 1993, includes a method to minimize systematic errors with the rapid moisture content (ASTM D3017) and total density (ASTM D2922) measurements. The method includes two graphs: one plots the rapid moisture contents against oven-dry moisture contents (ASTM D2216), and the other plots rapid total densities against the densities determined by the sand cone (ASTM D1556). | These graphs will be prepared for the additional test pad for during the production clay placement operations to evaluate correlation between rapid versus oven-dry moisture content. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

**DOCUMENT TITLE: EDF-2899, ICDF Test Pad Construction Report (Appendix U)**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 57.** | Section 4.5, Field In-place moisture Density | 7 | Moisture content: A graph plotting the nuclear gauge moisture content against the oven-dried moisture content should be prepared using the fifteen tests from the test pad. This graph should accumulate more data points as testing continues through cell construction. The test pad tests show that gauge corrections range from +0.3 to -2.4 percent with an average of -0.7 percent. The EPA Technical Guidance Document, Quality Assurance and Quality Control for Waste Containment Facilities includes this method to minimize systematic errors with the nuclear gauge moisture content. (WF) | A graph plotting the nuclear gauge moisture content against the oven-dried moisture content will be prepared for the additional test pad and for the production SBL operations. |
| 58. | Section 4.5, Wet density: | 7 | The sand cones performed at the test pad had a large scatter, +6.3 to -3.6 pounds per cubic foot as compared to the nuclear gauge. The large concrete reference block is a reasonable solution to reducing this large scatter of results for wet density. (WF) | Comment acknowledged. |
| 59.** | Section 4.5, Field In-place moisture Density | 7 | Page 12, §4.7 Field Permeability- Boutwell Permeameter. Eight of the 12 field permeabilities measured with the single stage Boutwell permeameters were higher than the acceptable limit of $1.0 \times 10^{-7}$ cm/sec. This failure rate of well over 50 percent implies that additional field permeability testing is required. (WF)<br><br><u>Suggestion</u>:<br><br>Two stage tests, that can be used to evaluate the horizontal permeability, would probably be particularly useful. | Additional field permeability testing will be performed as part of the Phase 2 test pad. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

**DOCUMENT TITLE: EDF-2899, ICDF Test Pad Construction Report (Appendix U)**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 60.** | Section 5.2, Clay Material Testing, Figure 1 | 13-14 | Figure 1 contains plotting errors. The errors include showing only 9 of the 11 failing tests, and incorrectly plotting the water contents and dry densities for 6 of the passing tests. The 11 failing tests conflicts with the 6 failures stated in the text on the top of page 14. An explanation for this conflict is required.<br><br>The failure rate of 11 in 40 tests for the laboratory testing combined with the very high failure rate for the field testing leads us to conclude that the test pad did not produce an acceptable clay liner. Further, Figure 1 shows irregularities in predicting permeability using water content and dry density for densities below 104 pounds per cubic foot. Because the mixing of bentonite into a borrow material that had consistent soil types should have produced a particularly uniform material, predicting permeabilities from a graph such as Figure 1 should be possible. An explanation for the irregularities is that the roller did not remove void spaces that can occur at clod interfaces, lift interfaces, shear surfaces, and dessication cracks. A reduced loose lift thickness that corresponds to the depth of the penetrating feet on the roller could be part of the solution to this problem. (WF) | The figure will be revised to correctly plot the water contents and dry densities. |
| 61.** | Section 4.7, Field Permeability-Boutwell Permeameter | 12 | The rationale for not performing a two stage test should be stated. The two stage test is particularly useful because it can evaluate the horizontal permeability for the material. The horizontal permeability can be as much as ten times higher than the vertical permeability. (WF) | The first stage of the Boutwell test is a conservative estimate of the vertical hydraulic conductivity. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-2899, ICDF Test Pad Construction Report (Appendix U) | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 62. | Section 5.2, Clay Material Testing | 13 | The window of acceptable dry density and moisture contents shown in Figure 1 will probably have to be expanded for working on the 3H:1V slope. The reduced compaction energies that result from working on a slope will lower the range of field densities. The window should be expanded along the wet limb of the compaction curve. An additional standard Proctor test should be added because the highest moisture content typically permitted for a compacted clay liner is about three or four percent wet of the standard Proctor optimum. (WF) (*See previously attached graph* to draft 90% comments -EPA #73). | The acceptable moisture-density window has been expanded in the draft final document and will be confirmed during the Phase 2 test pad. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-286, Waste Placement Plan | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 63. | Section 2.2 | 2-1 | The possibility of placing overpacked drums in the landfill should be included. | The potential for overpacked drums will be included in this document. The typical overpack will not comply with the maximum voids criteria in the WAC. Therefore, the overpack will be grouted or the overpack will be crushed during disposal. |
| 64.** | Section 3.1.3 | 3-2 | The grid sizing for the 'as placed map' should be 25' x 25' x 5'. | The text for the grid spacing will be footnoted indicating the grid size is still under discussion and will be addressed in the RAWP. |
| 65.** | Section 3.3.7 | 3-21 | The specific compaction requirements will be clearly specified in the RAWP/O&M Plan submission for Agencies' review and comment. | Comment noted. The RAWP will clearly specify compaction requirements. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: EDF-ER-315, IDAPA Air Compliance | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 66. | Section 2.1.2 | 2-10 | Is the point of compliance the INEEL site boundary or that location on INEEL where the general public has access? | The point of compliance for this EDF is the site boundary. For developing operational limits in the RAWP, the site boundary will be used for annual compliance and the public road for daily compliance. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: DOE/ID-10866, WAC for the ICDF Evaporation Pond | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 67.** | Section 4.1.1, 2nd para | 4-1 | Protection of the public, which includes non DOE radiation workers, is based on NCP short-term risk concerns in addition to NESHAPs modeling. Risks cannot exceed a cummulative carcinogenic risk of $1 \times 10^{-4}$. If the risks were limited to radiological dose, this would equate to 15 mrem/yr. | It is agreed that risks cannot exceed a cumulative carcinogenic risk of $1 \times 10^{-4}$. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: Appendix AA, Project Schedule and Assumptions | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 68. | Schedule, Item 7 | | Allowance for a 15 day document finalization should have been assumed. | If additional time for editing is needed, the Agencies will be notified of the request for additional time. |
| 69. | Schedule, Item 11 | | Screening operations are scheduled to close prior to finalization of the RD/CWP which may lead to additional screening concerns. | Screening operations are included in the excavation and test pad scope of work so they can be completed independently of the ICDF RD/CP. |
| 70.** | Schedule, Item 47 | | The Prefinal inspection checklist should be a component of the RA Work Plan submission. | The preliminary prefinal inspection checklist will be included in the RAWP. |
| 71.** | Schedule, Item 47 | | Given the winter months and potential for snow, the Pre Final Inspection should be conducted in the Spring or a duration of >2weeks allowed to adjust to weather concerns. | The ICDF construction prefinal inspection will occur as scheduled unless adverse weather conditions inhibit the ability to conduct the inspection. At a minimum, the operations prefinal inspection may also include components of the construction prefinal inspection. |
| 72.** | Schedule, Item 50 | | The RA Work Plan also includes the O&M Plan which is separate and distinct based on the FFA/CO. | This comment is applicable to and will be addressed in the RAWP. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: Appendix BB, Detailed Cost Estimate | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 73.** | | BB-5 | Given the reference for on and off-site cost comparisons, it does not appear that a contingency for payment of state transportation taxes, e.g., Utah, Iowa, etc. is included in the estimate for off-site shipments. A summary level cost estimate should be prepared for off- site shipment and disposal costs for selected waste groupings, e.g., no RCRA LDR, Debris, low level rad, etc. to allow the ROD criterion that those waste streams whose off-site unit costs are less than the on-site unit cost would be disposed of off-site. | The on-Site and off-Site cost comparisons will be updated to include State of Utah transportation taxes in the off-Site cost. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – EPA[a]

| DOCUMENT TITLE: Appendix EE, Comment Resolution on the Draft 90% | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 74. | General | | Although we disagree with some of the proposed resolutions, our concerns remain with the contents of the superceeding document which we have evaluated herein. | Comment noted. |

a. Items with ** indicate comments of particular concern.

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Comments on Responses to IDEQ Comments on Draft ICDF RD/RA WP Submittal**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 1 | Comments # 4, 13-17, and 61 | | These comments regarding closure of the various ICDF units covered in the RD/CWP have not been adequately addressed. The Agencies discussed the items needed for resolution of these comments on a March 7, 2002 conference call. However, the draft final document was not modified to incorporate these discussions. Specific concerns are reiterated below:<br><br>a) Section 5.14 should describe the closure requirements that will be met for each of the various units covered under this RD/RA Work Plan. This includes the landfill, the evaporation pond CAMU, and the associated tank units ( i.e., Truck unloading Station, Crest Pad Building Sump, and Decontamination Lift Station). For clarity, this section should be divided into sub-sections addressing each of these units.<br><br>b) For the landfill, the text in paragraph 2 of Section 5.14 should be expanded to describe the performance standards that will be met for the closure and post-closure care period. As discussed, this could be done efficiently in a list or outline format.<br><br>c) The text in Section 5.14 relating to the evaporation pond CAMU must be revised. As stated in the March 7, 2002 and previous discussions, the two closure options are clean closure or landfill closure. The text as written attempts to define "risk-based clean closure" as a third option. This is not a viable third option, but rather a potential end-point of a clean closure after the required closure activities have been performed. Section 5.14 includes a proposal to apply an industrial land-use scenario for "risk-based" clean closure standards. As | Section 5.14 of the RD/C WP discusses closure elements of the ICDF and will be moved to the RAWP. Agency comments regarding this section will be incorporated into the RAWP. It is the goal of the project to close all ICDF units under "clean closure", with the exception of the landfill cell. The ability to close the non-landfill ICDF units under "clean closure" will be a function of its operating history. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Comments on Responses to IDEQ Comments on Draft ICDF RD/RA WP Submittal**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| | | | stated on March 7, the IDEQ will not agree a priori to this high level proposal. Clean closure will require that all the wastes and liners are removed and properly disposed. Once that is done, both sampling and operational records will be used to determine if there were any releases. Attempts must be made to remove the releases. If there is any residual contamination remaining after attempts to remove the releases, at that time, the IDEQ may choose to apply an industrial land-use scenario to the residuals.<br><br>d) Section 5.14 does not identify what will be done, and the performance standards that will be met for closure of the evaporation pond CAMU. If it is desired that the work plan describe a potential clean closure and a potential dirty closure approach, the requirements and performance standards for each option should be presented and described in general in this section. Note that the substantive requirements of 40 CFR Subpart G, 40 CFR 264.228, and 40 CFR 264.552(e)(4) are the applicable ARARs.<br><br>e) As discussed on March 7, the RD/CWP must describe the proposed closure approach for the tank units covered by this plan ( i.e., Truck unloading Station, Crest Pad Building Sump, and Decontamination Lift Station). The text should describe how these units will be closed to meet the substantive requirements of 40 CFR 264.197. | |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Comments on Responses to IDEQ Comments on Draft ICDF RD/RA WP Submittal**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 2 | Comment # 55 | | The comment requests that the plan identify, in accordance with 40 CFR 264.223 and 40 CFR 264.304, the response actions that will be performed if liquids in the PLDRS exceed the action leakage. The first sentence of the response states that *"please note that 264.223 and 264.304 are not ARARs in Table 12-3 of the ROD."* Note that the Action-Specific ARARs section of the OU 3-13 ROD (Section 12.2.3.1, Page 12-21 states that , *"an evaporation pond will be constructed and designated as a corrective action management unit (CAMU) in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CRF 264.552 and 40 CFR Subpart K and CC) for purposes of . . ."* and *"The ICDF Complex will be operated, closed, and post-closed in accordance with the substantive requirements of IDAPA 16.01.05.008 (40 CFR 264 Subparts G, F, and N)."* Therefore, 40 CFR 264.223 and 40 CFR 264.304 are applicable ARARs for this remedial action. | Subpart K is listed in the declaration of the ROD as an applicable, relevant and appropriate requirement (ARAR). DOE will meet the substantial requirements of Subpart K. Action leakage rates have been calculated (see EDF-ER-269 and EDF-ER-280) will be used to determine leaks for any units. Response action plans will be developed in the RAWP. |
| 3 | Comment #s 77 and 192 | | This comment regarding the aqueous waste types that are eligible for discharge to the evaporation pond CAMU was not resolved by the response. It is repeatedly stated throughout this document that any aqueous CERCLA waste from within the INEEL that meets the evaporation pond WAC can be accepted into the evaporation pond. As we have stated in previous written comments (e.g., comment #123 on the draft SSSTF RD/RA WP submitted to the USDOE on October 29, 2002), the IDEQ disagrees with this assertion. The OU 3-13 ROD did not state that the evaporation pond will be used for any aqueous waste generated from CERCLA actions on the INEEL. The ROD specified that the evaporation pond will be designed and operated to treat ICDF leachate and other aqueous waste wastes generated during operations of the ICDF complex. Other CERCLA aqueous wastes that are not generated as | A conference call was held on May 3, 2002, to further understand the issues associated with this comment and develop a resolution that all three agencies (IDEQ, DOE, and EPA) could agree upon. The agreement was to add a "Prohibition" to the ICDF evaporation pond (EP) Waste Acceptance Criteria (WAC) preventing the acceptance of waste into the EP not associated with ICDF operations (waste streams from SSSTF operations and ICDF landfill leachate) or WAG 3/ICDF Complex groundwater monitoring activities. To accomplish this prohibition, two new sections will be added to Section 5.1 specifying the waste streams that are not acceptable to the ICDF EP. Also, the remaining sections of the ICDF EP WAC will be revised accordingly. The specific changes to the ICDF EP WAC are as follows.<br><br>ABSTRACT, paragraph 2, page iii, will be revised as follows: |

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| | | | part of the operation of the ICDF complex are not eligible for discharge to the evaporation pond. This includes as-generated wastes from process waste tank systems/basins or wastes generated at a result of implementing remedial or removal actions on process waste tank systems/basins. These wastes are not eligible for discharge to the evaporation pond CAMU, regardless of whether their contaminant concentrations meet the evaporation pond WAC. | The evaporation pond is designated as a Corrective Action Management Unit in accordance with the substantive requirements of IDAPA 58.01.05.008 (40 CFR 264.552). The evaporation pond is designed to meet 40 CFR 264 Subpart K and CC for the purposes of managing INEEL CERCLA Disposal Facility landfill leachate, other aqueous wastes including well purge/development water and from operations of the INEEL CERCLA Disposal Facility Complex (Operable Unit 3-13 Record of Decision).<br><br>Section 1, paragraph 4, page 1-1, will be revised as follows:<br><br>ICDF evaporation pond will accept ICDF landfill leachate, aqueous waste streams from ICDF Complex operations, and aqueous waste from WAG 3 and ICDF Complex groundwater monitoring (e.g., purge, sampling, well development, and decontamination water). The ICDF evaporation pond is designated as a RCRA Corrective Action Management Unit (CAMU) in the OU 3-13 ROD. The ICDF evaporation pond is designed and constructed to accept leachate from the ICDF landfill.<br><br>Section 1, bulleted item 3, page 1-2, will be revised as follows:<br><br>The last sentence (sentence 5) will be removed from this paragraph.<br><br>Section 1.2, paragraph 1, page 1-2, will be revised as follows: |

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| | | | | Sentence 1 will be changed to "The ICDF evaporation pond is a CAMU designated to accept ICDF landfill leachate."<br><br>Sentence 3 will be deleted from this paragraph.<br><br>Section 1.2, bulleted items, page 1-4, will be revised as follows:<br><br>Bulleted item 2 will be changed to "Aqueous waste generated in the ICDF Complex."<br><br>Bulleted item 3 will be deleted.<br><br>Section 1.2.1, bulleted item 4, page 1-4, will be revised as follows:<br><br>Title will be changed to "Aqueous waste from WAG 3 and ICDF Complex groundwater monitoring".<br><br>The last sentence (sentence 5) will be deleted from this bulleted item.<br><br>Section 2, paragraph 1, page 2-1, will be revised as follows:<br><br>Sentences 2, 3, and 4 will be deleted from this paragraph.<br><br>Table 2-1, page 2-1, will be revised as provided on attached sheet. This table was made to be consistent with the acceptable waste streams discussed above.<br><br>Two new sections (5.1.1 and 5.1.2) will be added to the ICDF evaporation pond WAC as follows and the remaining |

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| | | | | subsections in 5.1 renumbered accordingly:<br><br>**5.1.1 Non-WAG 3 or ICDF Complex Groundwater Monitoring**<br>Aqueous wastes generated from groundwater monitoring activities other than WAG 3 or ICDF Complex groundwater monitoring activities is prohibited from disposal in the ICDF evaporation pond.<br><br>**5.1.2 Non-ICDF Complex Aqueous Waste Streams**<br>Other aqueous waste streams not associated with operation of the ICDF Complex (e.g., ICDF landfill leachate, storm water, decontamination, secondary waste from treatment, etc.) are prohibited from disposal in the ICDF evaporation pond.<br><br>In the main text of the RD/CWP, revise bulleted item 1 on page 2-6 as follows:<br><br>Limit disposed waste to the ICDF landfill and evaporation pond to waste that is acceptable under the ICDF landfill Waste Acceptance Criteria (DOE/ID-10865) and ICDF evaporation pond Waste Acceptance Criteria (DOE/ID-10866). |
| 4 | Comment # 89 | | Specification 02666 does not reflect the equipment or the methods described in this comment response. Please modify the specification to correspond to the face-to-face comment resolution on this matter, as written in this comment response. | Section 02666 of the Technical Specifications will be revised under Article "Processing Using the In-Place Mixing Method" to tailor the discussion to anticipated construction mixing methods. |
| 5 | Comment # 90 | | Comment Resolution List contained in the Draft Final ICDF RD/CWP, Specification 02666, page 9 of 10, does not reflect the agreed to face-to-face comment resolution on this | Section 02666 of the Technical Specifications will be revised under Article "Maintenance" to define rapid deployment of the geomembrane as "within 12 hours after lift placement" as |

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| | | | matter or the verbiage in the response to this comment. The specification states "In the event that the geomembrane liner cannot be installed rapidly after the final soil bentonite liner lift, the final lift of soil bentonite liner shall be constructed 4 to 6 inches thicker than required and cut to final grade immediately before geomembrane deployment.". Prior to this statement, the specification discusses keeping the CCL hydrated, and that cracks greater than 1 inch deep or ¼ inch wide require repair. The test pad results clearly indicate that desiccation results in unacceptable permeability results for this soil material and compaction methods/energy. Given the fact that the efforts made to keep the test pad hydrated to prevent desiccation were not successful, It is evident that desiccation is unavoidable in the climate conditions president at the INEEL. The face-to-face agreement was based on constructing the entire CCL 4 to 6 inches thicker than final grade, maintaining hydration of this CCL surface to the maximum extent possible, and then cutting back the CCL immediately prior to geomembrane deployment. The DOE comment response concurs with this agreement. The specification must be therefore be worded accordingly. | the maximum time limit for placement of the 4 to 6 inch overbuild section, if the SBL can be kept moist. |
| 6 | Comment # 91 | | EDF – 2899 still contains comments relative to proprietary information, as shown on hydraulic conductivity reports performed by Vector Engineering, Inc. A more thorough inspection of this EDF is needed to ensure that all these proprietary statements are removed, as per the DOE comment response. | The document will be revised to remove discussion of proprietary information. |
| 7 | Comment # 95 | | This comment response states "*A maximum exposure time that the HDPE geomembrane may be exposed to UV radiation will not be added as we do not believe that this is an issue within the time frame of construction.*". This response fails to address the IDEQ concern. Please cite the manufacturer's recommendation for the maximum time | The manufacturer's recommended exposure time limit for the HDPE geomembrane for protection against degradation in excess of 30% of its original strength will be cited in the text. |

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| | | | allowable for HDPE exposure to UV radiation prior to experiencing product degradation. It is also stated that the evaporation pond HDPE membrane is exposed for the entire design life. It should be noted that this is true only for the "sacrificial" HDPE membrane. | |
| 8 | Comment # 97 | | This comment states that QA testing will be more intensive in areas where the CAT 815 is used during liner construction. Please clarify where this requirement is stated in the specifications or in the QA requirements. | Text will be added to DOE/ID-10851 under Section 4.2, "Soil Bentonite Liner," that addresses the need for more frequent testing in areas of nonstandard SBL placement and compaction method. Each lift, no matter how thin, will be tested for density and moisture. |
| 9 | Comment #115 | | IDEQ identified in Comment #115 that the potential to emit rather than the design inventory must be used to demonstrate compliance with IDAPA 58.01.01.585 and .586. EDF-ER-315, using the design inventory concentrations, concludes that only benzo(a)pyrene must have operational controls. However, the screening presented in Appendix B of EDF-ER-315 indicates there may be as many as eighty (80) Toxic Air Pollutants for which the WAC concentrations would have to be operationally controlled to ensure compliance with the .585 and .586 standards. Therefore, the compliance demonstration does not reflect the maximum potential to emit as derived from the waste acceptance criteria.<br><br>IDEQ will not concur with the RD/CWP unless the USDOE either:<br><br>• Retains the current compliance model and limits the WAC concentrations to the concentrations found in the compliance demonstration for all TAP compounds except benzo(a)pyrene (for which the RAWP shall provide operational limits); or, | The title of the document will be changed to "IDAPA Preliminary Air Screening Results." The RAWP will include the IDAPA 58.01.01.585/.586 compliance document.<br><br>The procedure for developing the operational limits is outlined on pages 4-1 and 4-2 of the EDF.<br><br>EDF-ER-315 will be added to Table 4-1 of the WAC. The summary will state that emissions will be controlled by operational limits.<br><br>The operational limits will be developed and presented in the RAWP. |

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| | | | • Revises the compliance demonstration using the WAC concentrations and IDEQ-approved emission/dispersion models. The WAC text must stipulate that for any TAP compound for which the WAC concentration is predicted to result in an exceedance of the TAP standard, the emissions for that compound will be controlled by operational procedures. Further, the text must state that these procedures will be specified in the Remedial Action Work Plan. | |
| 10 | Comment #s 128 and 149 | | These comments regarding the proposed use of in-cell staging within the landfill was not resolved by the response. The IDEQ and the USEPA have both rejected the in-cell staging concept as it has been proposed in this document. The response challenges a regulatory call made by both regulatory Agencies. This response must be modified. Further, Section 3.3.6 of Appendix T still proposes the use of in-cell staging. This concept is not approved and must be deleted from this document. | The sentence in Section 3.3.6 of Appendix T has been deleted. No change will be made to the responses in the Draft Final, as these responses have precedence over previous responses. |
| 11 | Comment # 138 | | This comment states that the density testing description which includes the one per day of compaction minimum statement will be removed. It is evident upon inspection that this has not been fully incorporated into this document. Please revise the document accordingly. | The text of DOE/ID 10851 will be modified to remove the one per day of compaction minimum requirement under Tables II-1 and II-4 of the Plan. |
| 12 | Comment # 153 | | This comment states that bird control for the evaporation ponds will be addressed. Please indicate where in this document this control is described. | This comment will be addressed in the RAWP. |
| 13 | Comment # 176 | | a) The referenced text states, "*Wastes from within the AOC may trigger placement by being treated (e.g., neutralization, solidification using reagents) or being placed in a permitted RCRA facility prior to disposal to the ICDF landfill.*" The second half of this sentence requires clarification. The IDEQ has repeatedly stated | a) The document will be revised.<br><br>b) This will be addressed in the RAWP, including the definition of "containerized". |

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| | | | that placement is triggered when wastes are managed in such a manner as to constitute a RCRA storage unit as defined in 40 CFR 260.10, even if the storage unit is located within the AOC. Placement is triggered by RCRA compliant storage, not by whether or not a unit is permitted. Therefore, the text must be modified.<br><br>b) Additionally, we have reviewed the proposal regarding remediation waste staging piles presented in the response to this comment and have the following comments/clarifications:<br><br><u>Design Standards, Fourth Bullet</u>: Since this unit will operate for a long timeframe prior to closure (including over many winters), the unit should not be located on bare soils.<br><br><u>Design Standard, Sixth Bullet:</u> Any wastes in staging piles over the winter shutdown must be containerized to minimize releases. The IDEQ has determined this is a necessary requirement for protectiveness, since the unit will operate for a long timeframe prior to closure.<br><br><u>Operational Conditions, Fourth Bullet</u>: The IDEQ has determined that the two year time limitation applies to the waste and to the cleanup site using the staging pile. That is, no particular waste can remain in the 40 CFR 554 unit for longer than two years. In addition, the staging pile must not receive wastes from any given cleanup site for more than a two year duration.<br><br><u>Operational Conditions, Eighth Bullet</u>: Note that the IDEQ will consider requests for extension to the above- | |

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| | | | described two year timeframes in accordance with 40 CFR 264.554 (h) (i), which specifies the potential for a single, 180 day extension. | |
| 14 | Comment # 177 | | The proposal to operate the ICDF to keep the impact to the off-site maximally exposed individual (MEI) at less than 10 mrem/year and targeted to be less than 1 mrem/year is a significant deviation from EDF-ER-290, NESHAP Modeling for the ICDF Complex. EDF-ER-290 must be revised to address the radionuclide emissions sources responsible for the 20-fold (or larger) increase in dose to the off-site MEI.<br><br>Further, any other document that used the same input assumptions as EDF-ER-290 must also be revised to reflect the impacts of the increased emissions. Most significantly, this will impact the Screening Level Ecological Risk Assessment (SLERA) and Human Health Assessment assumptions. The SLERA will need to be revisited incorporating the increased radionuclide emissions associated with this twenty-fold increase dose to the off-site MEI. DOE must show that operating the ICDF with radionuclide emissions based on the NESHAP off-site dose limit will be protective of the environment. | The NESHAPs, SLERA, and Risk Assessment documents were all prepared using the ICDF Design Inventory (EDF-ER-264). Although each of these documents use different assumptions and methods of analysis, DOE will ensure that each of these aspects are addressed in the ICDF RAWP so that ICDF operations are protective of human health and the environment. |
| 15 | Comment #s 178 and 179 | | These comments are not resolved by the responses and document changes. Compliance with the groundwater RAO's and liner compatibility are not the only factors that must be considered. The waste tracking section must address compliance with the RAOs and applicable ARARs (e.g., NESHAPs, TAPs). | See response to IDEQ Comment #9. The RAWP will include the IDAPA 58.01.01.585/.586 compliance document. |
| 16 | Comment # 181 | | Wastes should be checked at the ICDF for the presence of free liquids prior to disposal. This is especially important for wastes such as drill cuttings, as has been demonstrated recently with the Group 4 wastes in storage at the SSA. | The procedure for verification of free liquids will be addressed in the RAWP. DOE recognizes and will comply with the prohibition of free liquids in the landfill. |

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| 17 | Comment # 191 | | a) The air emission standards for surface impoundments (IDAPA 58.01.05.008 [40 CFR 264 Subpart CC]) are identified as an ARAR. Compliance mechanism is the organic limits in the Evaporation Pond WAC not a CERCLA exemption.<br><br>b) The volatile organic concentration limit of 500 ppm in the Landfill WAC does not assure the leachate will contain less than 500 ppm VOC. Repeating the EDF-ER-274 calculations using the WAC limits, rather than the design inventory, appears to result in a maximum VOC concentration in excess of the Subpart CC standard. Disposal of waste with VOC concentrations an order of magnitude above the design inventory should trigger more frequent monitoring of the VOC concentration in the leachate to assure 40 CFR 264 Subpart CC compliance. | a) This will be corrected in the table.<br><br>b) The comment is correct. Five chemicals will exceed maximum leachate concentrations based on the landfill WAC. These five chemicals are benzene, acetone, trichloroethene, xylene, and di-chlorobenzene. The landfill WAC limits for these five chemicals will be reduced to ensure the leachate concentrations will not exceed the EP WAC limits. |
| 18 | Comment # 193 | | The IDEQ provided the requested clarification during the February 2002 meeting in Idaho Falls. The reference is 58 *FR* 8666. | Comment noted. |
| 19 | Comment # 197 | | See Draft Final Comment #13. | See response to Draft Final Comment #13. |
| 20 | Comment # 206 | | This comment response states that "It was recommended and agreed that a redundant strip of HDPE be placed on the slope underneath the influent pipe discharge." for the evaporation ponds. Please indicate where in the specification or construction work plan that this requirement is stated. | A note will be added to Drawing P-203 indicating the following: "An HDPE splash pad will be placed on the slope underneath the influent pipe discharge to the evaporation ponds." |

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**DOCUMENT TITLE: Draft Final ICDF RD/CWP**

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| 21 | General | | Please describe what measures are in place, and what requirements are documented, in the specifications or work plan to ensure freeze–thaw protection is provided for the landfill and the evaporation ponds during construction. This is particularly important if construction of the liners is delayed for any reason. It should be emphasized that available literature on this topic predicts an approximate 2 order of magnitude increase in permeability for a CCL that has undergone very few freeze-thaw cycles. | A 3-ft operations layer will be placed over all liner sections (geosynthetic and SBL layers) constructed prior to winter shutdown. If construction is expected to occur during periods of potential soil freezing, e.g., past November 1, a decision will be made by October 1 to deal with the situation. |
| 22 | Section 1.4, Work Plan Organization | 1-11 | The descriptions of Appendix N and O are not correct. Appendix N looks at Toxic Air Pollutants while Appendix O examines radionuclide emissions. TAP exposures are not expressed in mrem/yr. Correct/clarify the purpose of these appendices. | The text of Appendix N will be revised to remove in mrem/yr.<br><br>Title of Appendix N will be revised as discussed in Comment 9.<br><br>Units will be changed to $\mu g/m^3$.<br><br>Change text in Appendix O, page 1-11, second bullet, to add "radioactive prior to air emissions". |

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# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final ICDF RD/CWP, EDF-ER-274 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 23 | Section 5, 1st para, last sentence | 5-1 | The referenced text states, "*The leachate generated during the post closure period will be managed appropriately and in accordance with the operational requirements.*" This statement is very vague, and needs some clarification. The discussion should convey that as long as the landfill is generating leachate, it will be collected and managed in a manner that is protective of human health and the environment, and in accordance with all ARARs. | The text will be revised to read "As long as the landfill is generating leachate, it will be managed in a manner that is protective of human health and the environment, and in accordance with all ARARs." |

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| DOCUMENT TITLE: Draft Final ICDF RD/CWP, EDF-ER-275 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 24 | Section 2.1.2, Table 2-1 | 2-3 | The table is missing values for the recharge rates used in the simulations. Please correct. | The text of the EDF will be revised to add the recharge rate used in the simulations. |
| 25 | Appendix B, Section B3.4.3, Items 2 & 3 | 2-3 | Both items state that Figures B-3 and B–4 show lines representing 15 pCi/L and 4 mrem/year but neither figure shows these lines because of the scale. Please revise the text to reflect this fact. | The text of the EDF will be revised to indicate that the 15 pCi/L and the 4 mrem/yr lines are not shown due to the scale on the figures. |

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| DOCUMENT TITLE: Draft Final RD/CWP, Appendix C, EDF-ER-278 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 26 | Section 1.4, 2nd para | 1-3 | The expected leachate concentrations are based on the Facility Design Inventory, which is a limited collection of data. However, there is no discussion of the uncertainty associated with modeling to simulate leachate generation based on the design inventory versus actual leachate generated from wastes received. There should be an acknowledgement that the actual leachate concentrations may be significantly greater than the expected leachate concentrations based on actual waste loading. | As part of the 5-year review process, actual data will be compared with the model predictions. This will be outlined in the RAWP section dealing with 5-year reviews.<br><br>Also see response to Comment #17. |

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| DOCUMENT TITLE: Draft Final RD/CWP, EDF-ER-281, Appendix J | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 27 | Section 3.1.3.2, Figure 3-3 | 3-5 | This figure shows the projected extent of a 500 year flood plain by the U.S. Bureau of Reclamation for the INEEL. It is interesting to note the significant differences between this projection and the two current 100 year flood plain maps prepared by the U.S. Geological Survey and the U.S. DOE. The 100 year flood plain projections show significant portions of INTEC falling within the 100 year flood plain and the U.S. Geological Survey shows the limit of the 100 year flood plain lying near the northern edge of the ICDF. It is not clear how there can be this much disparity between the 100 year and 500 year flood plain projections. An explanation should be provided to address this disparity. | The text of the EDF will be revised to provide the different flood levels predicted by the different studies, and indicate that these levels do not impinge on the facility. Further, the text will be clarified to indicate that a conservative flood elevation approximately 8 feet higher than the highest of these predictions was used to assess cover performance.<br><br>The historical basis of flood elevation determinations will be cited in the text. |

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**DOCUMENT TITLE: Draft Final RD/CWP, EDF-ER-281, Appendix J**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 28 | Section 3.2.2, 2nd para, 4th sentence | | A significant release in the tertiary monitoring system shall not be required to determine a statistically significant detection in the ground water monitoring wells at ICDF. | This issue will be addressed in the RAWP during development of the detection monitoring evaluation criteria. |
| 29 | Section 3.7.3 | 3-11 | Sandberry bluegrass in the third bullet appears to be misspelled. It is assumed the correct name is Sandberg's bluegrass. Please correct. | The text will be revised to correct the name. |
| 30 | Section 5.2, 4th para | 5-1 | The paragraph states "The ICDF Complex is situated outside the Big Lost River floodplain." The statement should be qualified to clarify what criterion is inclusive in this statement because the gradation of the sediments present beneath the ICDF indicate the past occurrence of high energy stream flows in this location suggestive of flood type depositional environments. | The historical basis of flood elevation determinations will be cited in the text. The 100-year flood plain will be referenced. |

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| DOCUMENT TITLE: Draft Final RD/CWP, Appendix K, EDF-ER-280 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 31 | Section 3.2.1.1, last para | 3-3 | There appears to be a typographical error in the second sentence. The sentence should read: "The head on the liner is defined as one foot per 40 CFR 264.222." | The text will be corrected as noted. |

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# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, EDF-ER-279, Appendix M | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 32 | Section 4.2, 1st para | 4-3 | The paragraph states "A higher flux at the downslope region and a lower flux at the downslope region could occur due to lateral movement of moisture along the interface between the water storage layer and underlying gravel layers." This sentence requires editing as it is not feasible to have a "higher" and "lower flux" at the same location at the same time. Please modify this sentence. | The text of the EDF will be revised to correct this statement to read "A higher flux at the downslope region and a lower flux at the upslope region could occur…" |
| 33 | Sub-Appendix E, Section E.1 | E-4 | The text refers to Figure 2-5 but it is not clear what Figure 2-5 is intended because said figure cannot be located in this EDF. Please provide the correct figure number or cite the correct EDF for Figure 2-5. | The text will be corrected to reflect Figure E-1 as the cited figure. |
| 34 | Sub-Appendix E, Section E.2, 4th para | E-4 &E-5 | a) The paragraph refers to Table E-2 but this table is not provided. Please correct the reference or provide the correct table.<br><br>b) The paragraph states that "four times average precipitation scenario resulted in breakthrough of the water storage layer….." but this statement is not consistent with Table E-1 that notes "Negative values indicate upward flow." The statement is consistent with Figure E-2. Please correct as needed.<br><br>c) It is not clear what the fourth sentence is trying to state. Please clarify the intent of the sentence. Also, if the intent is to describe a mass balance error at this node or nodes, please so state and indicate the magnitude of the error.<br><br>d) Note #3 on Table E-1 states "Shaded cells indicated the year of quasi-steady state conditions." The table does not include any shaded cells. Either delete the note or add the shaded cells to the table. | a.) The text will be corrected to Table E-1.<br><br>b.) The table will be fixed and coordinated with the footnote.<br><br>c.) The intent of the sentence will be clarified in the text. The intent is to indicate a large mass balance error at this node for this condition. The magnitude of the error is not needed as this breakthrough value is not used in computations and is shown as an approximate line on Figure E-2.<br><br>d.) The shading will be clarified on the table. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, EDF-ER-279, Appendix M**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 35 | Sub-Appendix E, Section E.4, Assumption #5 | E-26 | Assumption #5 states "The cover must be saturated for breakthrough to occur." The statement could be misinterpreted to indicate the entire cover has to become saturated for breakthrough to occur which is not the case. The assumption is that a saturated condition must develop at the capillary break and that the saturated condition would not cause breakthrough until the length is approximated by the distance calculated using the equation noted. Please state the assumption more clearly. | The text of the EDF will be clarified to reflect that saturation of the water storage layer above the capillary break must occur for breakthrough to occur, and that the saturated condition would not cause breakthrough until the length is approximated by the distance calculated in the equation. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, Appendix P, DOEID-10865 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 36 | Section 1.1 | 1-4 | Another purpose of the WAC, as depicted in Figure 4-1, is to determine and address all ARAR-based criteria, and constituent-based regulatory limits. The Idaho Toxic Air Pollutant regulations, which were identified as ARARs for this remedy, establish constituent-specific regulatory limits for operations based offsite impacts. As stated in Comment #9, the compliance demonstration for the TAP was conducted on the design inventory, which are several orders of magnitude below the Table 5-2 WAC limits. Sub-Appendix B of Appendix N shows that there are as many as 80 compounds for which the WAC concentrations would have to be operationally controlled to ensure compliance with the .585 and .586 standards. To address the TAP constituent-specific regulatory limits, the WAC text must stipulate that for any TAP compound for which the WAC concentration is predicted to result in an exceedance of the TAP standard, the emissions for that compound will be controlled by operational procedures. Further, the text must state that these procedures will be specified in the Remedial Action Work Plan. | The text of Section 3.3.6 of EDF-ER-286 will be revised to eliminate the staging of soft debris in the cell prior to disposal.<br><br>The procedure for developing the operational limits is outlined on pages 4-1 and 4-2 of the EDF.<br><br>A reference to EDF-ER-315 will be added to Table 4-1 of the WAC. The summary will state that emissions will be controlled by operational limits.<br><br>The operational limits for those controls will be in the ICDF RAWP.<br><br>The title of the document will be changed to "IDAPA Preliminary Air Screening Results." The RAWP will include the IDAPA 58.01.01.585/.586 compliance document. |
| 37 | Section 4.1.3, 3rd para | 4-2 | The last sentence of this paragraph is very vague: *"To the extent possible, incompatible wastes will not be placed close to each other in the landfill."* Please note that the RA Work Plan must include specific operational procedures that will ensure that incompatible wastes are not landfilled to demonstrate compliance with 40 CFR 264.313. | This will be addressed in the RAWP. |
| 38 | Section 5.1.10, Organic Waste >500 ppm | 5-2 | IDEQ believes this section should be labeled volatile organic wastes. Limiting the volatile organic constituents to less than 500 ppm would be consistent with Table 5-1 on page 5-3. | The document will be revised per the comment. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, Appendix P, DOEID-10865 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 39 | Table 5-1 | 5-3 | The reference is incorrect. The correct reference for wastes containing >500 ppm volatile organics should read 40 CFR §264.1082(c)(1). | The document will be revised. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, Appendix Q, DOE/ID-10866 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 40 | Section 4.1.2, 3rd para | 4-1 | The text references a Table 4-2 yet only Table 4-1 is provided. Please provide Table 4-2. | The reference to Table 4-2 will be changed to 4-1. |
| 41 | Section 4.3, 2nd para, Item No. 1 | 4-6 | The second sentence of item # 1 states: *"Routine sampling frequencies and parameters will be developed for the facility as part of the ICDF Complex."* Identify in the text specifically where and when this will be presented to the regulatory Agencies. | The ICDF RAWP will have a section discussing environmental compliance, including sampling parameters and frequencies.<br><br>"RAWP" will be added to the end of the second sentence. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, Screening Level Ecological Risk Assessment, (Draft Final Title II), Appendix R, EDF-ER-311 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 42 | General | | The incorporated exposure parameter modifications have eliminated some of the over-conservatism in the original SLERA, so the assessment should more accurately reflect likely exposures to ecological receptors at this facility. One of the critical assumptions is that human activity will discourage use of the area by ecological receptors. It will be necessary to monitor the site carefully during operations to ensure that this assumption is valid. It will also be important to perform this monitoring during non-operational periods. The SLERA results indicate that ecological risk during the operational period should be acceptable. Long-term risk, during and following the institutional control period, will also have to be assessed, based on a set of appropriate assumptions. | Comment noted. The issue of monitoring ecological receptors will be addressed in the RAWP. There should be no long-term risk to ecological receptors from ICDF since post operation; a cap (including a bio-barrier) will be placed on the landfill (which eliminates the pathway to the contaminants). Closure of the ICDF evaporation pond will be completed following the operational period of the pond. The closure goal for the evaporation pond is clean closure. |
| 43 | Section 1.1.2.4, "Fauna" | 21 | There is some redundancy in this and the following section. Section 1.1.2.4 begins with a discussion of T/E species, and references Table 5, but then discusses functional group methodology, species likely to be present in the assessment area, and the food web model. Section 1.1.2.5 then discusses T/E species again, and references Table 5 again. The document would be clearer if the T/E discussion were dropped from Section 1.1.2.4. | Comment accepted. The first two sentences of Section 1.1.2.4 will be deleted and replaced with the following "For the initial assessment species were grouped using a functional grouping approach as discussed in detail in VanHorn Hampton and Morris (1995)." This statement, which occurs later in this section, will be deleted. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, Screening Level Ecological Risk Assessment, (Draft Final Title II), Appendix R, EDF-ER-311**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 44 | Section 4, "Hazard Quotient Analysis" | 68 | The rationale for not evaluating plant receptors is based on the assumption that the area will be kept vegetation-free. Will this condition be maintained in the post-operational, institutional control period? The implications of plant growth following the operational period should be discussed. | Comment accepted. A statement to the similar to the following will be added in this section:<br><br>Plants were not assessed within this ERA because all vegetation will be removed from the site and growth during the operational period will be hindered. Specifically, during operation of the landfill, the area where deposition of contaminated soil is occurring will be kept clear of vegetation. Erosion control will be maintained using plants; however, the areas vegetated will be on the sides of the landfill and should not have contact with contaminated soil. Post-operationally, the ICDF landfill will be capped with a robust state-of-the-practice cover with a middle section designed to eliminate biointrusion (burrowing animals) and a capillary break to eliminate root intrusion (EDR-ER-279 (60%)). |
| 45 | Section 7, 2nd para | 76 | It is stated that plants will be discouraged from growing in the ICDF area except for erosion control. Please discuss the use of plants for erosion control, including any potential impacts on ecological receptors associated with these plants. | Comment accepted. The following sentence will be added after the statement about the use of plants for erosion control: "Erosion control will be maintained using plants; however, the areas vegetated will be on the sides of the landfill and should not have contact with contaminated soil." |
| 46 | Section 7, paragraphs 2 through 4, and Table 19 | 77 | The findings of Cieminski (1993) should be useful in the maintenance of conditions that will discourage use of the pond by wildlife. Also, while maintenance of bare shoreline will discourage pond use by a number species, monitoring efforts will need to ensure that this condition does not prove to be attractive to sandpipers and other shorebirds, or to Brewer's blackbirds. | Comment noted. Monitoring ecological receptors will be addressed in the RAWP. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 47 | General | | It is repeatedly referenced throughout this appendix, that standard statistical techniques may not be appropriate for the perched water, that increases in concentration may result from water levels dropping, and that a plan for evaluating the detection monitoring data will be part of the RAWP. At this time, it is purely speculation what will be observed in the perched monitoring wells. Therefore, it will not be possible to pre-ordain in the RAWP how the data will be evaluated to determine whether a potential positive detection results from a source other than the ICDF complex. Sampling data must first be collected and reviewed before the Agencies establish detection monitoring criteria. | For the perched groundwater, the RAWP will describe the general approach for evaluation of the detection monitoring criteria. The final approach will be determined following evaluation of the baseline data. Upon receipt of QA/QC data, a submission to the Agencies will be provided that describes the approach for detection monitoring data evaluation. This specific approach for the perched groundwater will be a modification to the RAWP when sufficient data are available.<br><br>The SRPA detection monitoring approach shall be provided in the RAWP. The criteria will be developed prior to placing waste in the landfill. |
| 48 | Section 1.2.3, 1st para, 1st sentence | | a) This section applies to both the SRPA wells and the perched water wells. Please modify the text.<br><br>b) Notification should occur within seven days. | a) The text was revised to "If evidence of increased contamination in the perched groundwater or SRPA is determined based upon evaluation of the detection monitoring data,…"<br><br>b) DOE will provide both validated and unvalidated data in accordance with section 19 of the FFA/CO. |
| | Section 1.2.3, 2nd bullet | | Delete "baseline" from this sentence. The requirements to initially re-sample per 40 CFR 264.98 (g) (3) do not hinge on this condition. Additionally, the process to demonstrate that the exceedance results from a source other than the ICDF will require Agency concurrence on a separate demonstration which makes that case. | For the SRPA, the term baseline will be defined to indicate the upgradient well(s) and the downgradient wells prior to landfill operation. For this project, where the preexisting water quality is contaminated, the baseline concentrations will be considered background for the purposes of the substantive RCRA requirements. We will add a discussion that baseline concentrations will be established as "background", which is different from uncontaminated concentrations upgradient of INEEL facilities. Then the term background can be used as requested. The DOE will make the demonstration that evidence of contamination is from ICDF or a source other than ICDF in accordance with 40 CFR 264.98 (g)(6) and submit this to the Agencies. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 50 | Section 1.2.3, bullet 2 | 1-6 | The partial sentence at the top of the page should read "then CFR 264.99 requirements are triggered." Please correct this citation. | Agree. Text will be modified as suggested. |
| 51 | Section 1.2.3, 2nd para | 1-6 | The references to 40 CFR § 264.98(4) are incorrect. There is a 40 CFR § 264.98(a)(4) and a 40 CFR § 264.98(g)(4). The reference to 40 CFR § 264.98(5) is also incorrect, it should read …264.98(g)(5). | Agree. References will be corrected to 264.98(g)(4) and (g)(5). |
| 52 | Section 1.2.3, 2nd para | 1-6 | Supporting historical data in the proximity of the ICDF for increased constituent concentrations due to water level declines should be submitted to the Agencies as soon as possible to verify these concentration increases. | See response to Comment #47 from IDEQ. |
| 53 | Section 2.2.3, 1st para, 2nd sentence and 3rd para, 5th sentence | 2-15 | IDEQ stated in the February 7, 2002 comments on the draft ICDF RD/RA work plan (Comment # 211), the first referenced paragraph quotes selected excerpts from the TEGD. However, although not quoted in the RD/RA WP, the TEGD (Section 1.4, Page 35) also states that *"Quality or use of groundwater are not factors in the definition. Even through a saturated zone may not be presently in use, or may contain water not suitable for human consumption, it may deserve protection because contaminating it may threaten human health or the environment."* Because this is a perched zone over the SRPA, a sole source aquifer, the upper perched zone meets the definition of the uppermost aquifer. Modify the referenced sentence in the third paragraph. | The sentence will be modified. DOE does not agree that the perched water meets the definition of an aquifer but agrees with monitoring perched water to be compliant with RCRA detection monitoring.<br><br>Fifth sentence, third paragraph, remove "Although" and "is not an aquifer, it" |
| 54 | Section 2.2.3, paragraphs 1-3 | 2-15 | These paragraphs attempt to make the case that only the regional aquifer is of concern and the only ground water that needs to be monitored is in the regional aquifer. Perched aquifers do occur at the site when surface water sources supply enough water and the hydrostratigraphy is conducive to develop perching. Monitoring these perched aquifers is needed to be protective of the ground water resources of the state per Idaho rule (see definition of ground water, IDAPA 58.01.11.008), to comply with the substantive requirements | DOE does not agree that the perched water is an aquifer but agrees with monitoring perched water to be protective, and provide early warning as part of the RCRA detection monitoring network. No change to text. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| | | | of 40 CFR 264.97, and to provide an early warning of potential contamination that can impact the regional aquifer underlying the perched aquifers(s) before that regional aquifer is impacted. | |
| 55 | Section 2.2.4, 1st para | 2-16 | IDEQ does not agree with the statement that a fundamental aspect of this monitoring strategy will be to analyze leachate samples from ICDF. A statistically significant "detection criteria" will be established using background data. If this criteria is exceeded it shall be considered a "hit" unless the operator can prove the detection was not caused by one of the regulated units in accordance with 40 CFR § 264.98(g)(6). The detection criteria will not be established until data are available and have been reviewed from the new ICDF monitoring wells. | The word "fundamental" has been deleted. The last sentence does not belong in this paragraph and will be deleted. |
| 56 | Section 2.2.5, 2nd para, 2nd & 3rd sentence | | The IDEQ does not agree that sharp increases in concentration are expected in the new ICDF complex perched water monitoring wells. References to WAG 2 wells do not necessarily apply to ICDF wells, and a similarity between the perched water systems at WAG's 2 and 3 cannot be established without data. | Perched water wells at TRA and INTEC are completed in similar geologic environments with similar contaminants. Knowledge learned from declining perched water levels due to shutting off some surface water pathways and increasing concentrations at WAG-2 is useful in determining possible similar outcomes at WAG-3.<br><br>For clarity, the text will be changed from "are expected" to "may occur".<br><br>The 3rd sentence will be modified to end after the word "groundwater". |
| 57 | Section 3.2.2, 2nd para | 3-2 | The next to last sentence in this paragraph incorrectly ties a detection in the tertiary monitoring system to confirmation sampling in "any downgradient groundwater monitoring well…." Confirmation sampling should occur regardless of whether or not detections are found in the tertiary monitoring system. The tertiary monitoring system only underlies a portion of the landfill cells so only leakage from the cells along the sump would be detected. A catastrophic | We agree that confirmation sampling should occur regardless of whether or not detections are found in the tertiary system. Confirmatory sampling can include more than just the well that had a hit. The text will be modified. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| | | | failure of the cells' liners outside the bounds of the tertiary system will not be captured in the tertiary leachate, nor would a release from the evaporation ponds be detected in the ICDF landfill's tertiary monitoring system. Perched aquifer wells may not provide adequate water for resampling and a contingency approach should be developed to accommodate this problem. | |
| 58 | Section 3.3, Item 6 | 3-3 | Item 6 should be broadened to encompass both declining perched aquifer water levels as well as rising water levels. Both conditions could affect the water quality data. | Comment accepted. Text modified. |
| 59 | Section 3.4, 2nd para | 3-4 | Replacement perched aquifer wells, or Snake River Plain Aquifer wells, would be considered should the well fail because of a collapsed screen or casing, dropped and non-recoverable equipment in the well, or other similar occurrences. | The following text will be added: "If the well's integrity is compromised prior to going dry, the well will be fixed or replaced." |
| 60 | Section 3.6, 3rd para | 3-5 | It is recommended that this paragraph and the two bullet items be deleted. This topic is better addressed in the ICDF Complex RAWP where it can be more fully developed. | This text will be deleted. |
| 61 | Section 3.7, 2nd para | 3-5 | A caliper log also should be considered as a minimum requirement along with the stated neutron and gamma gamma logs. Please add the caliper log to this statement. | USGS typically runs caliper logs. Text will be modified to indicate that geophysical logs will be used to determine optimum well completion. If hole stability is an issue, it may not be possible to conduct a full suite of geophysical logs. |
| 62 | Section 3.7, Figure 3-2 | 3-7 | The conceptual design for the Snake River Plain aquifer wells only allows for a one nominal diameter difference between intermediate carbon steel casings. A more typical industry approach is to allow two nominal diameter differences to facilitate annular sealing when the wells or casings are not straight. Please consider allowing for two nominal diameter differences; it is recognized that a greater cost may be incurred because of the larger hole diameters that are needed. | Two nominal casing sizes will be used for all permanent casing. This design allows more than adequate annular space for a 1" or 1¼" tremie pipe. |
| 63 | Section 3.7, 2nd para | 3-8 | A caliper log also should be considered as a minimum requirement along with the stated neutron and gamma | USGS typically runs caliper logs. Text will be modified to indicate that geophysical logs will be used to determine |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| | | | gamma logs. Please add the caliper log to this statement. | optimum well completion. If hole stability is an issue, it may not be possible to conduct a full suite of geophysical logs. |
| 64 | Section 3.7, Figure 3-3 | 3-9 | Consideration should be given to using stainless steel screen and riser for the deepest perched aquifer installation. The greater material strength may be worth the cost because of the greater stresses that may be imposed on the deep well installation. | Schedule 80 PVC is adequate for the 400 ft depth. |
| 65 | Section 3.7, Figures 3-4 & -5 | 3-11, 3-12 | It is not clear on these figures what constitutes the "tertiary leak detection system". Please provide clearer figures with labels identifying the "tertiary leak detection system" and its components. | The tertiary system will be labeled on the figure. |
| 66 | Section 4.1.1, Table 4-2 with Figure 3-1 | 4-1 & -2 to Page 3-6 | **a)** The rationale for well PW-15 requires modification. Although the adjacent well PW-6 is the shallow component well for this pair, it is not the sole depth interval that could be influenced by the Big Lost River when it flows. In fact, it is more likely that the deeper completions will see an influence from the Big Lost River than will the shallow completion. Please add this rationale to the medium and deep completions for well PW-15.<br><br>**b)** The rationale for the deep completion for well PW-18 is the same as for the medium depth. Please add the rationale.<br><br>**c)** The rationale for well PW-19 to the west of cells 1 and 2 is the same for all three depths. Monitor for possible intermittent flows of the Big Lost River and determine if percolation pond influence extends west of the ICDF. Please modify the rationales.<br><br>**d)** The rationale for well PW-20 is the same for all three depths and includes determining if the percolation pond influence extends south of the ICDF. Please modify the | The rationales were supposed to refer to all depths, but inadvertently were formatted to appear otherwise. The table has been reformatted to indicate that the rationales apply to all depths. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| | | | rationale. | |
| 67 | Ssection 4.3.1, Table 4-4 | 4-3 | Please verify that the detection limit for I-129 is only 1 pCi/L using LSC. Information provided on another project cites a detection limit of 0.1 pCi/L for the same method. | Ultra-low-level Liquid Scintillation Spectrometry run by Acculabs was capable of getting down to 0.1 pCi/L. Standard LSC gets down to 1 pCi/L. Acculabs has declared bankruptcy. TRA uses high efficiency LEPS to reach 0.1 pCi/L. Eight liters of water are needed to get down to 0.1 pCi/L. Therefore, it may be difficult to collect sufficient water from the perched wells to achieve the 0.1 pCi/l. If insufficient water is available, a smaller sample volume will be collected to achieve the lowest possible detection limit for the perched water wells. 0.1 pCi/L will be used as the detection limit for baseline sampling. Text will be modified. |
| 68 | Section 4.3.2, Table 4-5 | 4-3 & -4 | The description for collecting duplicate samples should be modified to include one duplicate sample per 20 samples collected except where both perched aquifer and Snake River Plain Aquifer wells are sampled during the same sampling event. In that case, a duplicate sample from each type (perched aquifer and regional aquifer) should be collected even if the number of duplicate samples exceeds the one per 20 criterion. The additional duplicate sampling may be removed in the future if the data so warrant after discussions between the agencies. | Perched water and SRPA water are the same media and one duplicate will be collected per 20 samples. No change to text.<br><br>Will collect both the filtered vs unfiltered water samples for metals samples only. If insufficient water is available, only the unfiltered sample for metals will be collected for baseline purposes only. An additional duplicate water sample will be collected from the unfiltered perched water sample.<br><br>The notation concerning the duplicate sample collection frequency will be clarified to indicate that a minimum of 1 duplicate sample will be collected for every 20 samples per sample event. |
| 69 | Section 5.3 | 5-1 & 5-2 | **a)** This section should be split into two short subsections on purging. The first subsection should cover purging by pumping. The discussion about purging by bailing should form the second subsection and follow the same bullet format as the first.<br><br>**b)** The first bullet should be modified to reflect the fact that the water level should continue to decline without recharge during pumping but the intent is to minimize | Text was inadvertently left out which will clarify a) and b).<br><br>The text will indicate that a minimum period of 15 hours will be used. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final RD/CWP, DOE/ID-10955, Appendix S | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| | | | drawdown during pumping.<br><br>**c)** The purging by bailing subsection should present the option of returning within 24 to 36 hours to sample the well if the well was bailed dry during purging. The perched aquifers are expected to be low yield and sampling procedures may have to be modified after some experience has been gained. | |
| 70 | Section 7.1.5 | 7-2 | A "completeness goal of 60% for the downgradient wells" is too low. The completeness goal should be 80%, which equates to missing one of the 5 down gradient monitoring wells during a sampling event. Please modify this goal. | Text will be modified. |
| 71 | Appendix A | | This appendix, although brief, is a useful addition to the overall report. Inclusion of this appendix is appreciated. | Thank you. No response required. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

| DOCUMENT TITLE: Draft Final ICDF RD/CWP, Appendix W, DOE/ID-10958 | | | | |
|---|---|---|---|---|
| **Item** | **Section/ Figure/ Appendix** | **Page** | **Comment** | **Resolution** |
| 72 | Section 4.3.2, 2nd para | 4-3 | The second sentence states: *"The container will be held in a CSA pending a HWD."* A specific timeframe should be defined for completing a Hazardous Waste Determination. | The language will be changed to read "The HWD must be conducted within 6 months of staging the container within the CSA." |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

**DOCUMENT TITLE: Draft Final ICDF RD/CWP, Appendix X, DOE/ID-10851**

| Item | Section/ Figure/ Appendix | Page | Comment | Resolution |
|---|---|---|---|---|
| 73 | Table II-5 | II-18 | This QA table indicates that 3% and outliers are allowed to fail the density requirements for the CCL. Section 4.2.1.2 of DOE/ID – 10851 states that any in-place density requirements which fail require two adjacent passing tests to satisfy requirements. This appears inconsistent, please clarify. Also, please clarify what is meant by outliers, and why additional testing is not required to ensure "outliers" do not indicate actual areas of substandard liner construction. | Text change will be made as follows to this document: "The 3% allowable failing tests are planned to cover mistakes that are made and discovered after the CCL is covered. This could include math errors, etc." "Outliers" will be deleted and will be included in the 3% allowable failing tests." Adjacent testing based on a failing test will be within 3 ft. |

# ICDF 90% DRAFT FINAL DESIGN PACKAGE

# DRAFT FINAL DOCUMENT REVIEW, COMMENT, RESOLUTION LIST – IDEQ

Table 2-1. Summary of acceptable types of wastes for the ICDF evaporation pond WAC.

| Waste Type Accepted at the ICDF | Content Accepted |
|---|---|
| ICDF leachate | All ICDF leachate is acceptable. LDRs do not apply, because the ICDF evaporation pond is a CAMU for the ICDF leachate. |
| ICDF Complex operations waste | Aqueous waste from ICDF Complex operations must meet the applicable hazardous and radioactive ICDF evaporation pond WAC. |
| WAG 3 and ICDF Complex groundwater monitoring waste | Groundwater monitoring waste (e.g., purge, development, sampling, and decontamination water) will be accepted at the ICDF evaporation pond if it meets the hazardous and radiological evaporation pond WAC. |

# Appendix FF

# Permeable Reactive Barrier Decision Analysis

# EDF-ER-273

**TO VIEW APPENDIX FF SEE:**

**DOCUMENT ID NUMBER – EDF-ER-273, REV.02**

# Appendix GG

# Leachate Generation Study

# EDF-ER-269

**TO VIEW APPENDIX GG SEE:**

**DOCUMENT ID NUMBER – EDF-ER-269, REV.01**