



LMS/PRO/S04344-0.0
Formerly STO 212

Uranium Leasing Program Mineral Leasing Procedures Manual

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Legacy Management Team

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**Uranium Leasing Program
Mineral Leasing Procedures Manual**

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Uranium Leasing Program Mineral Leasing Procedures Manual Document History

Version No./Revision No.	Date	Description of Change
0.0	04/26/2011	Formerly STO 212 Chapter 7, "Site Inspections," and Chapter 12, "Reclamation Practices," are new additions. Minor editorial changes were made throughout the document. Initial issue under the Legacy Management Support contract. This document replaces STO 212, <i>Uranium Lease Management Mineral Leasing Procedures Manual</i> .

Approved:



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2011.04.25 14:36:04
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Abbreviations

BLM	U.S. Bureau of Land Management
CDRMS	Colorado Division of Reclamation, Mining, and Safety
DOE	U.S. Department of Energy
DOW	U.S. Department of Wildlife
EA	Environmental Assessment
EC	Environmental Compliance
lbs.	pounds
LM	Office of Legacy Management
LMS	Legacy Management Support
MSHA	Mine Safety and Health Administration
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
PEA	<i>Uranium Leasing Program Final Programmatic Environmental Assessment</i>
Plan	Exploration and Mining Plan
PUF	polyurethane foam
Request	Request to Relinquish Lands
U ₃ O ₈	uranium
ULP	Uranium Leasing Program
USFWS	U.S. Fish and Wildlife Service
V ₂ O ₅	vanadium

Forms Referenced in this Manual

Forms can be found on the Contractor page of the LM Intranet.

DOE Uranium Leasing Management Program Field Examination Notes

LMS 1986

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Foreword

The U.S. Department of Energy (DOE) Office of Legacy Management in Grand Junction, Colorado, administers the Uranium Leasing Program, which includes 32 lease tracts, all within the Uravan Mineral Belt of southwestern Colorado. DOE's Legacy Management Support contractor, the S.M. Stoller Corporation, provides technical and administrative support.

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1.0 Overview

1.1 Purpose

This section describes procedures for the preparation, review, approval, issuance, control, and revision of this *Uranium Leasing Program (ULP) Mineral Leasing Procedures Manual*.

1.2 Responsibilities

The ULP lead or designated alternate is responsible for this manual in its entirety.

1.3 Procedures

These procedures are prepared by the ULP lead and are used in conducting routine programmatic activities. Additional procedures shall be prepared in the same manner when they are deemed necessary.

1.3.1 Review and Approval of Procedures

Procedures shall be circulated for review prior to approval and issuance. This review shall include the U.S. Department of Energy (DOE) realty officer, the ULP lead, a Quality Assurance representative, and other support organization personnel, as deemed appropriate. Review comments shall be considered and incorporated into the procedures, as appropriate.

This manual shall be reviewed once a year and revised as necessary.

1.3.2 Issuance and Control of Procedures

This manual shall be considered issued when it is placed on the “Contractor” page of the DOE Office of Legacy Management (LM) Intranet. This electronic version shall be the only controlled “copy” and shall contain the latest revisions. Document users may download and print copies of the manual, but the paper copies shall be considered uncontrolled. The document holder is responsible for ensuring that uncontrolled paper copies are current.

1.3.3 Revision of Procedures

Revisions of procedures shall be accomplished by rewriting the appropriate section, marking it to clearly identify the changes, and replacing the existing version of the section with the revised section. If appropriate, the entire manual may be revised. Revisions shall be reviewed, approved, issued, and controlled in the same manner as the original procedures.

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2.0 Administrative Requirements

2.1 Purpose

ULP personnel plan, coordinate, and provide technical and administrative support to the realty officer for the administration of leases located on DOE-managed lands and established for the domestic production of uranium (U_3O_8) and vanadium (V_2O_5) ores.

2.2 Responsibilities

The realty officer is responsible for programmatic oversight of the ULP and ensures that the program's technical and administrative objectives are accomplished. The realty officer is the only person authorized to enter into, administer, or terminate ULP contracts and make contractual determinations and findings on behalf of DOE.

The ULP lead is an employee of the Legacy Management Support (LMS) contractor, the S.M. Stoller Corporation. He or she administers the ULP and ensures that specific tasks assigned by the realty officer are carried out in accordance with DOE policy and these procedures.

ULP personnel shall perform the following tasks to support the program:

- [1] Submit to the realty officer reports that outline the progress of lessees' exploration, development, mining, and reclamation activities. To prepare such reports, ULP personnel shall:
 - [a] Review lessees' exploration and mining plans to ensure that they are consistent with the *Uranium Leasing Program Final Programmatic Environmental Assessment (PEA)* (DOE 2007b), the *Finding of No Significant Impact for the Uranium Leasing Program* (DOE 2007a), existing environmental regulations, lease stipulations, and standard industry practices. Make recommendations for approval or modifications required for approval (see Section 3.0, "Processing of Lessees' Plans").
 - [b] Examine and evaluate lessees' proposed activities, including site-specific access routes, exploration drill hole locations, mine-site support facility locations, and proposed methods of reclamation. Recommend approval or identify alternatives that can be approved. Establish the amount of reclamation performance bonding that is appropriate for the amount of environmental disturbance anticipated (see Section 4.0, "Bonding Calculations").
 - [c] Monitor lessees' exploration, mine-development, and ore-production activities to ensure compliance with federal, state, and local environmental regulations and lease stipulations.
 - [d] Review exploration drill hole logs, drill hole maps, mine maps, and quarterly reports submitted by the lessees to assess the lessees' progress and verify conditions witnessed during field inspections. Copies of these records shall be retained in the official lease tract files.

- [e] Review federal and state mine safety inspection records and reports. Identify significant violations or adverse trends and report them to DOE annually. If repeated, flagrant violations are noted, initiate discussions with the realty officer concerning the cancellation of the particular lease for cause.
- [2] Act as a liaison between DOE and other federal agencies (e.g., U.S. Bureau of Land Management [BLM], U.S. Fish and Wildlife Service [USFWS]), state agencies (e.g., Colorado Division of Reclamation, Mining, and Safety [CDRMS], Colorado Division of Wildlife [DOW], Colorado Department of Public Health and the Environment), local and tribal officials, and private entities, as appropriate. Periodically review Memoranda of Understanding (MOUs) established with BLM and CDRMS to ensure that the agreements remain up-to-date and reflect actual work practices. Meet with BLM annually, preferably in August, to project workloads and develop a scope of work for the upcoming year.
- [3] Maintain subscriptions to *U_x Weekly* and *Metal Bulletin*. Review *U_x Weekly*, and track the market prices (spot and long-term) for U₃O₈ each week. Monitor *U_x Weekly* and the associated *U_x Daily News* newsletter to keep abreast of activities occurring within the domestic and international uranium industry. Review *Metal Bulletin* and the associated *Daily Metal* newsletter and track the market prices for V₂O₅ twice a week. Monitor the *Metal Bulletin* and *Daily Metal News* to keep abreast of activities occurring within the world vanadium industry (see Section 5.0, “Establishment of Market Prices for Uranium and Vanadium”).
- [4] Develop and maintain procedures to process and maintain records of ores produced from the DOE lease tracts and delivered to a mill or other receiving station for processing. Calculate the resulting royalties due and payable to DOE. Ensure that royalty payments are submitted in accordance with the lease agreements. Maintain records associated with the number of miles traveled by ore trucks on county, state, and federal roadways (see Section 6.0, “Calculating and Processing of Royalty Payments”).
- [5] Conduct cursory and full inspections of active lease tracts to ensure compliance with federal, state, and local health, safety, and environmental regulations. Identify adverse conditions that need to be addressed. Secure those areas at which unsafe conditions exist, and provide direction and support for the correction of said conditions (see Section 7.0, “Site Inspections”).
- [6] Maintain a record of and provide for the routine surveillance of competing surface activities (e.g., activities associated with oil and gas leases and special use permits) that are authorized by other agencies with surface-management jurisdiction (see Section 7.0, “Site Inspections”).
- [7] Inspect and maintain lease tract boundary markers and monuments on the lease tracts. Establish and maintain records of survey control points for said markers and monuments (see Section 7.0, “Site Inspections”).
- [8] Ensure that lessees’ pulp ore samples are analyzed in accordance with lease agreement requirements (see Section 8.0, “Pulp Ore Sample Analysis”).
- [9] Evaluate sample plants to verify that they or other facilities receiving lease tract ores have adequate procedures for weighing, sampling, and assaying said ores and for reporting the results to DOE (see Section 9.0, “Sample Plant Evaluation”).

- [10] Ensure that ULP personnel are trained in the appropriate use of self-rescuer respirators (see Section 10.0, “Use of Self-Rescuer”).
- [11] Oversee the termination of lease agreements when requested by a lessee or when directed by the realty officer for cause (see Section 11.0, “Processing of Lease Relinquishments or Cancellations”).
- [12] Monitor lessees’ reclamation activities to ensure that they comply with federal, state, and local environmental regulations and lease stipulations. Ensure that these activities are consistent with existing exploration and mining plans and standard industry practices (see Section 12.0, “Reclamation Practices”).
- [13] Determine the eligibility of inactive, reclaimed lease tracts for restoration to the public domain under BLM’s administrative control. Prepare a Request to Relinquish Lands (Request), and submit it to the BLM Colorado State Office for processing. Help BLM officials review the Request, and monitor its status until the restoration process is complete (see Section 13.0, “Restoration of Lands to the Public Domain”).

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3.0 Processing of Lessees' Plans

3.1 Purpose

Articles XII and XIII of each lease agreement require lessees to prepare and submit Exploration and Mining Plans (Plans), in triplicate, to DOE for approval. Such Plans must be approved before the initiation of surface-disturbing activities or the construction of surface facilities on the lease tract.

3.2 Procedures

The procedures set forth below are established to ensure that Plans submitted to DOE are processed expeditiously and that personnel involved in considering the Plans are fully informed in a timely fashion.

- [1] When Plans are received from lessees, the receiver shall forward the triplicate copies, along with supporting maps and other documents, to the ULP lead for processing.
- [2] ULP personnel shall initiate a technical review of the Plan to ensure that proposed activities are consistent with the PEA and *Finding of No Significant Impact for the Uranium Leasing Program* (DOE 2007a) and that they comply with the requirements of the lease agreement, applicable regulations, administrative and environmental requirements, and standard industry practices. If there are deficiencies, ULP personnel shall notify the lessee or its representative.
- [3] Within 5 business days of receiving the Plan from the lessee, ULP personnel shall forward at least one full-sized paper copy of the Plan to the applicable BLM Field Office representative and electronically transmit a color PDF file of the Plan to the designated BLM point of contact, in accordance with the *Memorandum of Understanding between the U.S. Bureau of Land Management and the U.S. Department of Energy* (BLM MOU).
 - [a] ULP personnel shall share appropriate non-confidential digital datasets (such as Geographic Information System shape files and databases) of resource data, if necessary, with BLM personnel.
 - [b] ULP personnel shall exchange information with BLM to encourage consistency and reduce duplication efforts.
 - [c] ULP personnel shall work with the lessee to resolve BLM's comments on the Plan.
- [4] In accordance with the *Memorandum of Understanding between the U.S. Department of Energy and the Colorado Division of Reclamation, Mining, and Safety* (CDRMS MOU), ULP personnel shall contact the applicable CDRMS representative to confirm that he or she received a copy of the Notice of Intent to Conduct Prospecting Operations (similar to DOE's exploration plan) or Reclamation Permit Application (similar to DOE's mining plan), as appropriate, from the lessee for the proposed activity.
 - [a] ULP personnel shall exchange information with the CDRMS representative to encourage consistency and reduce duplication efforts.
 - [b] ULP personnel shall work with the lessee to resolve CDRMS comments on the Plan.

- [5] ULP personnel shall continue the review process by conducting the following actions:
- [a] Make arrangements for an on-site field review (on the lease tract) to discuss the proposed activities with representatives of DOE, BLM, CDRMS, other surface managing entities or owners, tribes, DOW, USFWS, and the lessee, as applicable. Document the results of this on-site field review on the DOE Uranium Leasing Program Field Examination Notes form (LMS 1986). On this form, document changes to the proposed activities and special conditions that need to be addressed for DOE to approve the proposed activities. Distribute copies of the Field Examination Notes to the field review participants, and retain the original as part of the official lease tract file.
 - [b] During the field or office review:
 - Define the areas affected by the proposed activities.
 - Identify affected areas where additional investigations (e.g., threatened and endangered species inventories, cultural resource inventories) are required. Ensure that additional investigations are performed and that the proper documentation is submitted to DOE and other federal or state agencies, as appropriate, for review.
 - Identify areas or resources that must be protected or mitigated by special stipulation.
 - Identify activities that must be avoided to minimize adverse environmental impacts.
 - Determine if there are inadequacies in the Plan or if information needs to be added.
 - Determine if DOE needs to place additional stipulations on the lessee.
- [6] After the field or office review and in accordance with DOE's National Environmental Policy Act (NEPA) procedures, the LMS contractor's NEPA specialist shall review the Plan and prepare an Environmental Checklist.
- [a] The DOE NEPA compliance officer is responsible for reviewing the Environmental Checklist and, by signature, agreeing that the action is categorically excluded from further NEPA documentation, or
 - [b] The DOE NEPA compliance officer is responsible for determining if further NEPA documentation is warranted and, if so, recommending that the NEPA Planning Board convene and make a determination that an Environmental Assessment (EA) be prepared.
 - [c] The lessee shall prepare the EA, if required (in accordance with Appendix C of the lease agreement).
- [7] ULP personnel shall ensure that the lessee has acquired applicable approvals and permits from agencies outside DOE. For example:
- [a] For all new proposed surface disturbances, the lessee is required to obtain an appropriate permit from CDRMS in accordance with the *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock*,

Metal, and Designated Mining Operations (Colorado Mined Land Reclamation Board 2010).

- [b] For all proposed surface disturbances, the lessee is required to consult with DOW, USFWS, or BLM, as appropriate, to determine if threatened or endangered, sensitive, or special-status plant and wildlife species could be in the area, or if the agencies have wildlife concerns.
 - [c] For all new proposed surface disturbances, the lessee is required to perform a cultural resource inventory. The inventory shall be documented in accordance with the State Historic Preservation Officer's Class III inventory standards and provided to DOE and BLM.
 - [d] For disturbances proposed in potential floodplain or wetland areas, the lessee is required to determine—through consultation with the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, USFWS, and appropriate state agencies—if a jurisdictional floodplain or wetland is present (and, if so, acquire applicable permits).
 - [e] For proposed activities on lease tract WM-17, ULP personnel shall ensure that BLM has reviewed the Plan and made an assessment of impacts to the Dolores River Canyon Wilderness Study Area.
- [8] ULP personnel shall review documentation submitted by BLM or the surface owner (in cases where a private entity owns the surface of the lease tract) pertaining to the lessees' proposed activities, and ensure that areas of concern are properly addressed.
- [9] ULP personnel shall determine the amount of bonding required to ensure proper site reclamation (see Section 4.0, "Bonding Calculations").
- [a] If the existing bond amount is insufficient to cover the proposed activity, recommend to the realty officer that the lessee be directed to provide additional bonding before site activities begin.
 - [b] In accordance with the BLM MOU and the CDRMS MOU, provide bond information to BLM and CDRMS for review and comment.
- [10] On the basis of the above information, the ULP lead shall prepare a letter recommending that the Plan be approved or denied and stating the basis for such recommendation. This letter shall include special stipulations that are required to address concerns identified during the on-site field review or subsequent investigations. The letter shall be electronically submitted to the realty officer for his or her review, concurrence, and signature. For DOE's convenience, the ULP lead also shall prepare a draft letter, addressed to the lessee, that states whether DOE approves or denies the Plan. This letter shall contain special stipulations and requirements that address situations that the lease agreement and Plan do not provide for. It shall, furthermore, notify the lessee of any additional required bonding.
- [11] ULP personnel shall initiate and maintain a Cross-Walk of PEA Requirements, which lists all requirements identified in the PEA that may be applicable to a lessee's Plan and provides a record of when the requirement is met.
- [12] Following the realty officer's review of the lessee's proposed action and his or her concurrence with the ULP lead's recommendations, the realty officer is responsible for

finalizing the letter to the lessee and approving or denying the Plan, as appropriate. The letter shall be distributed as follows:

- [a] The original letter, together with supporting documentation, shall be transmitted to the lessee.
- [b] Copies of the letter, together with supporting documentation, shall be forwarded to the ULP lead, BLM, CDRMS, and, if appropriate, other agencies.
- [c] Upon receiving DOE's letter, ULP personnel shall compile pertinent documents and correspondence associated with the lessee's Plan and DOE's approval process, and forward them to the appropriate records coordinator for incorporation into the official lease tract file.

4.0 Bonding Calculations

4.1 Purpose

Article XIV of each lease agreement requires the lessee to file a reclamation performance bond with DOE before surface-disturbing activities begin. The lease agreement establishes the minimum bond amount. Performance bonds shall be (1) made with satisfactory surety; (2) payable to DOE; and (3) conditioned upon the faithful compliance with applicable statutes and regulations, the terms and conditions of the subject lease, and lessee Plans, including amendments and supplements thereto, that the realty officer has approved.

4.2 Procedures

Following receipt of a Plan or Notice to Resume Operations, ULP personnel shall assess the reclamation performance bond to ensure that the bond amount is sufficient to cover complete reclamation of the lessee's proposed work.

- [1] When a Notice to Resume Operations is submitted, ULP personnel shall:
- [a] Review the existing status of the lessee's operations, and determine if those operations meet the requirements of the lessee's new lease agreement, DOE's previous approvals concerning those operations, and current environmental regulations.
 - [b] During the review, take into account possible changes in site conditions.
 - [c] Evaluate, in depth, the labor and equipment required to fully reclaim the operation in accordance with federal, state, and local rules and regulations; current environmental requirements; and DOE's reclamation practices (see Section 12.0 of this manual). This evaluation shall assume that the lessee cannot or will not perform the work as required and that DOE, through its LMS contractor, will perform the work, either through its own workforce or through subcontracted services procured specifically for the work.
 - [d] Subsequent to this evaluation, calculate the total estimated cost for reclamation activities with the mean-average unit price established by subcontractors' bid quotes for labor and equipment in the current Basic Ordering Agreement.



Note

Because the LMS contractor is bound by its contract with DOE and is required to conduct activities in accordance with the terms and conditions of that contract and DOE's rules and regulations, the total estimated cost associated with the LMS contractor's reclamation of the lessee's operation may be substantially greater than that which the lessee might incur for performing the same work.

- [e] Document the results of the Notice to Resume Operations review and bond calculation, and forward such documentation to the ULP lead.
- [2] Upon review of this documentation, and in response to the lessee's aforementioned submittal, the ULP lead shall prepare a letter stating that the current bond posted with DOE is sufficient for DOE's requirements *or* recommending that the bond be increased or decreased by a specified amount and stating the basis for such recommendation. This

letter also shall explain special concerns identified during the evaluation process. The letter shall be electronically submitted to the realty officer for his or her review and concurrence. The realty officer is then responsible for providing the BLM point of contact with the bond information and requesting BLM's review and comment. Once both DOE and BLM are satisfied with the bond, the realty officer is responsible for signing the letter and sending it to the lessee. Copies shall be forwarded to BLM, CDRMS, and the appropriate records coordinator for incorporation into the official lease tract file.

- [3] When a Plan is submitted, ULP personnel shall:
- [a] Review the Plan in accordance with ULP procedures (Section 3.0, "Processing of Lessee's Plans") and evaluate the proposed surface disturbance and other potential environmental liabilities in the same manner as that described for a Notice to Resume Operations, paragraph 4.2[1] of this manual.
 - [b] Calculate the total estimated cost for reclamation activities in the same manner as described for a Notice to Resume Operations.
 - [c] Document the results of the Plan review and bond calculation, and forward such documentation to the ULP lead.
- [4] Upon review of this documentation, and in response to the lessee's aforementioned submittal, the ULP lead shall prepare a letter stating that the minimum bond defined in the lease agreement is sufficient for DOE's requirements and should be posted with DOE, *or* recommending that the minimum bond defined in the lease agreement be increased to some greater amount to ensure adequate reclamation of the proposed activities. The letter shall specify the basis for the recommended increase and explain special concerns identified during the evaluation process. The letter shall be electronically submitted to the realty officer for his or her review and concurrence. The realty officer is then responsible for providing the BLM point of contact with the bond information and requesting BLM's review and comment. Once both DOE and BLM are satisfied with the bond, the realty officer is responsible for signing the letter and sending it to the lessee. Copies shall be forwarded to BLM, CDRMS, and the appropriate records coordinator for incorporation into the official lease tract file. The realty officer is responsible for coordinating with CDRMS to ensure that both DOE's and CDRMS's bond requirements are met, in accordance with Section V.A of the CDRMS MOU.
- [5] Periodically during the term of the lease agreement, ULP personnel shall reevaluate the existing reclamation performance bond posted with DOE to ensure that the bond amount is sufficient to fully reclaim the lessee's surface-disturbing operations. Such reevaluation shall be documented and forwarded to the ULP lead for review. Following this review, the ULP lead shall prepare a letter stating that the current bond posted with DOE is still sufficient for DOE's requirements, *or* recommending that the current bond posted with DOE be increased or decreased and stating the basis for such recommendation. This letter also shall explain special concerns identified during the evaluation process. The letter shall be electronically submitted to the realty officer for his or her review and concurrence. The realty officer is then responsible for providing the BLM point of contact with the bond information and requesting BLM's review and comment. Once both DOE and BLM are satisfied with the bond, the realty officer is responsible for

signing the letter and sending it to the lessee. Copies shall be forwarded to BLM, CDRMS, and the appropriate records coordinator for incorporation into the official lease tract file.

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5.0 Establishment of Market Prices for Uranium and Vanadium

5.1 Purpose

Appendix B of each lease agreement requires DOE to “establish the prices for uranium and vanadium that shall be used to calculate the fair-market value of lease tract ores.”

5.2 Procedures

The procedures set forth below are established to monitor and track the periodic prices quoted by industry for U_3O_8 and V_2O_5 and then use those prices to determine the market prices applicable to ores mined and delivered from the DOE lease tracts. ULP personnel shall:

- [1] Maintain annual subscriptions to *U_x Weekly* and *Metal Bulletin* to monitor and track the periodic prices quoted by industry for U_3O_8 and V_2O_5 , respectively.



Note

U_x Weekly is typically received in electronic format [via e-mail] late on Monday afternoons, followed within the week by a hard-copy version. The associated *U_x Daily News* newsletter is received in electronic format [via e-mail] every weekday morning. *Metal Bulletin* is typically received in electronic format [via e-mail] every Sunday, followed within the week by a hard-copy version. The associated *Metal Bulletin Daily* newsletter is received in electronic format [via e-mail] every weekday morning

- [2] Review *U_x Weekly* (typically on Tuesday morning), and track the market prices (spot and long-term) for U_3O_8 each week.
 - [a] Open the Excel file entitled “ULP UV Price Tracking Spreadsheet,” which can be found at: projects on ‘condor’\LM\UranLeasing\Royalty Spreadsheets.
 - [b] Verify that the current-year spreadsheet is visible.
 - [c] Record the spot price (depicted as “*U_x U₃O₈ Price*”) and the long-term price (depicted as “*U_x LT U₃O₈ Price*”) in the current “Month” and “Week” cell of the spreadsheet, respectively.
 - [d] Save the spreadsheet.
 - [e] Sometime each month, verify that the formula contained in the cells that calculates the “Monthly Arithmetic Average Price” for both the spot market and the long-term market (for the “Uranium” section) are correct for the number of weeks that data are recorded for that month.
 - [f] Save the spreadsheet.
- [3] Monitor the *U_x Weekly* and the associated *U_x Daily News* newsletter to keep abreast of activities occurring within the domestic and international uranium industry.

- [4] During the summer months of each year, visit the U.S. Energy Information Administration's website (<http://www.eia.doe.gov/>) and perform the following steps:
- [a] Click on the "Sources & Uses" tab and then on the "Nuclear & Uranium" link to determine if the website has been updated to the current year. Once it is updated,
 - [b] Click on the "Data" tab and then on the "Purchases and Prices" link to display "Uranium Purchased by Owners and Operators of U.S. Civilian Nuclear Power Reactors," Tables S1a and S1b.
 - [c] From Table S1a, note the values for the "Spot Contracts" and the "Short, Medium and Long-Term Contracts" cited for the last year reported.
 - [d] Record these values on the "US EIA U Contracts" spreadsheet (a tab within the "ULP UV Price Tracking Spreadsheet") for the appropriate year, inserting a column for a new year, as required.
 - [e] Verify that the formula in the new column that calculates the "Rolling Ten-Year Average" is correct.
 - [f] Record the resulting figure (to the nearest whole number) in the current-year's spreadsheet in the row labeled "Purchase Contract Percentages (SM vs. LTM)" in the column for the month *following* the report date.
 - [g] Save the spreadsheet.
 - [h] Record this value in column B of the following year's spreadsheet when it is developed (see paragraph 5.2[8] of this section).
 - [i] From Table S1b, note the value for "Total Purchased (Weighted-Average Price)" cited for the last year reported.
 - [j] Record this value on the current-year's spreadsheet in the row labeled "Total Purchased (Weighted-Average Price)" in the column for the month *following* the report date.
 - [k] Save the spreadsheet.
 - [l] Record this value in column B of the following year's spreadsheet when it is developed (see paragraph [8] of this section).
- [5] Review *Metal Bulletin* and the associated *Metal Bulletin Daily* newsletter, and track the market prices for V₂O₅ twice a week (typically on Monday morning and Wednesday afternoon).
- [a] Open the Excel file entitled "ULP UV Price Tracking Spreadsheet," which can be found at: projects on 'condor'\LM\UranLeasing\Royalty Spreadsheets.
 - [b] Verify that the current-year spreadsheet is visible.
 - [c] Record the market price in the current "Month" and "Week" cell of the spreadsheet.
 - [d] Save the spreadsheet.

- [e] Sometime each month, verify that the formula contained in the cell that calculates the “Monthly Arithmetic Average Price” for the “Vanadium” section is correct for the number of weeks and days that data are recorded for that month.
- [f] Save the spreadsheet.



Note

Each current-year spreadsheet is designed to automatically calculate the values for “Monthly Arithmetic Average Price,” “Quarterly Arithmetic Average Price,” “Quarterly Weighted-Average Price for Uranium,” and “Annualized Quarterly Weighted-Average Price for Uranium” for the “Uranium” section of the spreadsheet, plus the values for “Monthly Arithmetic Average Price,” “Quarterly Arithmetic Average Price,” and “Adjusted Quarterly Average Price for Vanadium” for the “Vanadium” section of the spreadsheet. The spreadsheet also will automatically calculate the monthly “Ore Value (\$/ton).”

- [6] Monitor the *Metal Bulletin* and *Daily Metal News* to keep abreast of activities occurring within the world vanadium industry.
- [7] Before the 20th of each month following the end of each quarter, draft a letter to the lessees, notifying them of the new quarterly prices that have been established (via the current-year spreadsheet) for U_3O_8 and V_2O_5 and will be in effect for the next quarter’s ore production. After the ULP lead and realty officer review and concur on the letter, finalize it and transmit it to the lessees.
- [8] During the second half of December each year, prepare a spreadsheet for the next year.
 - [a] Using the “Edit/Move or Copy Sheet” command, copy the current-year spreadsheet, and title it for the new year.
 - [b] Once the new-year spreadsheet exists, highlight the data-entry cells for Weeks 1 through 5 for both sections of the spreadsheet (“Uranium” and “Vanadium”).
 - [c] Delete the entries.
 - [d] Save the new-year spreadsheet (so that it will be ready for data entry and processing when January arrives).

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6.0 Calculating and Processing of Royalty Payments

6.1 Purpose

Appendix B of each lease agreement specifies that the lessee shall provide the realty officer with an accurate record of the tonnage and grade (U_3O_8 and V_2O_5 content) of ores produced from the lease premises. This record shall include copies of load detail summaries furnished to the lessee for ore delivered to a mill or other receiving station. Appendix B of each lease agreement also specifies the production royalty payments due to DOE for the ores mined from the lease tract and sets forth the methods for computing such payments.

6.2 Procedures

ULP personnel shall follow the procedures described below to ensure compliance with the provisions of Appendix B of the lease agreements.

6.2.1 Production Documentation

- [1] Production documentation—including load detail summaries; royalty calculation summaries; mill feed summaries; and estimated production and ore values per Appendix B, paragraph m or j, of each lease agreement—furnished to DOE in support of ores produced from a DOE lease tract shall be immediately forwarded to the ULP lead for processing.



Note

Paragraph m of Appendix B applies to lease tracts JD-5, JD-6, JD-7, JD-8, JD-9, SR-11, SR-13, SR-15, SR-13A, SM-18, LP-21, and CM-25. Paragraph j applies to lease tracts JD-5A, JD-8A, SR-10, SR-11A, SR-12, SR-14, SR-15A, SR-16, SR-16A, WM-17, AM-19, AM-19A, AM-20, LP-22, LP-22A, LP-23, CM-24, G-26, and C-27.

- [2] ULP personnel shall check production documentation and verify calculations that determine the dry weight of ore, pounds of U_3O_8 , and pounds of V_2O_5 for each lot of ore. Errors shall be brought to the attention of the ULP lead, who shall inform the realty officer, the lessee, and the originator of the production documentation (if other than the lessee) so that corrections can be made.
- [3] On the basis of production documentation, ULP personnel shall calculate the amount of production royalty due and payable to DOE, as outlined in the following sections.

6.2.2 Procedure for Processing Load Detail Summaries and Calculating Production Royalty Payments

ULP personnel shall:

- [1] Date-stamp the receipt of the load detail summary or royalty calculation summary.
- [2] Review the load detail summary to verify that the following information is included:
- Date of shipment
 - Lease, lot, and truckload number or scale ticket number

- Truck identification number
 - Gross weight
 - Tare weight
 - Wet pounds of ore
 - Moisture content of ore
 - Dry pounds or dry tons of ore
 - Ore assays (percentage of U₃O₈ and V₂O₅)
 - Pounds of U₃O₈ and V₂O₅
- [3] Verify that the “DRY TONS” value and the percentage of U₃O₈ are reported to three decimal places and that the percentage of V₂O₅ is reported to two decimal places.
- [4] Notify the ULP lead if errors are found in the load detail summary.
- [5] Open the appropriate Excel royalty spreadsheet. Lease-specific files can be found at: projects on ‘condor’\LM\UranLeasing\Royalty Spreadsheets.
- [6] After opening the lease-specific file, complete the “Monthly Worksheet” spreadsheet, “Royalty Summary” spreadsheet, and “Final Payment” spreadsheet for the lease tract. The procedure shall vary slightly, depending on the lease tract. Lease agreements for the 12 longer-held lease tracts (formerly known as the “active” lease tracts before the 2008 lease tract rebid) require payment of a bid royalty and base royalty (together known as the “production royalty”). Lease agreements for the 19 newer lease tracts (formerly known as the “inactive” lease tracts before the 2008 rebid) require payment of a bid royalty only. The bid royalty is considered the “production royalty” for these lease tracts. Following are procedures for completing the three spreadsheets for the formerly active and inactive lease tracts.

6.2.2.1 “Monthly Worksheet” Spreadsheet for Formerly Active Lease Tracts (JD–5, JD–6, JD–7, JD–8, JD–9, SR–11, SR–13, SR–13A, SR–15, SM–18, LP–21, and CM–25)

ULP personnel shall:

- [1] Open the “Monthly Worksheet” spreadsheet.
- [2] Place the cursor at the bottom of the existing data (this line represents the summary line for the previous production period).
- [3] Skip a line, and prepare to enter new data.
- [4] From the load detail summary, enter the following data: DATE (in mm/dd/yy format), GROSS (in pounds [lbs.]), TARE (in lbs.), percent H₂O, percent U₃O₈, and percent V₂O₅ in columns A, D, E, G, J, and N, respectively.
- [5] Verify the current-month royalty prices for U₃O₈ and V₂O₅. These can be obtained from the ULP lead or from the lease-specific record file folder.
- [6] Look in the “Royalty” section for the most recent letter from DOE to the lessee that notifies the lessee of the current, effective prices. The price for U₃O₈ is the “Annualized Quarterly Weighted-Average Price for Uranium,” and the price for V₂O₅ is the “Adjusted Quarterly Average Price for Vanadium.”



These prices are calculated in an Excel file titled “ULP UV Price Tracking Spreadsheet” [see Section 5.0, “Establishment of Marked Prices for Uranium and Vanadium”]. The spreadsheets are organized by year and titled “Uranium and Vanadium Price Tracking Worksheet.”

- [7] Enter these U_3O_8 and V_2O_5 price values in columns B and C, respectively. Copy these values down to the bottom of the current data set.
- [8] From the line immediately above the summary line for the previous month, copy the cell formulas (individually) from columns F, H, I, K, L, M, O, P, Q, R, T, and U.
- [9] Paste them into each row of the respective column for the new data set.
- [10] Add a current-month summary line at the bottom of the current data set.
- [11] Input the month-end date in column A.
- [12] Copy the price data in columns B and C from the line immediately above.
- [13] Using the SUM function, total columns D, E, F, I, K, and O.
- [14] From the previous month’s summary line, copy the cell formulas (individually) from columns G, H, J, L, M, N, P, Q, R, and T, and paste them into the respective columns of the current-month summary line.



The spreadsheet may automatically perform a portion of these copy-and-paste functions ahead of your actions.

- [15] In column S, subtract the total calculated in column L from the previous month’s value in column S.
- [16] Select the current month’s data set (all rows and all columns), and print the selection.
- [17] Check the calculated values of the “Monthly Worksheet” spreadsheet printed data set (columns F, I, K, and O) against the reported values for NET (in lbs.), DRY TONS, U_3O_8 lbs., and V_2O_5 lbs., respectively, on the load detail summary.
- [18] If the values match, place a checkmark next to the values on the load detail summary.
- [19] Check the summary line total values similarly.
- [20] Check the calculated values of the “Monthly Worksheet” spreadsheet printed data set (columns R, T, and U) against the reported values for ROYALTY VALUE, ROYALTY/TON, and ROYALTY/LOAD, respectively, on the royalty calculation summary.
- [21] If the values match, place a checkmark next to the values on the royalty calculation summary.
- [22] Check the summary line total values similarly.
- [23] If there are discrepancies in any of these values (Steps [17] and [20]), review the data spreadsheets to determine the cause of the discrepancy, and correct the errant values, if possible. If such errors are contained in the load detail summary or the royalty calculation summary, notify the ULP lead.

- [24] From the previous month's summary line, copy the formula from column X, and paste it into the current-month summary line (column X).
- [25] Use column W to calculate the total royalties received to date by adding the resulting value of column X to the value of column W from the previous month's summary line.
- [26] Use column Y to calculate the amount of royalty credit remaining by subtracting the value of column X from the value of column Y from the previous month's summary line, or enter "0" if the resulting value is equal to or less than 0.

6.2.2.2 "Royalty Summary" Spreadsheet for Formerly Active Lease Tracts (JD-5, JD-6, JD-7, JD-8, JD-9, SR-11, SR-13, SR-13A, SR-15, SM-18, LP-21, and CM 25)

ULP personnel shall:

- [1] Select and copy the current month's summary line (columns A through U) once the current month's data have been entered, checked, and verified.
- [2] Open the "Royalty Summary" spreadsheet.
- [3] Using the "Edit" command ("Paste Special – Values" option), paste the data values into the appropriate row on the "Royalty Summary" spreadsheet.
- [4] If the last existing row on the "Royalty Summary" spreadsheet reflects the previous month's data, paste the new data values in the next available row.
- [5] If the last existing row reflects a "Totals to Date" summary line, skip a row, and paste the new data values into the following row.
- [6] Print the "Royalty Summary" spreadsheet, and forward it the ULP lead for review.

6.2.2.3 "Final Payment" Spreadsheet for Formerly Active Lease Tracts (JD-5, JD-6, JD-7, JD-8, JD-9, SR-11, SR-13, SR-13A, SR-15, SM-18, LP-21, and CM-25)

ULP personnel shall:

- [1] Return to the "Monthly Worksheet" spreadsheet.
- [2] Select and copy the current month's data set (use the spreadsheet row numbers to do this).
- [3] Open the "Final Payment" spreadsheet.
- [4] Paste the selection into the identical rows of the "Final Payment" spreadsheet.
- [5] From the load detail summary, enter the lessee's ore lot numbers into column Z. The ore lot number is the center number of the LOAD # data. For example, a LOAD # for lease tract C-JD-6 may look like "JD6-03-15." This data represents the lease tract (JD6), the ore lot number (03), and the truckload number (15). "03" would be entered in column Z.
- [6] From the summary line for the previous month, copy the cell formula from column AB, and paste it into column AB of the current-month summary line.
- [7] If a lot of ore is completed during the month, place the cursor in column AA on the last line of entry (row) for that particular lot.

- [8] Use the SUM function to total the number of dry tons recorded in column I for the respective lot. This value should be less than 1,000.
- [9] If this value is equal to or greater than 1,000, notify the ULP lead.
- [10] Subsequent to the above actions, the lessee shall determine (through chemical analysis of composite ore samples) the final grade (percentage of U_3O_8 and V_2O_5) for each lot of ore processed. Those values shall be reported to DOE.
- [11] Upon receipt of that data, and in reference to the lot numbers recorded in column Z, enter the values reported into columns J and N, respectively, for each truckload of ore that was composited into said lot.
- [12] The “Final Payment” spreadsheet will automatically calculate the balance of royalty due (column AB) for the specific months that the lot was delivered to the mill.
- [13] In column AC, “Final Settlement Action,” make a notation of “YES” at or near the end of each lot if the final settlement (or payment) has been made.
- [14] In column AD, “Umpire Requested,” make a notation of “YES” next to the lots for which an umpire assay has been requested.

6.2.2.4 “Monthly Worksheet” Spreadsheet for Formerly Inactive Lease Tracts (JD-5A, JD-8A, SR-10, SR-11A, SR-12, SR-14, SR-15A, SR-16, SR-16A, WM-17, AM-19, AM-19A, AM-20, LP-22, LP-22A, LP-23, CM-24, G-26, and G-27)

- [1] Open the “Monthly Worksheet” spreadsheet.
- [2] Place the cursor at the bottom of the existing data. This line represents the summary line for the previous production period.
- [3] Skip a line, and prepare to enter new data.
- [4] From the load detail summary, enter the following data: DATE (in mm/dd/yy format), GROSS (in lbs.), TARE (in lbs.), % H₂O, % U_3O_8 , and % V_2O_5 in columns A, D, E, G, J, and N, respectively.
- [5] Verify the current-month royalty prices for U_3O_8 and V_2O_5 . These can be obtained from the ULP lead or from the lease-specific record file folder.
- [6] Look in the “Royalty” section for the most recent letter from DOE to the lessee that notifies the lessee of the current, effective prices. The price for U_3O_8 is the “Annualized Quarterly Weighted-Average Price for Uranium,” and the price for V_2O_5 is the “Adjusted Quarterly Average Price for Vanadium.”



These prices are calculated in an Excel file titled “ULP UV Price Tracking Spreadsheet.” The spreadsheets are organized by year and titled “Uranium and Vanadium Price Tracking Worksheet.”

- [7] Enter these U_3O_8 and V_2O_5 price values in columns B and C, respectively.
- [8] Copy these values down to the bottom of the current data set.
- [9] From the line immediately above the summary line for the previous month, copy the cell formulas (individually) from columns F, H, I, K, L, M, O, P, Q, R, S, and T.

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- [10] Paste them into each row of the respective column for the new data set.
- [11] Add a current-month summary line at the bottom of the current data set.
- [12] Input the month-end date in column A.
- [13] Copy the price data in columns B and C from the line immediately above.
- [14] Using the SUM function, total columns D, E, F, I, K, and O.
- [15] From the previous month's summary line, copy the cell formulas (individually) from columns G, H, J, L, M, N, P, Q, R, and S.
- [16] Paste them into the respective columns of the current-month summary line.
- [17] Select the current month's data set (all rows and all columns).
- [18] Print the selection.
- [19] Check the calculated values of the "Monthly Worksheet" spreadsheet printed data set (columns F, I, K, and O) against the reported values for NET (in lbs.), DRY TONS, U₃O₈ lbs., and V₂O₅ lbs., respectively, on the load detail summary.
- [20] If the values match, place a checkmark next to the values on the load detail summary.
- [21] Check the summary line total values similarly.
- [22] Check the calculated values of the "Monthly Worksheet" spreadsheet printed data set (columns R, S, and T) against the reported values for ROYALTY VALUE, ROYALTY/TON, and ROYALTY/LOAD, respectively, on the royalty calculation summary.
- [23] If the values match, place a checkmark next to the values on the royalty calculation summary.
- [24] Check the summary line total values similarly.
- [25] If there are discrepancies in any of these values (Steps [19] and [22]), review the data spreadsheets to determine the cause of the discrepancy, and correct the errant values, if possible.
- [26] If such errors are contained in the load detail summary or the royalty calculation summary, notify the ULP lead.
- [27] From the previous month's summary line, copy the formula from column W.
- [28] Paste it into the current-month summary line (column W).
- [29] Use column V to calculate the total royalties received to date by adding the resulting value of column W to the value of column W from the previous month's summary line.
- [30] Use column X to calculate the amount of royalty credit remaining by subtracting the value of column W from the value of column X from the previous month's summary line, or enter "0" if the resulting value is equal to or less than 0.

6.2.2.5 “Royalty Summary” Spreadsheet for Formerly Inactive Lease Tracts (JD-5A, JD-8A, SR-10, SR-11A, SR-12, SR-14, SR-15A, SR-16, SR-16A, WM-17, AM-19, AM-19A, AM-20, LP-22, LP-22A, LP-23, CM-24, G-26, and G-27)

ULP personnel shall:

- [1] Select and copy the current month’s summary line (columns A through T) once the current month’s data have been entered, checked, and verified.
- [2] Open the “Royalty Summary” spreadsheet.
- [3] Using the “Edit” command (“Paste Special – Values” option), paste the data values into the appropriate row on the “Royalty Summary” spreadsheet.
- [4] If the last existing row on the “Royalty Summary” spreadsheet reflects the previous month’s data, paste the new data values in the next available row.
- [5] If that last existing row reflects a “Totals to Date” summary line, skip a row, and paste the new data values in the following row.
- [6] Print the “Royalty Summary” spreadsheet and forward it the ULP lead for review.

6.2.2.6 “Final Payment” Spreadsheet for Formerly “Inactive” Lease Tracts (JD-5A, JD-8A, SR-10, SR-11A, SR-12, SR-14, SR-15A, SR-16, SR-16A, WM-17, AM-19, AM-19A, AM-20, LP-22, LP-22A, LP-23, CM-24, G-26, and G-27)

- [1] Return to the “Monthly Worksheet” spreadsheet.
- [2] Select and copy the current month’s data set (use the spreadsheet row numbers to do this).
- [3] Open the “Final Payment” spreadsheet.
- [4] Paste the selection into the identical rows of the “Final Payment” spreadsheet.
- [5] From the load detail summary, enter the lessee’s ore lot numbers into column Y. The ore lot number is the center number of the LOAD # data. For example, a LOAD # for lease tract C-JD-6 may look like “JD6-03-15.” This data represents the lease tract (JD6), the ore lot number (03), and the truckload number (15). “03” would be entered in column Y.
- [6] From the summary line for the previous month, copy the cell formula from column AA, and paste it into column AA of the current-month summary line.
- [7] If a lot of ore is completed during the month, place the cursor in column Z on the last line of entry (row) for that particular lot.
- [8] Use the SUM function to total the number of dry tons recorded in column I for the respective lot. This value should be less than 1,000.
- [9] If this value is equal to or greater than 1,000, notify the ULP lead.
- [10] Subsequent to the above actions, the lessee shall determine (through chemical analysis of composite ore samples) the final grade (percentage of U₃O₈ and V₂O₅) for each lot of ore processed. Those values shall be reported to DOE.

- [11] Upon receipt of that data, and in reference to the lot numbers recorded in column V, enter the values reported into columns J and N, respectively, for each truckload of ore that was composited into said lot.
- [12] The “Final Payment” spreadsheet will automatically calculate the balance of royalty due (column AA) for the specific months that the lot was delivered to the mill.
- [13] In column AB, “Final Settlement Action,” make a notation of “YES” at or near the end of each lot if the final settlement (or payment) has been made.
- [14] In column AC, “Umpire Requested,” make a notation of “YES” next to the lots for which an umpire assay has been requested.

6.2.2.7 Recordation of Monthly Ore Production and Royalty Calculation Process

Once the monthly spreadsheets are determined to be complete and correct, and the royalty due has been verified, the ULP lead shall:

- [1] Electronically transmit (by letter) a copy of the “Royalty Summary” spreadsheet to the realty officer for his or her review.
- [2] Forward the following to the appropriate records coordinator for incorporation into the official lease tract file: a copy of the transmittal letter, pertinent documents and correspondence (including the lessee’s load detail summaries, royalty calculation summaries, and mill feed summaries), and copies of the monthly spreadsheets.

6.2.3 Production Royalty Payments

Production royalty payments received by DOE in support of ores produced from a DOE lease tract shall be immediately forwarded to the realty officer for processing. The realty officer is responsible for:

- [1] Arranging for the immediate deposit of each royalty payment into an appropriate account of the U.S. Treasury.
- [2] Forwarding a copy of the production royalty payment checks, along with associated documentation and correspondence, to the ULP lead.

Upon receiving a production royalty payment, the ULP lead shall:

- [1] Verify that the amount of production royalty paid is consistent with the amount of royalty due, as stipulated in each lease agreement.
- [2] Note if discrepancies occur.
- [3] If discrepancies occur, bring them to the attention of the realty officer and lessee so that corrections can be made.
- [4] Forward pertinent documents and correspondence to the appropriate records coordinator for incorporation into the official lease tract file.

6.2.4 Annual Royalty Payments

Annual royalty payments remitted to DOE by the lessees shall be immediately forwarded to the realty officer for processing. The realty officer is responsible for:

- [1] Arranging for the immediate deposit of each royalty payment into an appropriate account of the U.S. Treasury.
- [2] Forwarding a copy of the annual royalty payment checks, along with associated documentation and correspondence, to the ULP lead.

Upon receiving an annual royalty payment, the ULP lead shall:

- [1] Verify that the amount of the annual royalty paid is consistent with the amount of annual royalty due, as stipulated in each lease agreement.
- [2] Note if discrepancies occur.
- [3] If discrepancies occur, bring them to the attention of the realty officer and lessee so that corrections can be made.
- [4] Forward pertinent documentation and correspondence to the appropriate records coordinator for incorporation into the official lease tract file.
- [5] Direct ULP personnel to update the appropriate Excel royalty spreadsheet. Lease-specific files are at: projects on 'condor'\LM\UranLeasing\Royalty Spreadsheets.

ULP personnel shall:

- [1] Open the "Monthly Worksheet" spreadsheet.
- [2] Place the cursor at the bottom of the existing data (this line represents the summary line for the previous production period).
- [3] Skip a line and prepare to enter new data.
- [4] For the formerly active lease tracts:
 - [a] From the annual royalty payment data provided, enter the date that the payment was received and the amount of the annual royalty payment in columns A and V, respectively.
 - [b] In column W, add the value in column V to the previous entry in column W to calculate the total current royalty received.
 - [c] In column Y, add the value in column V to the previous entry in column Y to calculate the royalty credit remaining.
- [5] For the formerly inactive lease tracts:
 - [a] From the annual royalty payment data provided, enter the date that the payment was received and the amount of the annual royalty payment in columns A and U, respectively.
 - [b] In column V, add the value in column U to the previous entry in column V to calculate the total current royalty received.
 - [c] In column X, add the value in column U to the previous entry in column X to calculate the royalty credit remaining.

- [6] Update the “Royalty Summary” and “Final Payment” spreadsheets as previously described.
- [7] Print the “Royalty Summary” spreadsheet and forward it the ULP lead for review.

6.2.5 DOE Lease Production and Royalty Summary

The “Royalty Summary” spreadsheet for each of the lease tracts contains and tracks the following information:

- Dry tons of ore produced
- Grade of ore produced (percentage of U_3O_8 and V_2O_5)
- Pounds of U_3O_8 and V_2O_5 produced
- Royalty bid quantity balance (pounds of U_3O_8) (for formerly active lease tracts only)
- Production royalty earned
- Production royalty paid
- Annual royalty paid

ULP personnel shall:

- [1] Update the “Royalty Summary” spreadsheet for each lease tract monthly, or as lessee activity requires (see Sections 6.2.2.2 and 6.2.2.5).
- [2] Annually, electronically submit the summary spreadsheet for each lease tract to the realty officer for review.

6.2.6 Ore Truck Transportation Data

ULP personnel shall review load detail summaries and calculate the number of miles traveled by ore trucks on county, state, and federal roadways, respectively, on a per-day basis. Mileage shall be calculated for loaded trucks from the mine to the processing facility and for unloaded trucks from the processing facility to the mine. This information shall be retained in an electronic format for later use, as needed (e.g., NEPA documentation).

7.0 Site Inspections

7.1 Purpose

DOE must monitor the lessees' activities on their respective lease tracts to ensure that they comply with the site-specific lease agreement requirements and federal, state, and local environmental statutes, rules, and regulations. DOE also must monitor other, non-lessee-related activities on the lease tracts so that unauthorized activities can be identified and reported to the appropriate authorities. DOE shall seek to correct unauthorized activities when possible and prevent such activities from occurring in the future.

7.2 Procedures

ULP personnel shall visit the lease tracts regularly and conduct cursory or full site inspections.

7.2.1 Cursory Site Inspections

Cursory site inspections are conducted with the intention of maintaining a presence in the area of the lease tracts as well as in the nearby communities.

- [1] ULP personnel shall conduct cursory site inspections periodically throughout the year, typically twice a month, and especially during periods of lessee inactivity. During these inspections, ULP personnel shall attempt to identify recent activities that could affect the environment or the lessee's operational facilities on the lease tracts.
- [2] Results of cursory site inspections shall be documented electronically in the "Lease Tract Trip Log" file. The "Lease Tract Trip Log" shall contain, at a minimum, the date of the inspection, the lease tract visited, and a description of observations or activities.

7.2.2 Full Site Inspections

Full site inspections are more detailed than cursory site inspections.

- [1] ULP personnel shall conduct full site inspections once or twice a year, as needed. ULP personnel may conduct full site inspections while they are in the area conducting other activities.
- [2] ULP personnel shall inspect all practicable areas within the lease tracts to identify changes to the environment or to the lessee's operational facilities. Inspections may include the following items or areas of concern:
 - Condition and usability of primary and secondary access roads.
 - Site security, when applicable.
 - Indications of damage or vandalism.
 - General housekeeping.
 - Physical safety and environmental hazards.
 - Fire-suppression and emergency-response equipment.
 - Underground and overhead utilities.

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- Compressors and compressed air lines.
 - Potable water supply and sanitary facilities, including on-site domestic sewage systems, if applicable.
 - Noxious weed infestations.
 - Mine-water treatment ponds, pond liners, and pond enclosures (such as fencing or netting, if required).
 - Trucks, machinery, and earthmoving equipment.
 - Waste spills or discharges.
 - Fuel storage areas.
 - Soil erosion and storm-water-management controls.
 - Topsoil stockpiles (check stabilization and revegetation).
 - Unsecured mine openings.
 - Mine portals and other mine openings (check security and structural integrity).
 - Surface workings (check competence and structural integrity).
 - Underground mine workings. While accompanied by lessee representatives, ULP personnel shall verify that maps depict underground mine workings accurately and resolve apparent discrepancies through the use of standard underground surveying techniques.
 - Previously closed or reclaimed mine workings.
 - Surface facilities, including shop buildings, sheds, and mine-waste-rock dumps.
 - Lease tract boundary markers and monuments.
 - “Designated mining operation” permit boundaries.
 - Boundary lines established within mine workings that cross lease tract boundaries. ULP personnel shall use standard underground surveying techniques to verify the placement of such lines.
 - Lessee’s reclamation activities.
 - Other activities on or near the lease tracts, such as woodcutting, oil and gas exploration and production, and special-use-permit activities that may or may not be authorized.
 - Lessee’s progress in mine development and ore production.
 - Gobbing within underground mine workings. ULP personnel shall confirm that the lessee’s placement of mine waste-rock or other low-grade-ore materials (protore) in underground mine workings has been approved by the realty officer prior to placement and that it does not restrict or block future access to existing ore reserves.
- [3] When practical, ULP personnel shall conduct full inspections jointly with other federal or state agencies.
- [4] ULP personnel shall document full site inspections electronically in a ULP “Inspection Report” file, which shall include the following minimum information for each inspection:

the date; lease tract identification; inspectors' names; a summary of findings; and actions required, if applicable.

7.2.3 Noncompliant Conditions

- [1] If a noncompliant condition or need for action is discovered on a lease tract, ULP personnel shall verbally contact the lessee's representative and notify him or her of the action required. This notification shall be documented in the ULP "Inspection Report" file as well.
- [2] If the noncompliant condition or need for action is considered significant, as determined by the ULP lead, written notification to the lessee shall follow the verbal notification. The ULP lead shall prepare a draft letter to the lessee, describing the situation and required action, and electronically submit it to the realty officer for review and signature. The realty officer is responsible for transmitting the letter to the lessee and sending copies to the BLM point of contact and CDRMS, in accordance with the BLM MOU and CDRMS MOU.
- [3] ULP personnel shall coordinate with BLM on decisions involving BLM surface management responsibilities and shall invite BLM to participate in associated site visits.

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8.0 Pulp Ore Sample Analysis

8.1 Purpose

Appendix B of each lease agreement specifies that the lessee shall weigh and sample each lot of ore delivered from the leased premises to a mill or other receiving station during each calendar month that such ore is delivered. The lessee shall ensure that each final sample is divided into four pulp samples, one of which shall be retained for DOE, one of which shall be retained by the lessee for assay purposes, and two of which shall be held in reserve by the lessee for possible umpire analysis. The lessee's pulp sample shall be assayed for U_3O_8 and V_2O_5 content, and the results of that analysis shall be transmitted to DOE.

8.2 Procedures

ULP personnel shall follow the procedures described below to ensure proper processing of pulp ore sample analysis results.

- [1] Upon receipt of the lessee's pulp ore sample analysis, ULP personnel shall ensure that U_3O_8 assays are adjusted to the nearest 0.001 percent and that V_2O_5 assays are adjusted to the nearest 0.01 percent.
- [2] The ULP lead shall specify that an independent laboratory assay no fewer than one in five of the pulp ore samples retained for DOE for U_3O_8 and V_2O_5 content. DOE's subcontracted laboratory shall report the assayed contents to the ULP lead.
- [3] ULP personnel shall compare the assay (U_3O_8 and V_2O_5) values, as determined in Section 8.2[2], with the assay (U_3O_8 and V_2O_5) values reported by the lessee. If the lessee's assays differ from DOE's by more than 0.01 percent U_3O_8 or 0.1 percent V_2O_5 , such differences shall be brought to the attention of the ULP lead, who shall then decide if the lot will be submitted for umpire assay.
- [4] The ULP lead shall initiate requests for umpire assays and shall furnish a copy of the request to the realty officer. The realty officer is responsible for forwarding the request for umpire assays to the lessee for immediate action. DOE and the lessee shall agree on the third-party umpire laboratory used for this process.
- [5] When the umpire assay is reported, if its value is between the assay values of DOE and the lessee, it shall be considered final. If not, the assay value that is nearer the umpire assay values shall be considered final. That party whose assay values are furthest from the umpire assay values shall pay for the umpire's services.
- [6] If the assay values (U_3O_8 , V_2O_5 , or both) for samples DOE analyzed differ substantially from the values the lessee reported, and if the umpire assay values are consistent with DOE's assayed values for the same sample, the ULP lead shall assess the need to analyze the lessee's subsequent pulp ore samples more frequently.
- [7] Pulp ore samples, or the unused portions thereof, shall be retained by DOE's subcontracted laboratory, the umpire laboratory, or both for 6 months or until issues pertaining to the respective samples are resolved. At such time, the laboratory shall dispose of the samples as appropriate.

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9.0 Sample Plant Evaluation

9.1 Purpose

Appendix B of each lease agreement establishes requirements for weighing, sampling, and assaying each lot of ore produced from the DOE lease tracts and delivered to a mill or other receiving station. Accordingly, each mill or other receiving station that receives lease tract ores must possess the capabilities (via sample plant) to perform these operations and must have procedures in place to adequately comply with these requirements.

9.2 Procedures

ULP personnel shall annually evaluate sample plants associated with mills or other receiving stations that receive lease tract ores for processing. This evaluation shall ascertain whether (1) written procedures, formulated by plant management, exist and were developed in accordance with standard and accepted practices in ore sampling; and (2) sample plant personnel follow the established acceptable procedures for obtaining weights for each lot of ore, collecting and preparing samples for each lot of ore, and determining the moisture content of each lot of ore delivered. Prior to the initial evaluation, the ULP lead shall contact plant management and obtain permission to enter the plant to conduct such evaluations.

- [1] Prior to sample plant evaluations, the ULP lead shall contact plant management and acquire an up-to-date version of the plant's written operating procedures for the ore sampling operations to be evaluated. Upon review of the procedures, if the ULP lead determines that any of the procedures deviate from standard and accepted practices in ore sampling, he or she shall bring them to the attention of the appropriate plant official before the plant's evaluation.
- [2] The ULP lead shall identify an individual who is qualified to perform sample plant evaluations. That evaluator shall:
 - [a] Make arrangements with the appropriate sample plant officials for scheduled evaluations.
 - [b] Conduct the physical evaluation of plant operations, including any or all of the following activities: weighing, moisture determination, crushing, sampling, and sample preparation.
 - [c] Appropriately document the results of the plant evaluation, such as in a field notebook.
 - [d] Prepare a narrative report of his or her findings for submittal to the ULP lead, noting (1) deviations from standard and accepted practices in ore sampling, and (2) deviations from the plant's written procedures.
 - [e] Confer with the ULP lead and realty officer about unusual or controversial findings to determine the appropriate action.
 - [f] Conduct unannounced evaluations of plant operations—subject to the ULP lead's approval—in the same manner as scheduled evaluations. Unannounced evaluations shall be limited in scope to include only specific plant operations of concern.

- [g] Prepare and submit reports of findings in the same manner as scheduled evaluations, as described in Step [d] above.
- [3] In evaluating the plant's weighing operations, the evaluator shall:
- [a] Determine if the scale platform is clean and free of the sides of the pit. Clearance between the platform and pit walls shall be at least 0.5 inch.
 - [b] Determine if any obstructions would prevent the scale from functioning freely and correctly.
 - [c] Determine if the scale balances properly.
 - [d] Determine if the state has inspected and certified the scale within the past 6 months.
 - [e] If not, determine if plant management has some other independent, qualified organization to do regular inspections.
 - [f] Note the organization's name and inspection frequency.
- [4] In evaluating the plant's moisture determination operations, the evaluator shall:
- [a] Observe the procedure for collecting moisture samples.
 - [b] Determine if the moisture samples are prepared and dried in accordance with the written procedures.
- [5] Following the evaluation process, ULP personnel shall prepare a report that summarizes the evaluation process and findings that were noted. This report shall be forwarded to the ULP lead for review. Upon concurrence with the report, the ULP lead shall electronically transmit the evaluation report (by letter) to the realty officer for review.
- [6] If the evaluation contains negative findings, the ULP lead, with the realty officer's concurrence, shall notify the lessee and sample plant officials of such findings and initiate discussions on the steps needed to correct the findings.

10.0 Use of Self-Rescuer

10.1 Purpose

The W65 self-rescuer respirator provides emergency respiratory protection against carbon monoxide gas resulting from underground fires or explosions; therefore, ULP personnel shall always carry the device when entering underground mines so that it is ready for immediate use. The W65 self-rescuer, supplied by the LMS contractor, exceeds the National Institute for Occupational Safety and Health's and the Mine Safety and Health Administration's (MSHA) specified gas life requirements of 60 minutes against 1 percent carbon monoxide in air (at 25 °C, 95 percent relative humidity) at a continuous flow rate of 32 liters per minute. The self-rescuer respirators are used in accordance with MSHA regulations and the lessees' operating procedures.

10.2 Procedures

ULP personnel shall complete an MSHA-approved training course in the proper use of the self-rescuer before donning the equipment and entering an underground mine. The LMS contractor's training coordinator shall retain documentation of the training.

The self-rescuer is a one-time device and shall be discarded after use. ULP personnel shall never use the respirator for uses other than escape through areas containing carbon monoxide in otherwise breathable air. The device shall not be used for exploration surveys or normal working activities. ULP personnel shall discard the self-rescuer if it is used or the seal is broken. The respirator shall be used immediately at the first sign of a fire or explosion, even if no smoke is visible. Before going underground, ULP personnel shall examine the self-rescuer for external damage.

To use the self-rescuer:

- [1] Remove the protective boot that covers the device (if in place).
- [2] Release the locking device by pressing your thumb under the red release lever and pushing up until the canister seal is broken.
- [3] Grip the red release lever between your thumb and forefinger, and pull up hard. This should break the seal and release the locking mechanism to loosen the cover.
- [4] Remove the cover from the container, and discard it.
- [5] Grip the head harness of the respirator, and pull the respirator out of the container. Discard the container. (If the container is dented, separation may be prevented—the filter can still be used while it is inside the protective container. Because of the container's weight, it is best to support it with one hand.)
- [6] Pull the nose clip away from the mouthpiece.
- [7] Insert the mouthpiece lugs into your mouth, and bite the lugs firmly.
- [8] Close your lips tightly around the mouthpiece; a tight seal must be maintained throughout the entire escape to safety.
- [9] Pull the pads of the nose clip apart, and position the pads over your nostrils.

- [10] When you release the pads, the pressure they create seals your nasal passage.
- [11] After taking off the headgear, pull the head harness over your head. The lower strap should be behind your head, and the upper band should be above your forehead. The head harness will support the weight of the respirator.
- [12] Replace the headgear. Be sure not to dislodge the head harness. The self-rescuer is now ready for use.
- [13] Breathing through the self-rescuer requires more effort than breathing under normal conditions; therefore, when you are escaping, keep calm and avoid excessive exertion. Do not sneak a breath or two of air into your mouth by opening your lips.



Note

Expect a burning sensation while using the unit—if it's not burning or stinging, then it's not working.

10.3 Inspection and Maintenance

Self-rescuer devices have an in-service life of 10 years from the date inscribed on the bottom of the container. ULP personnel shall periodically inspect the self-rescuer for exterior damage, which could break the seal. Monitoring of air tightness shall be accomplished by comparing the weight of the device over time. ULP personnel shall:

- [1] Weigh each self-rescuer device every 90 days on an electronic scale.
- [2] Record the following information in the “Self-Rescuer Calibration Log”:
 - Unit number
 - Original weight of unit
 - Date of weighing
 - Electronic scale name and serial number
 - Date of last “check weight” calibration
 - Current weight of unit
 - Change in weight
- [a] If the unit increases in weight by more than 10 grams, remove the device from service, as recommended by the manufacturer.
- [b] Maintain the “Self-Rescuer Calibration Log” as an Excel file throughout the life of the unit. The file can be found at: projects on ‘condor’\LM\UranLeasing\Self Rescuer Calibrations.

11.0 Processing of Lease Relinquishments or Cancellations

11.1 Purpose

The government mining leases DOE administers can be terminated by the lessees or as a result of government action. Procedures for termination in either case shall be similar but shall require certain actions to ensure that royalties are paid and that reclamation activities are performed and completed in accordance with lease stipulations and approved reclamation plans.

11.2 Procedures

11.2.1 Leases Relinquished by Lessee

Upon written notification to DOE that a lessee wishes to relinquish a lease, the realty officer is responsible for notifying the lessee of the general requirements of Articles XXI and XXIII and Appendix B of the respective lease agreement. In support of the lessee's request, ULP personnel shall:

- [1] Review available exploration and mining data pertaining to the respective lease tract to determine the estimated amount of ore reserves that remain on the lease tract.
- [2] Review ore-production records, royalty payments, and other contractual commitments associated with the respective lease tract. Promptly submit the findings to the realty officer.
- [3] Review the lessee's plans (exploration and mining, both of which shall include reclamation plans), DOE's letters approving or disapproving said plans, the lessee's activity reports and other correspondence, and lease tract inspection documentation to identify potentially disturbed areas that need to be reclaimed in accordance with lease provisions.
- [4] Contact the lessee, and obtain up-to-date copies of mine-development and mine-progress maps, drill hole logs, and drill hole data, as applicable.
- [5] Contact the lessee and arrange for an on-site examination of the lease tract to verify actual field conditions and identify outstanding issues or areas of concern. Advise BLM of the lessee's relinquishment request, and invite the appropriate BLM Field Office representatives to participate in the on-site examination.
- [6] During the on-site examination, consider each of the items listed below, and determine the need for the lessee to perform additional activities to address undesirable conditions resulting from the lessee's operations:
 - Restoration of exploration drill sites and drill roads.
 - Removal of trash and debris.
 - Restoration or preservation of existing drainages.
 - Proper disposal of low-grade-ore stockpiles and other residual ore materials.
 - Contouring of mine-waste-rock piles.
 - Removal of buildings, foundations, and other structures, including bulk storage tanks.

- Removal of lessee-owned equipment.
 - Permanent closure of mine openings (to be rendered inaccessible unless otherwise directed by DOE).
 - Demolition or removal of utilities (power lines and septic systems).
 - Proper sampling and disposal of wastes, contaminants, or contaminated materials.
 - Proper disposal of available surface soil materials.
 - Revegetation of disturbed areas.
 - Correction of safety and environmental hazards or other undesirable conditions.
 - Proper compliance with federal, state, and local statutes and regulations pertaining to discharges into the air, soil, or water.
- [7] Document the results of the on-site examination on the form titled “DOE Uranium Leasing Program Field Examination Notes” (LMS 1986). This documentation should include a brief narrative of the activities being monitored, outstanding issues that are identified and need to be addressed, and other conditions that are warranted and affect DOE’s approval of the reclamation activities. Distribute copies of the Field Examination Notes to the examination participants, and retain the original as part of the official lease tract file.
- [8] Following the on-site examination, prepare for submittal to the realty officer a report that documents the results of the examination. This report shall discuss applicable items of paragraph [6] of this section. The report shall also outline, in detail, actions the lessee is required to take to restore the leased premises to a “condition satisfactory to the Realty Officer” as specified in Article XXIII of the lease agreement.
- [9] The ULP lead shall draft a response letter to the lessee that documents the results of the on-site examination and notifies the lessee of outstanding issues. Following a review of the on-site examination report and concurrence with the ULP lead’s recommendations, the realty officer is responsible for finalizing the letter to the lessee, which will include a request for a corrective action plan and a proposed schedule for completing the work. This letter shall be distributed as follows:
- [a] The original letter, together with supporting documentation, shall be transmitted to the lessee.
 - [b] Copies of the letter, together with supporting documentation, shall be forwarded to the ULP lead and to BLM or other agencies, as appropriate.
- [10] ULP personnel shall maintain surveillance of the lessee’s reclamation activities and periodically report the progress of such to the realty officer. The following items shall be routinely monitored for compliance:
- Exploration drill sites and drill roads (except main access roads) are graded to create a topography compatible with the surrounding terrain that is subject to minimal erosion potential.
 - Exploration drill holes are permanently plugged and are suitably identified.

- Mine-waste-rock dumps are contoured, where practicable, into the natural terrain with slopes less than 4:1 and left with an undulating surface that shall promote runoff capture and revegetation (see Section 12.3.5, “Reclamation Practices”).
 - Available surface soil materials are efficiently utilized in reclaiming the disturbed areas.
 - Wastes and contaminants are removed from the site and properly disposed of.
 - Safety concerns are identified and satisfactorily addressed.
 - Disturbed areas are reseeded with an appropriate seed mixture. Over the course of 2 years or more, ensure that adequate vegetation is established.
- [11] The realty officer is responsible for notifying the lessee that the reclamation effort is, or is not, acceptable.
- [a] If the lessee’s reclamation effort is deemed acceptable, the realty officer is responsible for notifying the lessee, in writing, that the reclamation obligations set forth in Articles XXI and XXIII and Appendix C of the lease agreement have been satisfied. Furthermore, the realty officer is responsible for confirming to the lessee the termination of the lease and arranging for the release of the lessee’s reclamation bond.
- [b] If the lessee’s reclamation effort is deemed unacceptable, the realty officer is responsible for notifying the lessee, in writing, that additional effort is needed to satisfy the reclamation requirements set forth in the lease agreement. This notification will include a discussion of the specific issues that the lessee needs to address. ULP personnel shall monitor the lessee’s efforts in accordance with paragraph [10] of this section.
- [c] The realty officer may, at his or her sole discretion, waive any or all of the above requirements when it is determined to be in the government’s best interest.
- [12] Failure by the lessee to perform the required activities shall subject the lessee’s reclamation performance bond to forfeiture.

11.2.2 Leases Canceled for Cause

The realty officer may, at his or her sole discretion, elect to cancel a DOE mining lease pursuant to Article XXII of the lease agreement. To cancel a lease for cause, the following actions shall be completed:

- [1] ULP personnel shall initiate and complete reviews consistent with Section 11.2.1, paragraphs [1], [2], and [3].
- [2] The ULP lead shall prepare and submit to the realty officer a report recommending that the lease be canceled for cause, citing the specific actions taken, or not taken, by the lessee that led to the recommendation.
- [3] The realty officer is responsible for reviewing the report and associated documentation and determining whether the lease agreement should be canceled for cause. If the realty officer determines that the lease agreement should be canceled for cause, he or she is responsible for notifying the lessee, in writing, of the decision to cancel the lease. This

notification will include the specific reasons for the cancellation decision and will outline actions required of the lessee to satisfy Article XXIII of the lease agreement.

- [4] In support of the lease cancellation, ULP personnel shall:
 - [a] Contact the lessee and obtain up-to-date copies of mine-development and mine-progress maps, drill hole logs, and drill hole data, as applicable.
 - [b] Contact the lessee and arrange for an on-site examination of the lease tract to verify actual field conditions. Advise BLM that the lease has been canceled and invite the appropriate BLM Field Office representatives to participate in the on-site examination.
 - [c] During the on-site examination, consider the items listed in Section 11.2.1, paragraph [6], and determine the need for the lessee to perform additional activities to address undesirable conditions resulting from the lessee's operations.
 - [d] Following the on-site examination, prepare for submittal to the realty officer a report that documents the results of the examination. This report shall discuss items listed in Section 11.2.1, paragraph [6], that apply to the lessee's operations. The report also shall outline, in detail, actions the lessee is required to take to restore the leased premises to a "condition satisfactory to the Realty Officer," as specified in Article XXIII of the lease agreement.
- [5] The ULP lead shall draft a response letter to the lessee that documents the results of the on-site examination and notifies the lessee of outstanding issues.
- [6] Following review of the on-site examination report and concurrence with the ULP lead's recommendations, the realty officer is responsible for finalizing the letter to the lessee, which will include a request for a proposed schedule for completing the work. This letter shall be distributed as follows:
 - [a] The original letter, together with supporting documentation, shall be transmitted to the lessee.
 - [b] Copies of the letter, together with supporting documentation, shall be forwarded to the ULP lead and to BLM or other agencies, as appropriate.
- [7] ULP personnel shall maintain surveillance of the lessee's reclamation activities and periodically report the progress of such to the realty officer. The items listed in Section 11.2.1, paragraph [10], shall be routinely monitored for compliance.
- [8] The realty officer is responsible for notifying the lessee of whether the reclamation effort is acceptable:
 - [a] If the lessee's reclamation effort is deemed acceptable, the realty officer is responsible for notifying the lessee, in writing, that the reclamation obligations set forth in Articles XXI and XXIII and Appendix C of the lease agreement have been satisfied. Furthermore, the realty officer is responsible for confirming to the lessee the termination of the lease and arranging for the release of the lessee's reclamation bond.

- [b] If the lessee's reclamation effort is deemed unacceptable, the realty officer is responsible for notifying the lessee, in writing, that DOE may institute the necessary rehabilitation effort and declare the lessee's reclamation performance bond forfeited.
- [c] The realty officer may, at his or her sole discretion, waive any or all of the above requirements when it is determined to be in the government's best interest.

11.2.3 Recordation of Relinquishment and Termination Process

At the completion of the relinquishment process (Section 11.2.1) and termination process (Section 11.2.2), ULP personnel shall compile pertinent documents and correspondence associated with the actions taken and forward them to the appropriate records coordinator for incorporation into the official lease tract file.

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12.0 Reclamation Practices

12.1 Purpose

Lessees are required to promptly reclaim disturbed areas that are no longer needed for future operational activities, in accordance with Appendix C of the lease agreements. The goals of reclamation are to remove or mitigate physical and radiological hazards on the lease tracts; reshape the land surface to contours that are consistent with the surrounding, natural topography (to the extent possible); provide a diverse and stabilizing vegetative cover; and enhance wildlife habitat. The following procedures shall serve as a guide to ULP personnel when overseeing reclamation activities or in those instances when ULP personnel are self-performing the reclamation activity. Actual procedures implemented by the lessee or ULP personnel need not be limited to the procedures described herein, as the use of new, state-of-the-art reclamation techniques are encouraged when they are practicable and approved by the realty officer.

12.2 Procedures

- [1] ULP personnel shall oversee lessees' reclamation activities to ensure that they comply with federal, state, and local environmental regulations, lease stipulations, and exploration and mining plan provisions.
- [2] Prior to reclamation, ULP personnel shall consult with BLM to determine if historic (i.e., eligible for inclusion in the National Register of Historic Places) mine structures or features (such as trash piles, collapsed buildings, old mining equipment, other debris) are on the site and, if so, determine if BLM wants them preserved. BLM must accept ownership of the historic structures or features after the lease tract is restored to public domain.
- [3] Prior to reclamation, ULP personnel shall invite CDRMS and BLM personnel to meet with the lessee on the specific lease tract to discuss proposed reclamation plans. At the site visit, the lessee will discuss the proposed reclamation actions. ULP personnel shall document the on-site discussions and decisions on the DOE Uranium Leasing Program Field Examination Notes form (LMS 1986). Because disturbances and conditions vary greatly from one mine site to another, ULP personnel shall ensure that the agreed-on reclamation procedures are appropriate to the unique characteristics of the site.
- [4] ULP personnel shall ensure that the lessee removes all structures and debris associated with the exploration or mining operation, unless other arrangements have been made and approved by the applicable parties (see paragraph [2], above). Non-hazardous debris and trash (e.g., foundations, mine equipment, structures) may be buried beneath waste rock, backfilled into mine openings, or removed from the site. Un-mounted or mounted tires and suspected hazardous materials shall be removed from the site and disposed of at an approved facility.
- [5] ULP personnel shall monitor soil erosion and vegetation establishment on reclaimed sites annually for several years until the site is deemed to be successfully reclaimed. Sites are considered successfully reclaimed when soils are stable and a diverse, self-sustaining vegetative cover is established at a density similar to that present on the surrounding, undisturbed landscape.

- [6] ULP personnel shall invite the realty officer and BLM and CDRMS representatives to attend a final inspection of the reclaimed site. The realty officer, or his or her designee, is responsible for making the final determination as to whether reclamation requirements and stipulations are met and reclamation is successful.

12.3 Reclamation Guidelines

12.3.1 Closure of Exploration Drill Holes by ULP Personnel

ULP personnel shall plug and backfill abandoned exploration drill holes as follows:

- [1] Shovel drill cuttings into the drill hole before plugging.
- [2] Backfill the drill hole with a polyurethane foam (PUF) plug, ensuring that the thickness of the PUF plug is at least 1.5 times the drill hole diameter. For example, a 6-inch-diameter drill hole shall be plugged with a PUF plug having a minimum thickness of 9 inches. The top of the PUF plug shall be at least 1 foot below the undisturbed land surface.
- [3] Fill the remaining space above the PUF plug with local soil (to inhibit degradation of the PUF by ultraviolet light or fire and promote revegetation efforts).

12.3.2 Closure of Exploration Drill Holes by the Lessee

Lessees shall plug and fill drill holes in accordance with the state-approved drilling permit.

12.3.3 Closure of Bored or Blasted Shafts (by ULP Personnel or the Lessee)

- [1] To close a shaft using a PUF plug:
- [a] Close the shaft with a PUF plug, ensuring that the thickness of the PUF plug is greater than the greatest horizontal dimension of the shaft. For example, a shaft that measures 5 feet by 5 feet shall be plugged with a PUF plug having a thickness greater than 7.1 feet. The top of the PUF plug shall be at least 1 foot below the land surface.
 - [b] Fill the remaining space above the PUF plug with local soil (to inhibit degradation by ultraviolet light or fire).
 - [c] Roughen the soil surface, and broadcast the approved seed mixture (see Table 1).
- [2] To close a shaft using a bat gate or grate:
- [a] Either:
 - [i] Fabricate a bat gate or grate over the shaft opening in accordance with specifications provided by ULP personnel; or,
 - [ii] Prefabricate a bat gate or grate in accordance with specifications provided by ULP personnel, and install it in the shaft opening.
 - [b] If needed, roughen the surface around the shaft, and broadcast the approved seed mixture (Table 1).

12.3.4 Closure of Adits

When closing adits, lessees or ULP personnel shall identify bulk residual radiological material (such as protore, low-grade stockpiles, or other mine waste-rock containing elevated radioactivity levels) at the mine site, and ensure that it is placed below the surface (e.g., within the adit) and away from surface runoff to minimize its migration and the potential for future human exposure. One of the following techniques shall be used to close open adits:

[1] Backfill Method

- [a] First, backfill the adit with large boulders, which will serve as a backstop for additional mine waste-rock.
- [b] Backfill the remaining area with mine waste-rock to within approximately 1 foot of the portal opening.
- [c] Complete portal backfilling by placing ULP-personnel-approved surface soil on top of the mine waste-rock, leaving a slight mound (to allow for future subsidence) or to match nearby undisturbed topography.

[2] Bat Gate/Grate Method

- [a] Bat gates or grates fabricated in place shall not be used to close an adit if it has an overhead structure that is unsafe, unsound, or incompetent. In these situations, the lessee or ULP personnel shall close the adit by backfilling it with mine waste-rock or installing a prefabricated bat gate or grate on the end of a culvert, sized to fit the subject opening and of suitable length to effect a safe installation. In situations where a bat gate or grate is appropriate, the lessee or ULP personnel shall:
 - [b] Either:
 - [i] Fabricate a bat gate or grate within the adit opening in accordance with specifications provided by ULP personnel; or,
 - [ii] Prefabricate a bat gate or grate (e.g., on the end of a culvert) in accordance with specifications provided by ULP personnel, and install it in the adit opening.
 - [c] If needed, camouflage the bat gate or grate to minimize potential for vandalism. Acceptable camouflage includes painting or placing dead tree skeletons in front of the gate or grate.
 - [d] If needed, roughen the area around the adit opening, and broadcast an approved seed mixture (Table 1).

[3] Bulkhead Method

- [a] Construct bulkheads with masonry (e.g., cinder block, native stone, brick) or with a combination of PUF and brattice cloth, wood, wire, or other matrix. Ensure that PUF bulkheads are sheltered from ultraviolet light.
- [b] Use PUF or concrete as mortar when constructing a masonry bulkhead.
- [c] If needed, roughen the area around the adit opening, and broadcast an approved seed mixture (Table 1).

- [4] Blasting Method
 - [a] Lessees or ULP personnel shall close adits with blasting techniques only as a last resort, and then only in accordance with an approved blasting plan that a licensed, qualified blasting technician has prepared.

12.3.5 Reclamation of Surface Disturbances and Mine-Waste Rock Dumps

ULP personnel or lessees shall reclaim surface disturbances and mine-waste-rock dumps so that the final surface contours conform to the natural, undisturbed topography. Following are recommended practices:

- [1] Identify bulk residual radiological material (such as protore, low-grade stockpiles, or other mine waste-rock containing elevated radioactivity levels), and ensure that it is buried below the surface and away from surface runoff.
- [2] Backfill or recontour surface pits, trenches, and other depressions with mine-waste-rock materials.
- [3] Recontour mine-waste-rock dumps to slopes no steeper than 4:1, where practicable.
 - [a] First, excavate a large, deep trench around the perimeter of the dump, where practicable, and temporarily store the excavated soil material along the outside of the trench.
 - [b] Push mine waste-rock into the trench, allowing much of the dump to be buried below grade.
 - [c] Redistribute the stored excavated soil material across the recontoured dump area.
 - [d] If available, redistribute stockpiled surface soil materials across the disturbed area.
 - [e] Redistribute large rocks, trees, and other slash across the disturbed area as well, providing a diversity of microenvironments.
 - [f] On slopes greater than 5:1, pock the surface with a trackhoe bucket; the pocks help contain and control storm-water runoff and provide microenvironments that promote seed germination.
 - [g] On slopes less than 5:1, rip the surface along the contour or pock the surface to contain and control storm-water runoff and provide microenvironments that promote seed germination.
- [4] Rip or scarify hard-packed surfaces in all areas of the mine site that have been previously disturbed and are void of desirable vegetation.
- [5] Reseed disturbed areas with the approved seed mixture (Table 1).

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- [6] Control storm-water runoff and divert it away from open or closed mine openings. Monitor the effectiveness of storm-water controls during site reclamation activities and afterward until adequate vegetation is established on the disturbed areas, typically in 3 to 5 years. Storm-water-control features may include water bars, diversion trenches, check dams, or stock ponds.
- [7] Monitor site conditions and mitigate undesirable conditions, such as noxious weed infestations or erosion features, until the realty officer, or his or her designee, has deemed the site successfully reclaimed.

Table 1. BLM-Approved Seed Mix

Species		Broadcast Application Rate (lbs. PLS/acre)^a
Scientific Name	Common Name	
<i>Pascopyrum smithii</i>	Arriba western wheatgrass	4.0
<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>	Slender wheatgrass	2.0
<i>Achnatherum hymenoides</i>	Paloma or Rimrock Indian ricegrass	4.0
<i>Bouteloua gracilis</i>	Hachita blue grama	2.0
<i>Pleuraphis jamesii</i> (florets)	Galleta grass	2.0
<i>Hesperostipa comata</i> ssp. <i>comata</i>	Needle-and-thread grass	1.0
<i>Nassella viridula</i>	Lodorm green needlegrass	2.0
<i>Linum lewisii</i>	Lewis blue flax	1.0
<i>Penstemon palmeri</i>	Palmer penstemon	0.5
<i>Sphaeralcea coccinea</i> or <i>Sphaeralcea parvifolia</i>	Scarlet or Parvifolia globemallow	0.3
<i>Atriplex canescens</i>	Fourwing saltbush	3.0
<i>Krascheninnikovia lanata</i>	Winterfat	1.0
Total PLS/acre		22.8

^a lbs. PLS/acre = pounds of pure live seed per acre

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13.0 Restoration of Lands to the Public Domain

13.1 Purpose

DOE's long-term goal for lands held under its administrative control but no longer needed to support the ULP is to restore such lands to the public domain.

13.2 Procedures

The procedures set forth below define the mechanism by which the administrative control of lands (declared excess to the needs of the ULP) can be transferred from DOE to BLM.

- [1] The ULP lead shall periodically review the lease tract files and determine if there are any lease tracts eligible for restoration to the public domain. To be considered eligible, lease tracts must be inactive (i.e., no longer leased to industry under the ULP), and legacy mine sites and associated undesirable conditions on those lease tracts must be reclaimed to BLM's satisfaction.
- [2] ULP personnel shall coordinate with representatives of the appropriate BLM Field Office to ensure that outstanding issues relating to DOE's and its predecessor agencies' operations on the identified lease tracts have been satisfactorily addressed.
- [3] If, on the basis of that review, one or more lease tracts are determined to be eligible for restoration, the ULP lead shall advise the realty officer that steps should be taken to initiate the restoration process for the lands contained therein. Upon concurrence, the realty officer is responsible for directing the ULP lead to proceed.
- [4] ULP personnel shall prepare a Request to Relinquish Lands (Request) for the eligible lands. This Request shall be completed in accordance with Title 43 *Code of Federal Regulations* Part 2372; specifically, it shall respond to the 13 topics of discussion.
- [5] Upon completion of the Request, the ULP lead shall submit the Request to the realty officer for review and transmittal to BLM. A draft transmittal letter shall be prepared and provided to DOE for its convenience.
- [6] Upon concurrence, the realty officer is responsible for finalizing the transmittal letter to BLM and forwarding the entire Request package to the BLM Colorado State Office for processing.
- [7] Subsequent to transmittal, ULP personnel shall routinely contact BLM officials to keep apprised of the status of the restoration process and assist BLM in the on-site field reviews of the properties.
- [8] ULP personnel shall monitor the *Federal Register* for the publication of BLM's notice of intent to restore lands, as applicable and pertaining to DOE's requests. Subsequent to this notice and the associated 30-day public comment period, ULP personnel shall verify with BLM officials that the restoration of lands to the public domain is complete.
- [9] A copy of the Request, along with applicable correspondence and other supporting documentation, shall be forwarded to the appropriate records coordinator for incorporation into the official lease tract files.

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14.0 Glossary of Terms

Annual royalty—The amount specified in each lease agreement that is due and payable to DOE at the beginning of each lease year so that the lessee may retain the lease for the ensuing year.

Assay—A determination of an ore sample's mineral content, U_3O_8 and V_2O_5 , made by chemical laboratory analysis.

DOE NEPA compliance officer—The DOE employee responsible for reviewing NEPA documents and approving actions as categorically excluded from further NEPA documentation.

Gobbing—The storage of mine waste rock material and protore in underground mine workings.

Grab ore sample—A bulk sample of ore that is systematically collected (grabbed so as to be representative of the whole) from a stockpile of ore to be analyzed to determine the preliminary grade (percentage of U_3O_8 and V_2O_5) of ore.

Lease agreement—The document by which the lessee is permitted certain rights with respect to a given lease tract. Those rights include, among others, the right to explore for, develop, and mine ores containing U_3O_8 , V_2O_5 , and associated minerals.

Lease tract—Any parcel of land administratively controlled by DOE, which is or has been eligible for lease to private industry for the exploration, development, and mining of U_3O_8 ores pursuant to the authorities granted under the Atomic Energy Act.

Load detail summary—The lessee's ore-production document (regardless of name [e.g., *Cotter Corporation Monthly Laboratory Report*]) provided to DOE that gives a summary account of each truckload of ore shipped by the lessee (from a specific lease tract during a given month) to a mill or other receiving station. The document itemizes the following data: date of shipment; lease, lot, and load number or scale ticket number; truck identification number; gross weight; tare weight; wet pounds of ore; moisture content of ore; dry pounds or dry tons of ore; ore assays (percentages of U_3O_8 and V_2O_5 , respectively); and pounds of U_3O_8 and V_2O_5 , respectively, contained in the ore.

Lot of ore—One or more loads of ore combined by the lessee into a single unit for the determination of ore value. No lot shall exceed 1,000 tons of ore. Typically, 35 to 38 truckloads of ore compose one lot.

Low-grade ore—Ore that does not contain sufficient quantities of either U_3O_8 or V_2O_5 to be marketable at current market prices but may be marketable under future market conditions. Low-grades also can be blended with higher grades, subsequently making them more marketable.

LMS contractor NEPA specialist—The LMS contractor specialist who prepares Environmental Checklists and works with the DOE NEPA compliance officer to ensure that NEPA-related questions or issues are resolved.

Mine waste-rock—The host rock in which ore is found that does not contain sufficient quantities of either U_3O_8 or V_2O_5 to be marketable.

Plan—The document by which the lessee submits an exploration or mining proposal to DOE for review and approval.

Procedures—Documented, detailed instructions that specify or describe how, and in what sequential order, required technical and administrative activities are to be performed.

Production royalty—A percentage of the value of ore produced from a particular lease tract that is due and payable to DOE as specified in the respective lease agreement.

Protore—Ore that is not economical to mine at current market prices.

Pulp ore sample—A 5- to 6-ounce representative sample of a lot of ore that is cut mechanically from the crushed ore stream, which, when finally split and pulverized to -120 mesh, is individually packaged for laboratory analysis of the U₃O₈ and V₂O₅ content of the lot.

Realty officer—The DOE employee who is responsible for programmatic oversight of the ULP and who ensures that technical and administrative objectives and milestones are accomplished. He or she is authorized to enter into, administer, and terminate ULP contracts and make contractual determinations and findings on behalf of DOE.

Relinquish—The administrative process by which a lessee gives up the rights to a particular lease tract granted to it by the respective lease agreement.

Restore—The administrative process by which DOE returns lease tract lands (which are no longer needed) back to the public domain through BLM's revocation of Public Land Orders (all or part) or other administrative mechanisms.

Royalty calculation summary—The document (regardless of name [e.g., *Cotter Corporation (Lease Tract) Mine Royalty Calculation*]) provided to DOE that summarizes a lessee's royalty obligation associated with ores produced from a specific lease tract for a given month.

Sample plant—That portion of a mill or other receiving station where ores are accepted, weighed, sampled, and assayed.

Self-rescuer respirator—A personal safety device that provides emergency respiratory protection against carbon monoxide gas resulting from underground fires or explosions.

Site—A geographical area within the boundary of a lease tract.

Surface manager—The federal agency empowered to manage, and responsible for managing, the surface estate of lands within the public domain.

Surface owner—The private entity that owns or otherwise controls the surface rights to lands included within the boundaries of the DOE lease tracts.

ULP lead—The LMS contractor employee designated to administer the ULP and otherwise carry out the specific tasks assigned by the realty officer.

Umpire assay—An assay performed by a mutually-agreed-on third-party laboratory to settle the difference found in the results of assays made by the mill or other receiving station (purchaser) and seller of ore. If the umpire assay is between the assays of the two parties, it is final. If not, the assay nearer that of the umpire shall be final.

15.0 References

Colorado Mined Land Reclamation Board, 2010. *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations*, Department of Natural Resources, State of Colorado, Denver, Colorado, September.

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Memorandum of Understanding between the U.S. Bureau of Land Management and the U.S. Department of Energy, signed by B. Sharrow, Uncompahgre Field Office; S. Beverlin, Dolores Public Lands Office; C. Robertson, Grand Junction Field Office; and S. Schiesswohl, U.S. Department of Energy Office of Legacy Management, April 2010.

Memorandum of Understanding between the U.S. Department of Energy and the Colorado Division of Reclamation, Mining, and Safety, currently in review, to be signed by D. Berry, Colorado Division of Reclamation, Mining, and Safety, and L. Kilpatrick, U.S. Department of Energy Office of Legacy Management.

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