1 of 1

**COMMENT AND RESPONSE DOCUMENT
FOR THE FINAL
LONG-TERM SURVEILLANCE PLAN
FOR THE
GREEN RIVER, UTAH,
DISPOSAL SITE**

August 1994

**This document supersedes document no.
UMTRA-DOE/AL-350206.CARD**

Prepared for

**U.S. Department of Energy
UMTRA Project Office
Albuquerque, New Mexico**

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UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 1: Section 2.1.1

The third paragraph indicates that the disposal cell has a gently sloping top of five percent, but Figure 2.2 does not indicate a top slope, only side slopes of twenty percent. This discrepancy should be corrected.

SECTION 2

Response: Page 2-3

By: J. Crain

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Section 2.0, including Section 2.1.1, was reformatted to better follow the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*. As such, the last sentence of the second paragraph in Section 2.2.3 has been revised to coincide with Figure 2.2.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 2: Section 2.1.1

The third paragraph also states that the radon barrier is one-foot thick and has five feet of sand, gravel, and select fill above it. This is in contrast to Figure 2.4, which is in agreement with the CR in indicating that the radon barrier is three-feet thick and has one and one-half feet of material (sand and gravel) above it. The cover description should be corrected.

SECTION 2

Response: Page 2-5

By: J. Crain

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Section 2.0, including Section 2.1.1, has been reformatted to better follow the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*. As such, the text on page 2-5 has been revised to coincide with Figure 2.4.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 3: Section 2.1.2

The legal description in this section differs from the one on the disposal site map (Attachment 2) in that N46degrees40'09"W and N76degrees27'51"W have "S" instead of "N" on the map. The map has also repeated one term (S79degrees02'45"E) instead of using N51degrees27'32"E. In addition, the description in the section has omitted the ending "E" in N50degrees20'35"E. These discrepancies should be corrected.

SECTION 2

Response: Page Att. 2 By: C. Silva Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The entire LTSP has been reformatted to better follow the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*; therefore, Section 2.1.2 has been deleted. The correct legal description has been provided in Attachment 2.

Both the text and the disposal site map (Plate 2) were corrected.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 4: Section 2.2.2

The first paragraph indicates that DOE is in the process of executing agreements for access to the disposal site. Right-of-way access agreements need to be completed and documented in the final LTSP.

SECTION 2

Response: Page 2-3 P. Martinez
By: T. Monaghan Date: August 8, 1994

Further research uncovered rights of way and access to the site in accordance with a Quitclaim Deed between the state of Utah and UMETCO, recorded December 8, 1988, in Grand County, Utah.

Plans for Implementation:

Section 2.2.2 was revised to reflect current information.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 5: Section 2.2.4

The fourth paragraph (the first sentence at the top of page 2-7) indicates that Type A riprap is defined as having a median-minimum diameter (D50) of 18 inches by weight. There are two errors in this terminology. First, riprap is not referred to in terms of a diameter by weight. This should be corrected to simply say inches. Second, Calculation 10-536-02-04 in the CR (Vol. 4A, page 6/13) indicates that Type A riprap has a D50 of 6 inches while Type B riprap has a D50 of 18 inches, based on a certain procedure. Later in that calculation (page C-3), Type A riprap for this site was determined to have a lower-bound D50 of about two inches. This size rock was used (Vol. 2) because the rock durability score was greater than 80, and over-sizing was not necessary. The LTSP statement should be corrected to correspond to the CR, assuming that the report is correct.

SECTION 2

Response: Page 2-5 By: J. Crain Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The text was revised to coincide with the Green River Completion Report.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 6: Section 2.2.4

The sixth sentence in the fourth paragraph should indicate that Type B riprap used in the toe of the cell had a D50 of 18 inches, not 6 inches (see above discussion).

SECTION 2

Response: Page 2-5

By: J. Crain

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The text was revised to coincide with the Green River Completion Report.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 7: Section 3.0

The last sentence of the paragraph states that new aerial photographs will be taken "at regularly scheduled intervals." However, Section 3.6 of the guidance document and Section 3.3 of the LTSP say the need for new aerial photographs will be assessed at regular five-year intervals, unless unusual conditions require more frequent assessment. These sections should be consistent.

SECTION 2

Response: Page 3-3 By: T. Monaghan Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The text was revised for consistency.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 8: Section 3.1

The first sentence states, "A site atlas has been prepared that includes a vicinity map, a topographic map, and a disposal map (refer to Attachment 2)." Attachment 2 includes only one map, and it is labeled "Final Topographic Map." However, the Attachment 2 cover sheet says "disposal site map," and the map has the information required of a disposal site map. DOE should correct this discrepancy.

SECTION 2

Response: Page 3-1

By: T. Monaghan

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The first sentence of Section 3.1 has been revised to accurately reflect that the site atlas contains a disposal site vicinity map and a disposal site map. Also, the map titles were corrected for Plates 1 and 2.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 9: Section 3.1

The vicinity map should be of a smaller scale than the map in Attachment 2 and contain some different information (according to Section 3.1.1). A copy of the disposal site vicinity map should be provided in the LTSP or referenced if it is included in another document the NRC staff has received.

SECTION 2

Response: Page 3-1, Plate 1 By: T. Monaghan

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The first sentence in Section 3.1.1 has been revised by referencing the disposal site vicinity map in the LTSP and including the map as Plate 1, previously Attachment 2.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 10: Section 5.2.3

The first paragraph references 40 CFR 192.02(a)(4) as allowing indirect monitoring as an additional measure to ensure groundwater protection. However, 40 CFR 192.02(a)(4) simply states that, "Control of residual radioactive materials and their listed constituents shall be designed to comply with the performance standards in Part 264.111(a) and (b) of this chapter." Part 264.111(a) and (b) makes no mention of indirect monitoring to achieve groundwater protection. The indirect monitoring, neutron moisture monitoring (NMM), described in this chapter was a specific agreement in the RAP. The narrative concerning the rationale for indirect monitoring should be revised to accurately describe the basis for the monitoring.

SECTION 2

Response: Page 5-10

By: G. Ruskauff

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Pursuant to 40 CFR § 192.02 (a(4)), the DOE implemented a monitoring program which is adequate to demonstrate that the initial performance of the disposal cell is in accordance with design requirements. The method for performance monitoring of the disposal cell is described in the Long-term Surveillance Plan (LTSP). The initial proposal to monitor the moisture contents of the contaminated layers of the disposal cell is abrogated, and the DOE will decommission the neutron probe access tube in accordance with the requirements of Standard Operating Procedure 16.1.15, "Neutron Probe Access Hole Decommissioning" (JEG, n.d.).

Section 5.2.3 (which contains the reference to 40 CFR 192.02 (a(4))) has been deleted.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 11: Section 5.2.3

The sections describing the findings regarding the neutron moisture monitoring are not consistent with the recent findings of the NRC staff concerning the effectiveness of DOE's monitoring program. NRC's concerns regarding the NMM measurements are presented in the letter to the Uranium Mill Tailings Remedial Action (UMTRA) Project Office dated November 13, 1992. The concerns expressed in that letter must be addressed before this issue can be resolved in the LTSP.

SECTION 2

Response: Page 5-10

By: G. Ruskauff

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Pursuant to 40 CFR § 192.02 (b), the DOE implemented a monitoring program which is adequate to demonstrate that the initial performance of the disposal cell is in accordance with design requirements. The method for performance monitoring of the disposal cell is described in the Long-Term Surveillance Plan (LTSP). The initial proposal to monitor the moisture contents of the contaminated layers of the disposal cell is abrogated, and the DOE will decommission the neutron probe access tube in accordance with the requirements of Standard Operating Procedure 16.1.15, "Neutron Probe Access Hole Decommissioning" (JEG, n.d.).

Section 5.2.3 (which contains the reference to 40 CFR 192.02 (b)) has been deleted.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 12: Section 5.3.1

The discussions concerning the 'Observational Approach' are not appropriate for compliance with the long-term care rule of 10 CFR 40.27. The 'Observational Approach' is an engineering methodology that allows the construction of a project without absolutely defining all uncertainties before construction begins. This is accomplished by making observations of identified uncertainties during the course of the project and making adjustments in the construction, as needed, to meet the objectives of the design. Under the long-term care rule (10 CFR 40.27), the performance of the completed remediation is monitored and corrective action is implemented, as soon as practicable, if the performance standards are not met [40 CFR 192(c)]. The NRC staff does not believe that the 'Observational Approach' will serve to 'streamline' this regulatory framework. All discussions concerning the 'Observational Approach' should be deleted from the LTSP.

SECTION 2

Response: Page 5-11

By: G. Ruskauff

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Section 5.3.1 has been revised and references to the 'Observational Approach' omitted.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 13: Section 6.3

Bullet four of the first paragraph should include NRC in the list for notification that an inspection will be conducted.

SECTION 2

Response: Page 6-2 By: T. Monaghan Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The text was revised by including the NRC in the inspection notification list.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 14: Section 6.4.2

If the successful establishment of vegetation around the embankment is of concern, the section should include the seed mix used for revegetation and provide criteria for making the determination of successful establishment of vegetation, as detailed in the guidance document. This section should also mention that volunteer plant growth, particularly on the cell, is to be described in the inspection report.

SECTION 2

Response: Page 6-4 By: C. Burt Date: August 8, 1994

The concern relating to the establishment of vegetation around the embankment is minimal at this point. The original seed mix of shadscale, rincon fourwing saltbush, castle valley clover saltbush, alkali sacaton, sand dropseed, and paloma indian ricegrass failed to germinate. The establishment of Russian thistle is currently dense enough to provide adequate protection. The successional process whereby natural vegetation will eventually take over this area should continue over the next few years. The present vegetation cover will probably not change much. The criteria for determining successful vegetation would be based on a subjective view of percent cover and its comparison to the natural setting.

Plans for Implementation:

Section 6.4.2 was revised by including the need to describe all volunteer plant growth in future inspection reports.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 15: Section 7.2.1

The second statement under the second bullet should be corrected to say "... magnitude 4.0 (Richter scale) or greater," (see letter to National Earthquake Information Center in Attachment 6).

SECTION 2

Response: Page 11-2, Att. 6 By: T. Monaghan Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The earthquake notification information has been moved from Section 7.2.1 to Section 11.3 to better follow the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*.

In accordance with the National Earthquake Information Center's latest letter dated December 14, 1992, the magnitude should be 3.0 or greater, within 0.3 degree (about 20 mi [30 km]) of the site. This letter has been added to Attachment 6 of the Green River LTSP.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 16: Section 8.3

The last sentence should indicate that copies of all relevant documents will be transmitted to the state and will be included in the annual report to NRC.

SECTION 2

Response: Page 8-2 By: T. Monaghan Date: August 8, 1994

All annual inspection reports will be sent to the NRC. Copies of other records, documentation, and certifications will be kept in the permanent site file and will be included in the site inspection report and the annual report to the NRC.

Plans for Implementation:

The sentence has been revised to indicate relevant documentation is included in the annual report, which is sent to the NRC and state.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 17: Section 9.3

The first paragraph should indicate that the preliminary (assessment) site inspection report will also be submitted to NRC within 60 days of the inspection.

SECTION 2

Response: Page 9-1

By: T. Monaghan

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Submittal of the preliminary assessment report to the NRC within 60 days of the initial inspection was added to the paragraph in Section 9.0 to conform to the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 18: Section 10.0

This section of the LTSP has omitted the subsection summarizing required reports. It should be expanded to correspond to Section 10.0 of the guidance document.

SECTION 2

Response: Page 10-1 through 10-3 By: T. Monaghan Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Section 10.0 was revised to correspond with the DOE's *Guidance for Implementing the UMTRA Project Long-term Surveillance Program*.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 19: Section 11.2

Bullet two should be corrected to say "... magnitude 4.0 (Richter scale) or greater," (see letter in Attachment 6).

SECTION 2

Response: Page 11-1

By: T. Monaghan

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Section 11.2 is now Section 11.3, Earthquakes, which was revised to correspond with the National Earthquake Information Center's latest letter dated December 14, 1992, that states "any earthquake of magnitude 3.0 or greater, within 0.3 degree (about 20 mi [30 km]) of the site." This letter has been added to Attachment 6 of the Green River LTSP.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: January 5, 1993

Document: Long-Term Surveillance Plan

Reviewer: U.S. Nuclear Regulatory Commission

Comment 20: Section 12.0

The Quality Assurance Program Plan should be referenced and a copy of the plan provided to NRC.

SECTION 2

Response: Page 12-1

By: C. Silva

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The Grand Junction Project Office Quality Assurance (QA) Program Plan has been cited in the first paragraph of Section 12.0. A complete reference of the QA plan has been added to Section 14.0. An uncontrolled copy of the QA program plan has been included for your files.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah Date: January 5, 1993
Document: Long-Term Surveillance Plan
Reviewer: U.S. Nuclear Regulatory Commission

Comment 21: Attachment 3

Attachment 3, Site Ownership/Custody Documentation/Access Agreements, states only that the information is forthcoming. The required information must be included in the final LTSP.

SECTION 2

Response: Page Attach. 2 By: P. Martinez
T. Monaghan Date: August 8, 1994

Site ownership, custody documentation, and access to the site in accordance with a Quit Claim Deed between the state of Utah and UMETCO, recorded December 8, 1988, in Grand County, Utah, has now been compiled and is correctly referenced in Attachment 2.

Plans for Implementation:

Attachment 3, now Attachment 2, was revised to reflect current information.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: December 29, 1992

Document: Long-Term Surveillance Plan

Reviewer: Grand Junction Projects Office

Comment 1: Page 3-2

Map scales stated in the report text are shown as 1:1000 ft., for example. We think this means one inch equals 1000 feet. Map scales are more correctly listed in like units (1 inch equals 1000 feet, or 1 = 1000). It will remove doubt if map scales are shown conventionally.

SECTION 2

Response: Page 3-1

By: T. Monaghan

Date: August 8, 1994

Our standard for reporting map scales is as follows and will be corrected in the LTSP for consistency. A bar scale is used to report map scales in figures and plates.

1 inch equals 1000 ft

Plans for Implementation:

The first bulleted items in Sections 3.1.1 and 3.1.2 have been revised to reflect our standard for reporting map scales.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: December 29, 1992

Document: Long-Term Surveillance Plan

Reviewer: Grand Junction Projects Office

Comment 2: Page 3-2

The contour interval on the Final Topographic Map is 10 feet, which is contrary to the two foot contour interval stated for the map in the text (pg 3-2).

SECTION 2

Response: Page 3-2 By: T. Monaghan Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

The text was revised to coincide with the map, now designated the disposal site map.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: December 29, 1992

Document: Long-Term Surveillance Plan

Reviewer: Grand Junction Projects Office

Comment 3: Page NA

The report, Remedial Action Plan and Site Conceptual Design for Stabilization of the Inactive Uranium Mill Tailings Site at Green River, Utah (DOE, 1991a) is referenced many times in the text of the report. If the Project Office considers this report essential to the inspection process, the GJPO would appreciate receiving a copy.

SECTION 2

Response: Page NA

By: T. Monaghan

Date: August 8, 1994

The referenced report will be included in the permanent site file which will be transferred to GJPO after final site licensing.

Plans for Implementation:

None.

UMTRA DOCUMENT REVIEW FORM

SECTION 1

Site: Green River, Utah

Date: December 29, 1992

Document: Long-Term Surveillance Plan

Reviewer: Grand Junction Projects Office

Comment 4: Page Pocket

Final topographic map in back pocket.

This is drawing no. GRN-PS-10-0519 - there already is a drawing of the same number. This new one must be a revision because it shows a lot of additional information.

59 Monitor wells are shown on the map using three different symbols - the symbols are not explained. Only 11 of the wells are mentioned in the report text and they are the compliance monitor well system. 21 monitor wells have been inspected during the past two (1991 and 1992) pre-licensing inspections. The status of the wells (other than the 11 compliance wells) should be determined. Perhaps no more than the 11 compliance wells should be included in the annual inspections.

SECTION 2

C. Silva

S. Suniga

Response: Page Plates 1 and 2 By: G. Ruskauff

Date: August 8, 1994

Comment acknowledged.

Plans for Implementation:

Plates 1 and 2 now include a revised disposal site vicinity map and the disposal site map. The monitor wells are defined on the disposal site map (Plate 2).

The 11 wells comprising the compliance system are the only ones that will be used to monitor ground water levels and quality, as stated in the LTSP.

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END

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