

April 12, 2001

William J. Sinclair, Director  
Division of Radiation Control  
Department of Environmental Quality  
168 North 1950 West  
P.O. Box 144850  
Salt Lake City, UT 84114-4850

SUBJECT: CONSULTATION REQUEST ON THE ENVIRONMENTAL ASSESSMENT FOR  
THE RECEIPT AND PROCESSING OF MATERIALS FROM THE MOLYCORP  
FACILITY LOCATED IN MOUNTAIN PASS, CALIFORNIA, FOR THE WHITE  
MESA URANIUM MILL

Dear Mr. Sinclair:

The U.S. Nuclear Regulatory Commission (NRC) staff is conducting a review of International Uranium (USA) Corporation's (IUSA's) amendment request, dated December 19, 2000, and supplemented by letters dated January 29, 2001, February 2, 2001, and March 20, 2001, to receive and process materials from the Molycorp facility located in Mountain Pass, California.

The NRC staff determined that an environmental assessment (EA) was necessary to document potential environmental impacts to this proposed action. NRC is submitting the enclosed preliminary draft NRC EA as part of the consultation process of the National Environmental Protection Act. Please review this document and provide any comments within 30 days of receipt of this letter. If we have not heard from your office in that time period, the NRC will assume that the Utah Department of Environmental Quality has no comments and NRC will finalize the EA.

If you have any questions concerning this letter, please contact the NRC Project Manager for the White Mesa site, William von Till, at (301) 415-6251.

Sincerely,

**/RA/**

Lidia Roche, Acting Chief  
Fuel Cycle Licensing Branch  
Division of Fuel Cycle Safety  
And Safeguards, NMSS

Enclosures: Draft Environmental Assessment  
Docket No: 40-8681  
License No: SUA-1358

cc: M. Rehman, IUSA

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DOCUMENT NAME: G:\EPAB\RWV\IUC-EA-molycorp.wpd

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DATE	4/04/01	4/06/01	4/09/01	4/11/01	4/12/01

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DRAFT ENVIRONMENTAL ASSESSMENT  
FOR  
INTERNATIONAL URANIUM (USA) CORPORATION'S URANIUM MILL SITE  
WHITE MESA, SAN JUAN COUNTY, UTAH

IN CONSIDERATION OF AN AMENDMENT TO  
SOURCE MATERIAL LICENSE SUA-1358 FOR THE  
RECEIPT AND PROCESSING OF THE  
MOLYCORP ALTERNATE FEED

PREPARED BY

THE U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE SAFETY AND SAFEGUARDS  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

**DRAFT ENVIRONMENTAL ASSESSMENT  
FOR THE  
MOLYCORP ALTERNATE FEED REQUEST  
INTERNATIONAL URANIUM CORPORATION'S URANIUM MILL SITE  
WHITE MESA, SAN JUAN COUNTY**

**1.0 INTRODUCTION**

**1.1 Background and Need for the Proposed Action**

This action is to evaluate the potential environmental impacts of the proposal for the White Mesa Uranium and Tailings Mill to receive and process material from the Molycorp facility located in Mountain Pass, California. The mill site is located in San Juan County, Utah approximately 8 kilometers (km) (5 miles) south of Blanding, Utah. International Uranium (USA) Corporation (IUSA) submitted a license amendment application dated December 19, 2000, and supplemental information in letters dated January 29, 2001, February 2, 2001, and March 20, 2001, to receive and process uranium-bearing materials from the Molycorp Lanthanide Division site, located in Mountain Pass, California. These materials would be used as "alternate feed material", materials that have similar chemical, physical, and radiological composition to conventional mill tailings. A separate Technical Evaluation Report (TER) will be completed by the NRC using the formal guidance, "Interim Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores" provided in the NRC Regulatory Issue Summary 2000-23 that was mailed to uranium recovery licensees on November 30, 2000.

The IUSA site is licensed by the U.S. Nuclear Regulatory Commission (NRC) under Materials License SUA-1358 to possess byproduct material in the form of uranium waste tailings and other uranium byproduct waste generated by the licensee's milling operations, as well as other source material from multiple locations.

**1.2 Previous National Environmental Policy Act (NEPA) Actions**

A Final Environmental Statement (FES) was prepared by the NRC for the license application in May 1979, an Environmental Assessment (EA) was prepared by NRC in September 1985 for license renewal, an EA was prepared by NRC in February 1997 for license renewal, and an EA was prepared for the reclamation plan in February 2000.

**1.3 Proposed Action**

The proposed action is for the White Mesa mill to receive materials from the Molycorp Facility in Mountain Pass, California and process the material for its uranium content. The material may be temporarily staged until a sufficient quantity is received to run the mill. Waste from the processing will be disposed in the mill's tailing cells. Reclamation will be in accordance with the approved reclamation plan (NRC, 2000). Environmental impacts dealing with the milling operation have already been addressed under prior NEPA actions.

**1.4 Molycorp Site and Material Information**

The Molycorp site is located in Mountain Pass, California. The material from Molycorp consists of a lead sulfide sludge containing uranium stored in ponds. The material is a result of extraction of lathanides and other rare earth minerals. Molycorp estimates the amount of material for this amendment request to be up to 17,750 tons. Molycorp has estimated that the

material has an average uranium content of approximately 0.15 percent.

Since 1951, Molycorp has operated a surface mining and milling operation for the recovery and chemical separation of lanthanides and other rare earth metals from bastnasite ores. From 1965 through 1984 Molycorp constructed and operated three lead sulfide ponds for the evaporation of lead sulfides from the clarifier/thickener operation. The lead sulfide sludge contains uranium, which is also precipitated in the thickener. The ponds were taken out of service in 1984 and in 1997 Molycorp drafted a Closure Plan for the decommissioning of the ponds which required the removal and off-site disposal or recovery of the lead sulfide sludge contained in the ponds. This amendment request seeks authorization to process the lead sulfide sludge for its uranium content.

### **1.5 Review Scope**

In accordance with 10 CFR Part 51, this EA serves to: (1) present information and analysis for determining whether to issue a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS); (2) fulfill the NRC's compliance with NEPA when no EIS is necessary; and (3) facilitate preparation of an EIS when one is necessary. Should the NRC issue a finding of no significant impact, no EIS would be prepared and the license amendment would be granted.

### **2.0 SITE CHARACTERISTICS**

The area surrounding the facility is in an arid climate with an annual precipitation of 30 centimeters (cm) (12 inches) and a mean temperature of 9 degrees centigrade (50 degrees Fahrenheit). Runoff in the project area is directed by the general surface topography either westward into Westward Creek, eastward into Corral Creek, or to the south into an unnamed branch of Cottonwood Wash. The San Juan River, a major tributary to the Colorado River, is located approximately 29 km (18 miles) south of the site.

The population density of San Juan County is approximately 0.6 persons per square kilometer (1.6 persons per square mile). The town of Blanding is the largest population center near the facility with a population of 3162. Approximately 5.6 km (3.5 miles) southeast of the site is the White Mesa Reservation, a community of approximately 320 Ute Mountain Indians. The nearest resident to the mill is located approximately 5 km (3 miles) to the northeast of the mill, which is in the prevailing wind direction.

Approximately 60% of San Juan County is federally-owned land administered by the U.S. Bureau of Land Management (BLM), the U.S. National Park Service (NPS), and the U.S. Forest Service. Primary land uses include livestock grazing, wildlife range, recreation, and exploration for minerals, oil, and gas. A quarter of the county is Indian land owned by either the Navajo Nation or the Ute Tribe. The land within 8 km (5 miles) of the site is predominantly owned by residents of Blanding. The White Mesa mill site encompasses approximately 202 hectares (ha) (500 acres).

Groundwater beneath the site mainly occurs in three strata: the Dakota Sandstone, the Burro Canyon formation, and the Entrada/Navajo Sandstone. The Burro Canyon formation hosts perched groundwater over the Brushy Basin Member of the Morrison formation. The Entrada/Navajo Sandstones form one of the most permeable aquifers in the region. The aquifer

is separated from the Burro Canyon formation by the Morrison formation and Summerville formation. Water in this aquifer is under artesian pressure and is used at the mill for industrial needs and showering. Recharge to the aquifers occurs by infiltration along the flanks of the Abajo, Henry, and La Sal Mountains, and along the flanks of the structural folds. Groundwater in the perched aquifer (Burro Canyon Formation) is monitored by the mill in the groundwater detection monitoring program. Water in this zone flows south to southwest.

Seventy-six groundwater applications, within a 8 kilometer (5 mile) radius of the site, are on file with the Utah State Engineer's office. The majority of applications are by private individuals and for wells drawing small, intermittent quantities of water, less than eight gallons per minute (gpm) (0.02 cubic feet per second), from the Burro Canyon formation. For the most part, these wells are located upgradient (north) of the facility. Stockwatering and irrigation are listed as the primary uses. No wells are completed within the perched groundwater of the Burro Canyon formation within five miles downgradient of the site. Two water wells are completed in the Entrada/Navajo sandstone located 4.5 miles (7.25 km) southeast of the site on the Ute Mountain Ute Reservation. These wells are used as domestic water supply wells and are completed approximately 365 meters (1200 foot) below the ground surface.

In the vicinity of the site, the presence of six animal species and one plant species classified as either endangered or threatened could occur. These include: (1) the bald eagle (*haliaeetus leucocephalus*); (2) the American peregrine falcon (*Falco peregrinis anatum*); (3) the black-footed ferret (*Mustela nigripes*); (4) the Southwestern willow flycatcher (*Empidonax traillii extimus*); (5) California Condor (*Gymnogyps californianus*); (6) the Mexican Spotted Owl (*Strix occidentalis lucida*), and (7) the Navajo Sedge (*Carex specuicola*) (plant species). While the ranges of the bald eagle, peregrine falcon, and willow flycatcher encompass the project area, their likelihood of utilizing the site is extremely low. The black-footed ferret has not been seen in Utah since 1952 and is not expected to occur any longer in the area. The California Condor, Mexican Spotted Owl, and Navajo Sedge have been added to the list since the 1997 EA. NRC staff contacted wildlife biologists from the Bureau of Land Management and the Utah Wildlife Service to gather local information on the occurrences of these additional species surrounding the mill. The California Condor has only rarely been spotted in the area of Moab, Utah, (70 miles north) and around Lake Powell (approximately 50 miles south). The Mexican Spotted Owl is only found in the mountains in Utah and is not expected to be on the Mesa. The Navajo Sedge has not been observed in the area surrounding Blanding and is typically found in areas of moisture.

No populations of fish are present on the project site, nor are any known to exist in the immediate area of the site. Four species of fish designated as endangered or threatened occur in the San Juan River 29 km (18 miles) south of the site. There are no discharges of mill effluents to surface waters; therefore, no impacts are expected for the San Juan River due to operations at the mill.

### **3.0 OPERATIONS**

The White Mesa uranium mill was developed in the late 1970's by Energy Fuels Nuclear, Inc. (EFN) as an outlet for the many small mines that are located in the Colorado Plateau. After about two and one-half years, the mill ceased ore processing and entered a total shutdown phase. In 1984, a majority ownership interest was acquired by Union Carbide Corporation's (UCC) Metals Division, which later became Umetco Minerals Corporation (Umetco), a wholly-owned subsidiary

of UCC. In May of 1997, IUSA purchased the assets of the EFN and is the current owner and operator of the facility. The mill has gone through operation and shut down periods throughout the 1980's and 1990's. The current license specifies a maximum production rate of 4380 tons of yellowcake per year. The facility is currently in operation and since early 1997, the mill has processed 58,403 tons from several additional alternate feed stocks.

The tailings facilities currently consist of four lined cells with leak detection systems (LDS) and a groundwater detection monitoring program consisting of six monitoring wells. These wells are sampled quarterly for chloride, potassium, nickel, and uranium. These constituents are indicator parameters to detect potential groundwater impact. Currently, there is no indication of groundwater impact from the tailing cells based on the groundwater sampling. Environmental monitoring consists of groundwater and surface water sampling, gamma radiation measurements, soil, and vegetation sampling.

#### **4.0 ENVIRONMENTAL EFFECTS**

##### **4.1 Transportation Considerations**

The material will be manifested in accordance with U.S. Department of Transportation (DOT) regulations. Molycorp estimates that it will ship approximately 60-70 trucks per week for an estimated period of less than sixty to 90 days. The transportation route as proposed, will follow route I-15 and I-70 to U.S. Highway 191 at Crescent Junction, Utah and through Highway 191 south to the mill.

According to the Utah Department of Transportation (UDOT, 2000), on an average day 6,675 motor vehicles (467 trucks total) traveled the stretch of State Road 191 on the south limit of Blanding, Utah. Based on this information, an average of 10 additional trucks per day represents an increased truck traffic load of 2.0 percent for approximately 3 months. Based on this information, a very minor increase in truck traffic from this action is anticipated and therefore, environmental impacts from this increase are expected to be negligible.

The material will be shipped using exclusive-use trucks from the Mountain Pass facility to the mill in lined, covered, aluminum end-dump trailers. The following measures will be taken to prevent leakage during transport to the mill:

1. Prior to loading materials at Molycorp, each end-dump trailer will be lined with pre-fitted, durable, 6-millimeter liners, which will serve as the primary containment for both potential liquid and dust.
2. "Free liquids" will be decanted from materials prior to the materials being placed in the trailers for transport.
3. The durable liners will be closed and sealed around the material in a "Burrito Wrap" configuration, which will fully contain all materials.
4. The "Burrito Wrap" will be protected by permanently attached 18-ounce vinyl tarpaulin, which is very effective in keeping moisture out of the trailers during precipitation events, and also protects the "Burrito Wrap".

5. Preventative maintenance, consisting of installing new rubber gaskets, using silicone caulking around the gasket surface and adjusting the air operated tailgate locks in a manner that allows the tightest seal, will be performed on each end-dump trailer immediately prior to startup of the project.
6. An inspection checklist will include visual inspections of all transport equipment (including tarpaulins) related to the DOT regulations.
7. Each transport unit will be checked for DOT compliance prior to loading materials at Molycorp for shipment to the mill.

#### **4.2 Handling and Processing at the Mill Site**

The material will be temporarily managed on a bermed concrete pad until a sufficient quantity of material is available to begin processing. IUSA will utilize water sprays, as required, to minimize dusting during dumping activities. The material will be processed utilizing an acid leach, in existing mill equipment, to dissolve the uranium. The solution will then be advanced through the mill circuitry with no significant physical modifications.

Environmental monitoring will continue and has been evaluated under previous NEPA actions. This includes monitoring of surface and groundwater, airborne particulates, radon, soils, and vegetation, according to the existing License Conditions. As an added precaution, during initial offloading of the material, IUSA will analyze breathing zone and airborne samples for total lead to ensure that the values obtained are below the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of (0.05 mg/m<sup>3</sup>) and Action Level of (0.03 mg/m<sup>3</sup>) for lead.

IUSA will continue to conduct a Dust Suppression program in accordance with the License Renewal Application for the White Mesa Mill, sections 2.0 and 4.0 (Umetco, 1991), and the September 11, 1997 Utah Division of Air Quality Approval Order for White Mesa Mill (Air Quality Permit Conditions).

Risks to endangered species from mill operations have been previously evaluated under prior NEPA actions. No additional risk to endangered species is expected due to this action. Material is handled and processed in a similar manner to conventional ore.

#### **4.3 Groundwater Effects**

Potential environmental effects to groundwater have already been evaluated for operations at the mill in previous NEPA documents. Material from Molycorp does not contain any additional chemicals that would pose an increase in threat to the groundwater resources above conventional ore. Tailings from the Molycorp material processing will be disposed in the lined tailings cells along with other process tailings. A groundwater detection monitoring program is implemented to determine if any leakage from the tailings cells has occurred.

As an additional precaution, the Molycorp material will be placed on a concrete pad that will be bermed around the edges to contain moisture. In addition, a concrete pad will be used near the trommel screen. These measures will reduce the potential for groundwater contamination from the management of this material. Should conditions warrant, IUSA will consider using



additional mitigation such as covering the piles with reinforced plastic.

## 5.0 ALTERNATIVES

The action that the NRC is considering is approval of an amendment request to a source material license issued pursuant to 10 CFR Part 40. The alternatives available to the NRC are:

1. Approve the license amendment request as submitted; or
2. Amend the license with such additional conditions as are considered necessary or appropriate to protect public health and safety and the environment; or
3. Deny the request.

Based on its review, the NRC staff has concluded that the environmental impacts associated with the proposed action do not warrant either the limiting of IUSA's future operations or the denial of the license amendment. The NRC staff has concluded that there are no significant environmental impacts associated with the proposed action. Alternatives with equal or greater impacts need not be evaluated. Therefore, the staff considers that Alternative 1 is the appropriate alternative for selection.

## 6.0 SUMMARY AND CONCLUSIONS

Based on an evaluation of the environmental impacts of the IUSA amendment request, the NRC has determined that the proper action is to issue a FONSI in the Federal Register. The following statements support the FONSI and summarize the conclusions resulting from the EA.

1. An acceptable environmental and effluent monitoring program is in place to monitor effluent releases and to detect whether applicable regulatory limits are exceeded. Radiological effluents from site operations have been and are expected to continue to remain below the regulatory limits.
2. Present and potential environmental impacts from the receipt and processing of the Molycorp material were assessed. No increase in impacts has been identified as a result of this action, therefore, the staff has determined that the risk factors for health and environmental hazards are insignificant.

Because the staff has determined that there will be no significant impacts associated with this action, there can be no disproportionately high and adverse effects and impacts on minority and low-income populations. Consequently, further evaluation of Environmental Justice concerns, as outlined in Executive Order 12898 and NRC's Office of Nuclear Material Safety and Safeguards Policy and Procedures Letter 1-50, Revision 1, is not warranted.

## 7.0 STATE CONSULTATION

\*\*\*\*\*To be completed after consultation, draft EA to Utah DEQ\*\*\*\*\*

## 8.0 REFERENCES

International Uranium (USA) Corporation's (IUSA), "Reclamation Plan, White Mesa Mill, Blanding, Utah, Revision 2.0", May 1999.

IUSA, "Groundwater Information Report White Mesa Mill, Blanding, Utah", submitted to Utah Department of Environmental Quality (UDEQ) Divisions of Water Quality (copy to NRC), May 28, 1999.

U.S. Nuclear Regulatory Commission (NRC), "Final Environmental Statement related to operation of White Mesa Uranium Project, Energy Fuels Nuclear, Inc.," NU-REG-0556, May 1979.

NRC, "Environmental Assessment for the Renewal of Source Material License No. SUA-1358, Energy Fuels Nuclear, Inc., White Mesa Uranium Mill, San Juan County, Utah", February 27, 1997

NRC, "Environmental Assessment Prepared by the Uranium Recovery Field Office in Consideration of the Renewal of Source Material License No. SUA-1358, for the Umetco Minerals Corporation, White Mesa Uranium Mill," September 26, 1985.

NRC, "Environmental Assessment" for the reclamation of the White Mesa Uranium Mill, February 10, 2001.

NRC, "Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores" NRC Regulatory Issue Summary 2000-23, November 30, 2000.

Umetco Minerals Corporation, 1991, "1991 White Mesa Mill License Renewal," 4 vols., August 1991.

Utah Department of Transportation. Phone conversation with Ms. Vicki Hanshew of the Program Development Division with William von Till of NRC regarding traffic statistics on Highway 191 and through Moab, Utah. December 20, 2000.