



DOE Uranium Leasing Program Annual Status and Activities Report for Calendar Year 2021

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U.S. DEPARTMENT OF
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Cover Photo: Reclamation of the Burro Mines Complex, Lease Tract C-SR-13, San Miguel County, Colorado.

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Abbreviations

BLM	U.S. Bureau of Land Management
CUR	Consolidated Uranium Inc.
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DRMS	Division of Reclamation, Mining, and Safety
DRRP	Dolores River Restoration Partnership
DRUM	Defense-Related Uranium Mines
EA	Environmental Assessment
EFR	Energy Fuels Resources Colorado Plateau LLC
EO	Executive Order
FONSI	Finding of No Significant Impact
FR	<i>Federal Register</i>
FY	fiscal year
GEMI	Gold Eagle Mining Inc.
GEU	Golden Eagle Uranium LLC
LM	Office of Legacy Management
LMS	Legacy Management Support
MAP	Mitigation Action Plan
NEPA	National Environmental Policy Act
NOA	Notice of Availability
REE	rare earth element
RILOR	reclamation in lieu of royalties
TREO	total rare earth oxide
TRFO	Tres Rios Field Office
ULP	Uranium Leasing Program
USC	<i>United States Code</i>
USGS	U.S. Geological Survey
V&V	verification and validation

Executive Summary

This report provides a detailed summary of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Uranium Leasing Program's (ULP's) activities from January 1 through December 31, 2021.

The DOE ULP administers 31 lease tracts, 29 of which are actively held under lease:

- Highbury Resources Inc. (Highbury) (a subsidiary of Anfield Energy Inc.), controls nine lease tracts: C-CM-25, C-JD-6, C-JD-7, C-JD-8, C-JD-9, C-LP-21, C-SM-18, C-SR-11, and C-SR-13A. Highbury continues to perform routine maintenance activities on these lease tracts, as necessary.
- Gold Eagle Mining Inc. (GEMI) controls three lease tracts: C-JD-5, C-SR-13, and C-SR-15. During 2021, GEMI maintained its mining operations on Lease Tracts C-JD-5 and C-SR-13 in standby status while performing routine maintenance activities and safeguarding assets, as necessary.
- Golden Eagle Uranium LLC (GEU) controls nine lease tracts: C-JD-5A, C-LP-22, C-LP-22A, C-LP-23, C-SR-10, C-SR-11A, C-SR-15A, C-SR-16, and C-WM-17. During 2021, GEU conducted noxious weed treatments on its lease tracts as there are no active mining operations thereon.
- Energy Fuels Resources Colorado Plateau LLC (EFR) controls seven lease tracts: C-AM-19, C-AM-19A, C-AM-20, C-CM-24, C-G-26, C-G-27, and C-SR-16A. EFR, through its wholly owned subsidiary Colorado Plateau Partners, also controls Lease Tract C-SR-12. During 2021, EFR conducted noxious weed treatments on its lease tracts as there are no active mining operations thereon. EFR agreed to sell the rights to its lease tracts to Consolidated Uranium Inc. (CUR) on July 15, 2021.

Lease Tracts C-JD-8A and C-SR-14 are inactive and will remain so indefinitely.

The president's budget (May 28, 2021) for fiscal year 2022 does not include additional funds for a uranium reserve program. The American Nuclear Infrastructure Act (S. 2373) was reintroduced in the U.S. Senate on July 15, 2021, albeit with key revisions. The new bill eliminates provisions requiring DOE to only purchase uranium recovered from facilities licensed by the U.S. Nuclear Regulatory Commission or equivalent Agreement State agencies.

According to Volume 86 *Federal Register* pages 62199–62200 (86 FR 62199–62200) from the U.S. Geological Survey, stated that the Energy Act of 2020 explicitly excluded fuel minerals from the definition of a critical mineral. Further, the Mining and Mineral Policy Act of 1970 formally defined uranium as a mineral fuel, therefore uranium was not evaluated for inclusion on the 2021 draft list of critical minerals.

In November 2019, several vanadium interests submitted a petition to the U.S. Department of Commerce (DOC) for relief under Section 232 of the Trade Expansion Act of 1962 (Title 19 *United States Code* Section 1862 [19 USC 1862])¹ from imports of vanadium products. In February 2021, DOC determined that unilaterally imposing tariffs on imported vanadium to raise

¹ 19 USC 1862. "Trade Expansion Act," *United States Code*.

the domestic price would largely impact the domestic steel and titanium industries and have significant negative impacts on the U.S. economy and national defense.

The reclamation of the Burro Mines Complex began on June 21 and concluded on October 26, 2021. Over the course of the project, 72,117 cubic yards of waste rock were removed from the Burro Tunnel mine and relocated into a former gravel pit on the southern end of Lease Tract C-SR-13. The volume of waste rock exceeded LM's objective by approximately 25% as more waste rock was relocated than originally planned.

In September 2021, ULP personnel performed formal inspections of the existing, permitted mining operations, which included Highbury's mines on Lease Tracts C-CM-25, C-JD-6, C-JD-7, C-JD-8, C-JD-9, C-LP-21, C-SM-18, C-SR-11, and C-SR-13A and GEMI's mines on Lease Tracts C-JD-5 and C-SR-13. No major issues were noted at any of the mine sites. Some minor issues were noted at one or more of the locations, including the presence of noxious weeds, minor erosion, repeated vandalism, and a need for better housekeeping.

Throughout the 2021 field season, ULP personnel inspected reclaimed mine-related locations and fenced multiple subsidence features on various lease tracts to mitigate physical safety hazards. Many of these hazards will be addressed with the newly approved reclamation in lieu of royalties process in the near future.

The fair market value of lease tract ores per dry ton with average grades of 0.20% uranium and 1.20% vanadium, as calculated for production royalty purposes, began 2021 at \$217 per ton. The value climbed steadily throughout the year, culminating at \$357 per ton before settling to \$326 per ton at year's end.

1.0 Overview

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Uranium Leasing Program (ULP) administers 31 lease tracts (Table 1 and Figure 1), 29 of which are actively held under lease by four lessees. Of the 29 lease tracts, only 11 are permitted with the Colorado Division of Reclamation, Mining, and Safety (DRMS). None of the 29 lease tracts had active mining operations in 2021. Two of the 31 lease tracts are not leased and are considered inactive. This report provides a detailed summary of ULP activities from January 1 through December 31, 2021.

Table 1. DOE Uranium Lease Tracts and Lessees

Lease Tract	Lessee
C-JD-5	Gold Eagle Mining Inc.
C-JD-5A	Golden Eagle Uranium LLC
C-JD-6	Highbury Resources Inc.
C-JD-7	Highbury Resources Inc.
C-JD-8	Highbury Resources Inc.
C-JD-8A	Inactive, not leased
C-JD-9	Highbury Resources Inc.
C-SR-10	Golden Eagle Uranium LLC
C-SR-11	Highbury Resources Inc.
C-SR-11A	Golden Eagle Uranium LLC
C-SR-12	Colorado Plateau Partners
C-SR-13	Gold Eagle Mining Inc.
C-SR-13A	Highbury Resources Inc.
C-SR-14	Inactive, not leased
C-SR-15	Gold Eagle Mining Inc.
C-SR-15A	Golden Eagle Uranium LLC
C-SR-16	Golden Eagle Uranium LLC
C-SR-16A	EFR Colorado Plateau LLC
C-WM-17	Golden Eagle Uranium LLC
C-SM-18	Highbury Resources Inc.
C-AM-19	EFR Colorado Plateau LLC
C-AM-19A	EFR Colorado Plateau LLC
C-AM-20	EFR Colorado Plateau LLC
C-LP-21	Highbury Resources Inc.
C-LP-22	Golden Eagle Uranium LLC
C-LP-22A	Golden Eagle Uranium LLC
C-LP-23	Golden Eagle Uranium LLC
C-CM-24	EFR Colorado Plateau LLC
C-CM-25	Highbury Resources Inc.
C-G-26	EFR Colorado Plateau LLC
C-G-27	EFR Colorado Plateau LLC

Abbreviation: EFR = Energy Fuels Resources

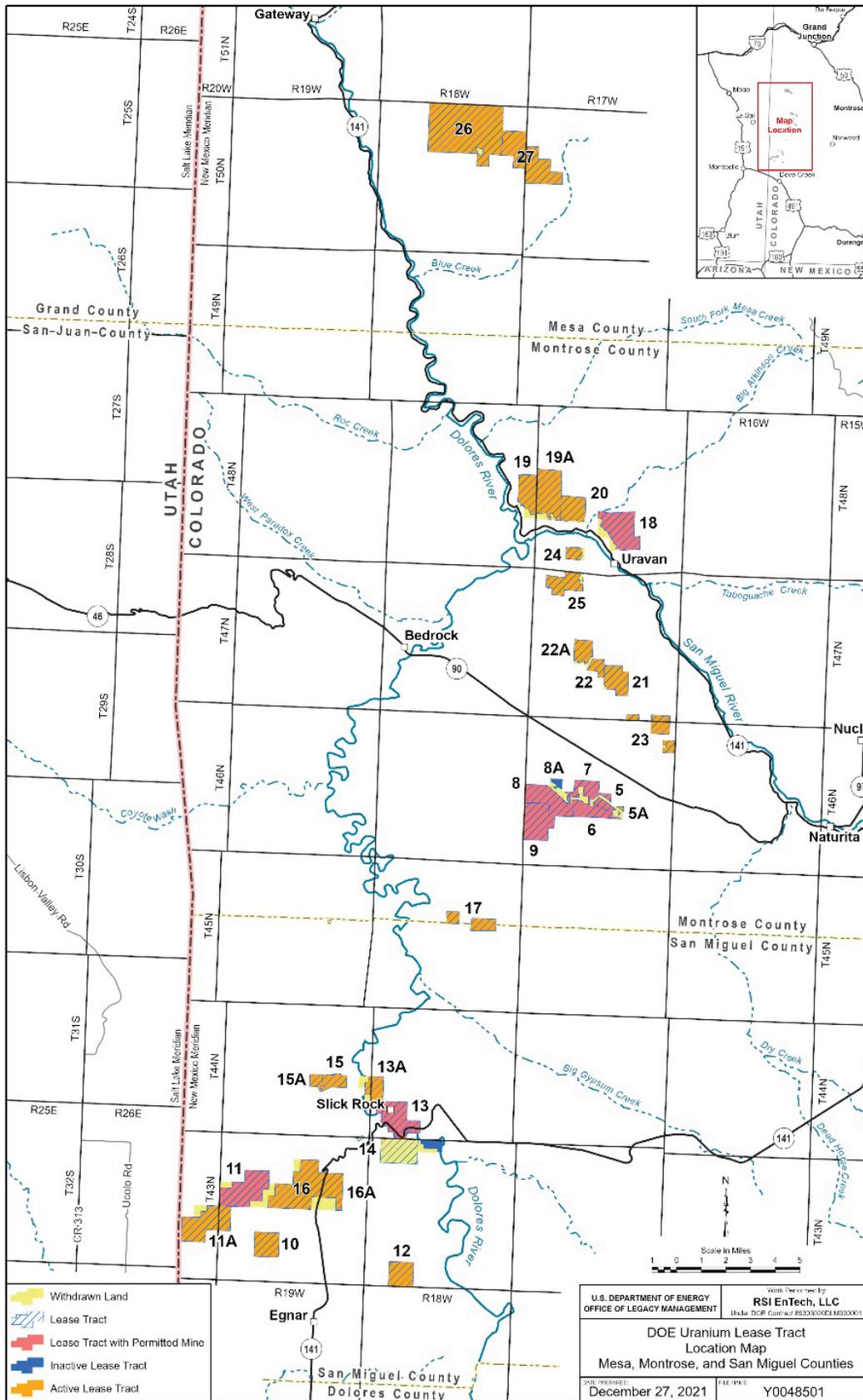


Figure 1. Location of ULP Lease Tracts in Southwestern Colorado

2.0 Administrative Operations

The following subsections summarize ULP's primary administrative activities during 2021. ULP undertook a major administrative action in 2021 with the reclamation of the Burro Mines Complex on Lease Tract C-SR-13. The reclamation of the Burro Mines Complex and other administrative operations are described below.

2.1 Reclamation of the Burro Mines Complex

The Burro Mines Complex is a historical mining complex in Burro Canyon near the former town of Slick Rock, Colorado, and within ULP Lease Tract C-SR-13. The Burro Mines Complex comprises four mines: the Burro Tunnel, Burro No. 3, Burro No. 5, and Burro No. 7 mines. The Burro No. 7 mine has previously been reclaimed and was not part of this reclamation project. The Burro Tunnel portion of this complex is immediately adjacent to the Dolores River and Burro Canyon Creek. Reclamation activities began in June and were completed in October, as described in detail below.

2.1.1 Background

Following a series of storm events that inundated the Slick Rock, Colorado, area during the previous decade and repeatedly swept mine waste rock material from the Burro Tunnel mine site (Figure 2) into the immediately adjacent Dolores River, ULP personnel developed a proposal to reclaim the site in March 2016. Efforts related to this project stalled during a court-induced injunction, following a ruling by the Judge that found DOE's ULP PEA deficient and in violation of NEPA and the Endangered Species Act. The court injunction lasted from October 2011 to March 2019 and prohibited DOE from conducting any activity on the ULP including review and/or approval of any plans submitted by the lessees. Efforts to plan the National Environmental Policy Act (NEPA) portion of this project began in 2020, and the Environmental Assessment (EA) for the preferred alternative to relocate waste rock from the Burro Tunnel mine to a former gravel pit was completed in early 2021. LM issued a Finding of No Significant Impact (FONSI) on March 23, 2021, for the preferred alternative.

Because the existing waste rock piles at the Burro Tunnel, Burro No. 3, and Burro No. 5 mines are considered "pre-law," they do not fall under the jurisdiction of the *Uranium Leasing Program Mitigation Action Plan for the Final Uranium Leasing Program Programmatic Environmental Impact Statement DOE/PEIS-0472* (DOE 2014b) (Mitigation Action Plan [MAP]). Likewise, due to the age of these rock piles, their reclamation was not the responsibility of the current lessee for Lease Tract C-SR-13.



Figure 2. Burro Tunnel Mine, Lease Tract C-SR-13, Slick Rock, Colorado, Prior to Reclamation

2.1.2 2021 Activities

Most early planning activities in support of the reclamation of the Burro Mines Complex occurred in 2020, with the final engineering design completed in March 2021. Also, in March 2021, preparations began for solicitation of subcontractor bids with a request for proposal issued by the Legacy Management Support (LMS) contractor at the time: Navarro Research and Engineering, Inc. Effective April 1, 2021, LM changed LMS contractors and contracted with RSI EnTech, LLC (RSI). Subcontractor bids were received in mid-April and evaluated by RSI. After the selection process was complete, the project was awarded to Reams Construction Co. of Naturita, Colorado, in May. Mobilization occurred in June, and reclamation work at the Burro Mines Complex began June 21, 2021.

Initial work began with construction of a haul road necessary to transport waste rock from the Burro Tunnel mine across Burro Canyon and onto an existing county road leading to the relocation site. The relocation site, also on Lease Tract C-SR-13, was a former gravel pit. Surface soils at the relocation site were stripped and stockpiled in preparation for waste rock. The majority of waste rock was relocated using wheel-tractor scrapers. Additional equipment included excavators, haul trucks, water trucks, backhoes, blades, compactors, and pickup trucks.

In addition to the restructuring of the toe of the Burro Tunnel mine waste rock pile, other changes were implemented to protect against sediment runoff from entering the Dolores River. These improvements included armoring Burro Canyon Creek, restoring existing drainages, and constructing new drainages and sedimentation basins throughout the mine complex.

Over the course of the project, 72,117 cubic yards of waste rock were relocated from the Burro Tunnel mine (Figure 3) to a nearby relocation site. This exceeded LM's objective by approximately 25% as more waste rock was relocated than originally planned. Despite the additional waste rock, the project was conducted safely with no injuries and was completed ahead of schedule on October 26, meeting the winter rangeland requirements protecting a local herd of desert bighorn sheep.



Figure 3. Burro Tunnel Mine, Lease Tract C-SR-13, Slick Rock, Colorado, After Reclamation

2.1.2.1 NEPA

NEPA compliance for the reclamation of the Burro Mines Complex began in 2020 and concluded in early 2021. Both the U.S. Bureau of Land Management (BLM) Tres Rios Field Office (TRFO) and DRMS participated as cooperating agencies in the EA. A preliminary draft EA was prepared by Argonne National Laboratory and received by LM and the LMS contractor for internal review in January 2020. The draft EA was issued in May 2020, and later that year public notices were published in local newspapers to solicit input on the draft EA during the 30-day public comment period, which lasted from August 7 through September 8, 2020. The final EA was issued in early 2021, and a public availability period occurred between February 17 and March 18, 2021. LM issued a FONSI on March 23, 2021.

2.1.2.2 Special Use Permit

Planning for a special use permit from San Miguel County began in early 2020, concurrently with the NEPA process. A special use permit was initially issued to LM on November 18, 2020;

however, the San Miguel County Planning Department was notified on November 23, 2020, of likely changes to the engineering design following the ongoing Section 106 of the National Historic Preservation Act (Title 54 *United States Code* Section 300101 et seq. [54 USC 300101 et seq.]) consultation with the State Historic Preservation Office. The LMS contractor submitted draft documentation to the planning director on November 24, 2020. Upon review of the information provided, the planning director replied that, due to the nature of the changes, it would be necessary for LM to present the changes to the Planning Commission at its next meeting, which occurred January 13, 2021; the changes received unanimous approval. A subsequent resolution was issued to LM the same day as the meeting, superseding the prior resolution.

2.2 Programmatic Agreement (PA) Review

In 2014, LM and other parties entered into a *Programmatic Agreement Among the U.S. Department of Energy-Office of Legacy Management, the U.S. Department of the Interior -Bureau of Land Management-Colorado State Office, the Colorado State Historic Preservation Office, and the Pueblo of Zuni Regarding the Uranium Leasing Program Within Mesa, Montrose, and San Miguel Counties, Colorado* (DOE 2014a) to comply with Section 106 of the National Historic Preservation Act and filed with the Advisory Council on Historic Preservation. This PA outlines actions LM and consulting parties will take to evaluate the potential impacts of activities on historic or cultural properties. The PA requires LM to:

- Conduct annual briefings (at a minimum) with consulting parties to discuss proposed ULP activities.
- Receive input from parties.
- Summarize prior activities.

The PA was due for a biennial review by signatory parties in 2021. LM determined no changes were necessary and requested that all signatories review the document and confirm that no revisions to the original PA were warranted. These letters to signatory and consulting parties were issued in November and December 2021.

2.3 MAP

In accordance with the MAP (DOE 2014b), LM is required to submit an annual summary report of mitigation activities completed by ULP lessees. On February 23, 2021, the MAP activity summary report for 2020 was transmitted to the DOE Headquarters Office of NEPA Policy and Compliance. The document recorded that no activity had occurred during 2020. Likewise, no activities that require reporting occurred during 2021. LM will issue a letter report stating this in early 2022.

2.4 Other Administrative Activities

2.4.1 Section 232 Investigation and Other Legislation

The president's budget (May 28, 2021) for fiscal year (FY) 2022 does not include additional funds for a uranium reserve program. The FY 2021 budget allocated \$75 million to the National Nuclear Security Administration to develop and implement a uranium reserve program, but no

additional funds were requested for the uranium reserve in FY 2022 (Volume 86 *Federal Register* pages 50878–50879 [86 FR 50878–50879]). The American Nuclear Infrastructure Act (S. 2373) was reintroduced in the U.S. Senate on July 15, 2021, with key revisions. The new bill eliminated provisions requiring DOE to only purchase uranium recovered from facilities licensed by the U.S. Nuclear Regulatory Commission or equivalent Agreement State agencies. The bill also eliminated the establishment of a uranium reserve.

Executive Order (EO) 13953

Issued on September 30, 2020, this Executive Order uses and builds on the framework of the Defense Production Act (50 USC 4501–4568) to bolster the domestic mining industry. The Executive Order seeks to clarify which projects supporting domestic production of the U.S. Geological Survey (USGS) list of critical minerals are eligible for a loan program. The Executive Order also states that the U.S. Department of the Interior and DOE should encourage the development of abandoned mine lands for the recovery of critical minerals.

According to 86 FR 62199–62200 from USGS, “The Energy Act of 2020 explicitly excluded fuel minerals from the definition of a critical mineral and the Mining and Mineral Policy Act of 1970 formally defined uranium as a mineral fuel, so uranium was not evaluated for inclusion on the 2021 draft list of critical minerals.”

Vanadium Section 232

In November 2019, U.S. Vanadium LLC and AMG Vanadium LLC jointly submitted the *Petition for Relief Under Section 232* to the U.S. Department of Commerce (DOC) for relief under Section 232 of the Trade Expansion Act (as amended) (19 USC 1862) from imports of vanadium products that threaten national security. On May 28, 2020, DOC formally accepted the petition, initiated an investigation into the effects of vanadium imports on national security, and invited interested parties to submit written comments, data, analysis, or other information pertinent to the investigation.

On February 22, 2021, the DOC report was made public, and it contained seven major findings: (1) There is only one U.S. producer of vanadium; (2) production is centered in four countries; (3) vanadium is a critical metal; (4) vanadium is required for national defense and critical infrastructure; (5) the U.S. relies on imports of vanadium; (6) U.S. production is well below domestic demand; and (7) increased global capacity will further impact the long-term viability of U.S. vanadium production. Despite these findings, DOC determined that unilaterally imposing tariffs on imported vanadium to raise the domestic price would largely impact domestic steel and titanium industries and have significant negative impacts on the U.S. economy and national defense (DOC 2021).

2.4.2 Program Outreach

Major highlights of ULP outreach activities (by month) are outlined below:

- **February:** The ULP field crew submitted photos for a social media posting about desert bighorn sheep at the Georgetto reclaimed mine site near Slick Rock, Colorado. A Notice of Availability (NOA) for the reclamation of the Burro Mines Complex EA was published as a public notice to the following newspapers: *San Miguel Basin Forum*, *Montrose Daily Press*,

Telluride Daily Planet, *The Journal* (Cortez), and *The Durango Herald*. The EA NOA was posted to the ULP website. The ULP Playbook was also updated.

- **March:** LM published an article and social media post on the reclamation of the Burro Mines Complex, featuring collaboration and approvals to begin work. The FONSI and EA were posted to the ULP website.
- **April:** An article and social media posts on the four ULP leaseholders were published to the LM News Archive webpage. LM also published an article and social media posts related to the beginning steps for the Gold Eagle Mining Inc. (GEMI) reclamation of the Burro Mines Complex.
- **May:** The “Program History” section of the ULP website was updated. The reclamation of the Burro Mines Complex construction notice to begin reclamation was drafted and sent to collaborating partners.
- **June:** A handout was created outlining the reclamation of the Burro Mines Complex for field crews to hand out if approached by the public.
- **July:** Longtime LMS staff member Ed Cotter retired after 44 years of service to LM. Most of his tenure was spent supporting ULP. An article and a social media post about Ed’s retirement were published to the LM News Archive webpage. LM and LMS staff toured the reclamation of the Burro Mines Complex and surrounding mines. A subsequent social media post highlighted the tour and progress of the reclamation of the Burro Mines Complex.
- **August:** LM published a social media post with an update on the progress of the reclamation of the Burro Mines Complex.
- **December:** LM published an article and social media posts on the reclamation of the Burro Mines Complex and the Dolores River Weed Mitigation Collaboration with the Dolores River Restoration Partnership (DRRP). The team also began work on a video about the reclamation of the Burro Mines Complex.

2.4.3 Program Coordination with BLM

BLM representatives from TRFO, the Grand Junction Field Office, and the Uncompahgre Field Office participated in annual lease tract inspections in September 2021.

2.4.4 Program Coordination with DRMS

In June 2020, Cotter Corporation (Cotter) informed DRMS of the assignment of its leases to Highbury Resources Inc. (Highbury). As part of the process, Anfield Energy Inc. (Anfield), the parent company of Highbury, was required to post new reclamation bonds with DOE and coordinate with DRMS to transfer Cotter’s mining permits into its name. The process of transferring the mining permits and the issuance and return of bonds was completed on September 14, 2021.

In November and December, ULP personnel joined DRMS and Highbury representatives during the annual field inspection of Highbury’s permitted mining operations. These inspections were also conducted as a procedural follow-up to a formal request to relinquish mining permits for the mines on Lease Tracts C-SR-13A, C-CM-25, and C-LP-21. These sites have been in final reclamation for several years, and this visit was a procedural inspection as part of the process for

a formal relinquishment of the permit. No issues were identified and barring any opposition from the public during the comment period, the permit should be formally closed out on or before January 31, 2022.

In December, ULP personnel joined DRMS and GEMI representatives during the annual field inspections of GEMI's permitted mining operations in both Montrose and San Miguel Counties. Members of the inspection team focused on clarifying required reclamation activities on the lease tracts. It is anticipated that GEMI will submit technical revisions to DRMS before finalizing the revision of Table 1 of the sites' reclamation plans to reflect current conditions.

2.4.5 Coordination with the Defense-Related Uranium Mines (DRUM) Program

DRUM Program field teams started verification and validation (V&V) activities at abandoned uranium mines for calendar year 2021 on March 22. V&V activities consists of inventorying mine features, environmental sampling, and radiological mapping. In the 2021 field season, V&V activities were completed at 60 DRUM Program mines on 14 ULP lease tracts: C-SR-10, C-SR-16, C-SR-16A, C-SR-13, C-SR-13A, C-SR-11, C-SR-11A, C-SR-12, C-SR-14, C-SR-15, C-SR-15A, C-AM-19, C-AM-19A, and C-WM-17. ULP personnel provided inventory data and institutional knowledge about the tracts visited by DRUM personnel. The DRUM field teams located and reported several physical hazards that ULP personnel took temporary mitigation methods to safeguard. These features were added to a list and will continue to be monitored and eventually addressed by the reclamation in lieu of royalties (RILOR) process in the future.

2.4.6 Lease Agreement Execution

As the current 10-year lease agreements were executed in 2020, no additional leases were executed during 2021. The sale of EFR's lease tracts to CUR was finalized on October 27, 2021. LM's process to qualify the new owner and subsequently novate the leases continued through 2021.

2.4.7 ULP Mineral Leasing Procedures Manual

The *Uranium Leasing Program Mineral Leasing Procedures Manual* (LMS/PRO/S04344) is the program's primary process document and outlines the procedures for day-to-day operations of the ULP. The manual addresses how LM, the LMS contractor, and partner agencies will work as an efficient and cohesive team to execute the ULP. The draft update was delivered to LM on December 16, 2021, and the finalized version is expected to be issued in the first quarter of 2022.

2.5 Market Prices

The fair market value of lease tract ore per dry ton began 2021 at \$217 per ton with average grades of 0.20% uranium and 1.20% vanadium ores, as calculated for production royalty purposes. The value climbed steadily throughout the year, culminating at \$357 per ton before settling to \$326 per ton at year's end.

3.0 Field Operations

3.1 Lessee Operations

ULP personnel conducted cursory inspections at least monthly when weather permitted access to the lease tracts. ULP personnel were aided by DRUM personnel, who identified hazards at historic mining operations as part of their V&V activities. Due to a wetter than average winter, several new subsidences occurred on the lease tracts, primarily on legacy mine sites. ULP personnel temporarily mitigated the features by placing brush over the hazards, closing them by hand with backfill, or installing safety fencing around them to prevent entrapment of humans, livestock, and wildlife. These newly identified hazards were added to the RILOR list that ULP maintains and will be safeguarded or reclaimed in the near future.

3.1.1 Cotter and Highbury

During 2021, Cotter continued to transition its employees, mining infrastructure, and DRMS permits to Highbury, a wholly owned subsidiary of Anfield. Following approval of the October 26, 2020, *Request for Transfer of Mineral Permit and Succession of Operators* by DRMS between January 27 and June 29, 2021, and the posting of reclamation bonds from Highbury, DOE relinquished the bonds previously held from Cotter corporation on September 14, 2021.

Highbury controls nine lease tracts: C-CM-25, C-JD-6, C-JD-7, C-JD-8, C-JD-9, C-LP-21, C-SM-18, C-SR-11, and C-SR-13A. During 2021, Highbury personnel performed routine maintenance activities at various mining operations to protect the company's financial investments and keep the sites secured in a physically safe and environmentally sound condition. These routine activities included controlling noxious weed infestations and inspecting site features and facilities (e.g., mine portals, ventilation systems, buildings, stormwater control structures) to determine if maintenance actions were required. Personnel checked the lysimeters on Lease Tracts C-JD-6, C-JD-8, C-JD-9, and C-SM-18 quarterly to determine whether water was percolating through the waste rock piles. No measurable water was detected at these lysimeters, and minimal water has been detected to date. Highbury personnel also sampled the groundwater well downgradient of Lease Tract C-JD-9 each quarter and sent the samples to a lab for digestive metals analysis. The Duggan Adit mine portal on Lease Tract C-JD-6 was repeatedly broken into throughout 2021, and the lessee took progressively greater measures to secure the entrance.

In February 2020, Cotter advised DRMS that it was voluntarily placing its permitted mines into reclamation status. On October 19, 2021, DRMS requested that Highbury submit a schedule for final reclamation. Highbury responded to this request with a schedule on November 3, 2021, outlining reclamation activities that will begin in spring 2022 and be completed by fall 2024.

On November 30, 2021, Highbury formally requested relinquishment of its C-SR-13A, C-LP-21, and C-CM-25 DRMS mining permits. These mines have been in final reclamation status for several years and were inspected in the fall as part of the process for formal relinquishment. No issues were identified, and barring any opposition during the public comment period, the permit will be formally closed out on or before January 31, 2022.

3.1.2 GEMI

GEMI controls three lease tracts: C-JD-5, C-SR-13, and C-SR-15. During 2021, GEMI personnel performed routine maintenance activities to protect the company's financial investments and keep the sites secured in a physically safe and environmentally sound manner. Routine activities included the removal of debris and inspections of site features and facilities (e.g., mine portals, ventilation systems, buildings, stormwater control structures) to determine if further actions were required. GEMI personnel also conducted noxious weed control treatments throughout the lease tracts.

See Section 2.1 for specific information related to reclamation of the Burro Mines Complex on Lease Tract C-SR-13.

On January 5, 2021, GEMI requested an extension of royalty payments, citing loss of investors. On January 15, 2021, DOE granted GEMI an additional 6 months, stating that the full royalty amount plus interest would be due July 6, 2021. On June 20, 2021, GEMI requested another 6-month extension on royalty payments. DOE granted this extension on July 2, 2021, stating that full royalties plus interest must be paid by January 5, 2022. At the time of publication, no payments have been received by GEMI.

On June 1, 2020, LM issued a letter in response to GEMI's previously submitted reclamation plans. During a joint field inspection with LM, the LMS contractor, and DRMS in July 2020, it was determined that GEMI's reclamation plans were deficient and would need revision to better reflect current ground conditions. No additional information has been submitted to LM since this meeting, although in December 2020, GEMI requested an onsite meeting with DRMS to determine the need for a technical revision to the approved mining plans on Lease Tracts C-JD-5 and C-SR-13.

3.1.3 Golden Eagle Uranium, LLC (GEU)

GEU controls nine lease tracts: C-JD-5A, C-LP-22, C-LP-22A, C-LP-23, C-SR-10, C-SR-11A, C-SR-15A, C-SR-16, and C-WM-17. There are no active mining operations on any of them. During 2021, GEU conducted noxious weed control treatments on several of the lease tracts.

On January 5, 2021, GEU requested an extension of royalty payments, citing loss of investors. On January 15, 2021, DOE granted GEU an additional 6 months, stating that the full royalty amount plus interest would be due July 6, 2021. On June 20, 2021, GEU requested another 6-month extension on royalty payments. DOE granted this extension on July 2, 2021, stating that full royalties plus interest must be paid by January 5, 2022. At the time of publication, no payments have been received by GEU.

3.1.4 EFR

EFR, a wholly owned subsidiary of Energy Fuels Resources Inc., controls eight lease tracts, seven of which (C-AM-19, C-AM-19A, C-AM-20, C-CM-24, C-G-26, C-G-27, and C-SR-16A) are held directly, and one of which (C-SR-12) is held by EFR's subsidiary, Colorado Plateau Partners. EFR does not maintain mining operations on any of its lease tracts. During 2021, EFR continued to treat noxious weed infestations on its lease tracts.

On April 26, 2021, EFR representatives notified ULP personnel that they were negotiating the sale of all EFR lease tracts to CUR. The official press release of EFR announcing the sale of its lease tracts to CUR was made public on July 15, 2021, and the deal closed on October 27, 2021. On July 28, 2021, EFR formally requested the transfer of its leases to CUR. The process is ongoing. EFR will continue as the operator of the lease tracts for at least the next year. CUR plans to take a closer look at bringing the lease tracts into production and expects to submit exploration plans in the near future.

3.2 Milling Operations

During 2021, the White Mesa Mill (owned and operated by Energy Fuels Inc.) focused on processing a phosphate mineral called “monazite sand” for the recovery of rare earth elements (REEs) and uranium. Monazite sand is recovered and concentrated as a byproduct of heavy mineral sand mining that primarily targets titanium and zirconium minerals. Beginning in early 2021, the White Mesa Mill began receiving and processing monazite sand from heavy mineral sand operations in the southeast United States. The White Mesa Mill is currently processing monazite sand containing roughly 50%–55% total rare earth oxides (TREOs), plus about 0.30% uranium and 2% thorium. The White Mesa Mill is able to process and produce REEs from monazite effectively because of its ability to remove or recover (or both) the uranium and other radionuclides and produce a high-purity REE carbonate ready for separation. The mill is also evaluating the potential to complete REE separation in-house and to recover thorium for pharmaceutical and advanced nuclear applications.

Currently, the White Mesa Mill is selling the REE carbonate to a separation facility in Estonia. In the next 3–4 years, the White Mesa Mill expects to increase its supply of monazite sand and license and construct additional solvent extraction infrastructure that will allow it to produce separated REE oxides. Energy Fuels Inc. is also evaluating the potential to perform REE metal-making and alloying at the mill (or nearby in Utah) in the coming years, thereby fully integrating a domestic REE supply chain, while also producing uranium and possibly thorium.

Despite the recent focus on REE, the mill will retain the large-scale capability to process conventional uranium and vanadium ore.

3.3 Physical Safety Hazards and Environmental Issues

3.3.1 Hazards

Following a wetter than average winter, several new physical safety hazards were identified on lease tracts in 2021. These new hazards primarily consisted of subsidence-related features and will continue to be monitored.

Over the last several years, ULP personnel have identified multiple physical safety hazards on several lease tracts. All have been temporarily safeguarded by hand with backfill or by installing fencing to preclude human entry and wildlife or livestock entrapment. A list of action items has been compiled, and the respective ULP lessees will likely be asked to mitigate these hazards through the RILOR procedure once normal, mining-related activities resume.

3.3.2 Noxious Weeds

ULP lessees are responsible for controlling noxious weeds on their lease tracts in accordance with state law. All lessees conducted treatments in 2021 and completed pesticide application forms to document their herbicide use. LMS licensed pesticide applicators assisted lessees on several occasions to treat large or hard to access infestations. By partnering with lessees, LMS licensed applicators can share knowledge about weed identification, effective herbicides, and treatment techniques, which benefits both parties. In 2021, LMS applicators partnered with Montrose County and lessees to control infestations on Lease Tracts C-AM-19, C-AM-19A, C-AM-20, and C-LP-22A. LMS applicators partnered with lessees to control infestations on Lease Tracts C-JD-5, C-JD-6, C-JD-7, C-SR-10, C-SR-15, C-SR-15A, C-SR-16, and C-SR-16A.

Since 2011, LM has coordinated with DRRP, a group of public and private entities whose main purpose is to treat and remove tamarisk and other noxious weeds along the Dolores River corridor and restore the area with native species. LM has been a signing partner of the DRRP Memorandum of Understanding since 2015 and, on January 16, 2021, renewed its partnership by signing an updated Memorandum of Understanding with 19 other partners (DOE 2021b).

Approximately 4 miles of the Dolores River flow through Lease Tracts C-SR-13 and C-SR-14. ULP ecologists have overseen and monitored the success of these weed control and restoration efforts annually for the last 10 years and have noted that noxious weed cover has been significantly reduced and native species are reestablishing in many of the treated areas. In 2021, approximately 10 acres of noxious weeds and woody species were treated along the Dolores River corridor—with assistance from Southwest Conservation Corps—on Lease Tracts C-SR-13 and C-SR-14.

LMS ecologists continued annual revegetation success monitoring of the corridor in August 2021. The report summarizing results will be submitted to LM in early 2022. Monitoring results from the August 2020 monitoring (DOE 2021a) were submitted to LM on February 17, 2021.

4.0 References

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50 USC 4501–4568. “Defense Production Act,” *United States Code*.

54 USC 300101 et seq. “National Historic Preservation Act,” *United States Code*.

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86 FR 62199–62200. U.S. Geological Survey, “2021 Draft List of Critical Minerals,” *Federal Register*, November 9, 2021.

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