



***Uranium Mining in Colorado
2014
(Updated November 26, 2014)***

The Uravan mineral belt is the oldest uranium mining area in the U.S., and historically the most productive uranium and vanadium region in Colorado. The Uravan mineral belt has an estimated 1,200 historic mines that produced over 63 million pounds of uranium and 330 million pounds of vanadium from 1948 to 1978. In Eastern Colorado, “roll-front” type uranium deposits similar to those in the Uravan belt are found primarily in the northeast section of the state. Colorado ranks third among the states for uranium reserves, behind Wyoming and New Mexico.

Activity Overview:

In 2005, the Colorado Geological Survey (CGS) estimated total Colorado uranium production to be 255,544 pounds. This production came primarily from the four Cotter Corporation mines in Western Colorado. The 2005 uranium production from these mines had a gross value of \$7.3 million based on the average 2005 uranium (U_3O_8) price of \$28.52 per pound. The uranium-vanadium ore was trucked from the Western Slope mines to Cotter’s mill in Cañon City. Cotter’s Cañon City uranium ore mill is one of only four uranium mills in the U.S. In December 2011, Cotter indicated that it would not seek renewal of its expiring radioactive materials license from the Colorado Department of Public Health and Environment (CDPHE) Radiation Control Division, and would begin the process of mill closure.

In 2007 Denison Mines (USA) Corp., formerly International Uranium (USA) Corporation began producing ore from three of its permitted mines in San Miguel County. Denison shipped ore from these sites to its White Mesa Mill near Blanding, Utah. Ore production activities were halted in the fall of 2009 due to decreased uranium prices. In March 2012, Denison received approvals from DRMS for the Environmental Protection Plans (EPPs) that were amended into all six of its active Colorado permits. Energy Fuels Resources USA gained approvals in September of 2008 for the Whirlwind Mine in Mesa County and acquired Denison Mines in 2012. Pinion Ridge Resources succeeded as the permit holder for the 6 original Denison mines in August 2014. These mines are currently in Temporary Cessation but continue to do maintenance other environmental protection measures as required.

In April of 2013, the CDPHE’s Radiation Control Division re-approved Energy Fuels Resources application to build a uranium mill in the Paradox Valley of Western Colorado after lengthy litigation. The U.S. Environmental Protection Agency (EPA) approved an application for the design and construction of the mill tailings and evaporation ponds on October 27, 2011. Pinion Ridge Resources acquired the permitting rights from Energy Fuels in the summer of 2014. The Piñon Ridge Mill will be the first conventional uranium mill constructed in the United States in almost 25 years if all permits are issued and economics improve.

No major uranium ore production in Colorado was reported from 2009 through 2014. Some ore was produced at the J-Bird Mine and shipped to the White Mesa Mill in 2013 prior to going on stand-by.



Mine permitting and regulations have changed significantly since the last uranium boom in the 1970's. On August 12, 2010, the Mined Land Reclamation Board (MLRB) approved changes to the Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations that became effective on September 30, 2010. The new Rules implement changes to the Colorado Mined Land Reclamation Act, which was amended by the passage of three bills in 2008: SB 08-228, SB 08-169 and HB 08- 1161. The trio of laws established new rules to protect Colorado's groundwater during in-situ uranium mining, revised existing rules regarding the disclosure of additional information during prospecting activities, and updated hard rock mining fees.

Prospecting Notice of Intent Activity:

The Division has seen a significant decline in uranium prospecting activities. There are 15 total uranium prospect Notices of Intent (NOI) in Weld, Fremont, San Miguel, Mesa, and Montrose counties. This is a decline from a peak of 101 active prospecting NOIs in 2009. An overwhelming number of the projects have been completed and are in the final reclamation phase. In-situ-leach exploration projects in Weld County have been suspended for the foreseeable future. New uranium mining technology research is ongoing with a process called ablation in Colorado. The Division is evaluating the process in conjunction with the CDPHE Radiation Control Division in respect to jurisdictions and other regulatory issues.

Current Reclamation Permit Activity:

There are 31 permitted uranium mining projects in Colorado. A new 110d permit for the Liberty Mine in Mesa County was approved in October of 2014.

On September 30, 2011, the Division notified all uranium operators that an EPP must be submitted, file for an exemption, or commence final site reclamation. All 31 permitted uranium mines have either gained approval of an Environmental Protection Plan (EPP) from the Mined Land Reclamation Board or begun final reclamation plans to terminate and release the mines. Currently the Division is working with the CDPHE and numerous local jurisdictions on environmental impacts at Cotter's Schwartzwalder Mine in Jefferson County. Remediation work has been hampered by the September 2013 flooding in the area.

On October 18, 2011, the U.S. District Court issued an injunction regarding the Department of Energy (DOE) uranium leasing program (ULP). The injunction prohibits any activities on the DOE ULP tracts until the DOE fully complies with the National Environmental Policy Act (NEPA) and Endangered Species Act (ESA). A Record of Decision, the final approved plan, was published in June of 2014. The approved plan is still under judicial review therefore the injunction has not been lifted. While the injunction prohibits active site activity it does not preclude the Division from moving forward with the implementation of State law requirements for EPP submittals, review, and approvals. Several mines have entered into temporary cessation since they cannot access these sites to do construction or conduct mining activities.

The Division notes that the uranium industry was been significantly affected by the economic downturn and current historic lower prices for uranium ore. Permitted sites are either in Temporary Cessation awaiting economics to improve or in final reclamation phases. If or when the proposed Piñon Ridge Mill in Paradox Valley is constructed, the Division anticipates a surge in uranium mining and prospecting operations and associated permitting activities. A list of permits, operators, and EPP status is attached to this report.

Permit No.	Site name	Permittee	Permit Status	County	Site Status*	EPP
M1977004	Pitch Project	Homestake Mining Company	AC	Saguache	Reclamation	N/A
M1977248	C-JD-5	Gold Eagle Mining, Inc.	AC	Montrose	Reclamation	N/A
M1977284	Mineral Joe Claims	Cotter Corporation	AC	Montrose	Maintenance	Yes
M1977285	Sunday Mine	Pinion Ridge Resources	AC	San Miguel	EPP work	Yes
M1977297	Burros Mine	Gold Eagle Mining, Inc.	AC	San Miguel	Reclamation	N/A
M1977300	Schwartzwalder	Cotter Corporation	AC	Jefferson	Reclamation	Yes
M1977305	C-LP-21 Mine	Cotter Corporation	TC	Montrose	Reclaimed	Yes
M1977306	JD-9 Mine	Cotter Corporation	TC	Montrose	Maintenance	Yes
M1977307	CM-25 Mine	Cotter Corporation	AC	Montrose	Reclaimed	Yes
M1977310	JD-6 Mine	Cotter Corporation	TC	Montrose	Maintenance	Yes
M1977311	SR-13A Mine	Cotter Corporation	TC	San Miguel	Reclaimed	Yes
M1977416	Carnation Mine	Pinion Ridge Resources	AC	San Miguel	EPP work	Yes
M1977417	Sego Mine	Sutherland Drilling	AC	San Miguel	Reclamation	N/A
M1977451	SR-11 Mine	Cotter Corporation	TC	San Miguel	Maintenance	Yes
M1978039HR	St Jude Mine	Pinion Ridge Resources	AC	San Miguel	EPP work	Yes
M1978116	SM-18 Mine	Cotter Corporation	AC	Montrose	Maintenance	Yes
M1978222UG	Monogram Mines	Nuvmco, LLC	TC	Montrose	Maintenance	Yes
M1978311	Hawkeye Mine	Gold Eagle Mining, Inc.	AC	San Miguel	Reclamation	N/A
M1978342	Ellison Mine	Gold Eagle Mining, Inc.	AC	San Miguel	Reclamation	N/A
M1979094HR	JD-7 Pit	Cotter Corporation	TC	Montrose	Maintenance	Yes
M1980055HR	Topaz Mine	Pinion Ridge Resources	AC	San Miguel	EPP work	Yes
M1981021	West Sunday Mine	Pinion Ridge Resources	AC	San Miguel	EPP work	Yes
M1984014	C-JD-8	Cotter Corporation	TC	Montrose	Maintenance	Yes
M1989068	Centennial	B-Mining Company	AC	San Miguel	Reclamation	N/A
M1997032	Van 4 Shaft	Pinion Ridge Resources	TC	Montrose	EPP work	Yes
M2005050	J Birds Mine	Rimrock Exploration & Development, Inc.	TC	Montrose	Maintenance	Yes
M2007044	Whirlwind Mine	Energy Fuels Resources Corporation	TC	Mesa	Maintenance	Yes
M2008012	Last Chance #3 & #4	Nuvmco LLC	AC	Montrose	drilling	Yes
M2008050	October Ore Pile Reclamation	Nuvmco, LLC	AC	Mesa	Maintenance	Yes
M2011040	Prince Albert Mine	Rimrock Exploration & Development, Inc.	TC	Montrose	Maintenance	Yes
M2013070	Liberty Mine	Liberty Mining, LLC	AP	Mesa	New App	Yes

***Maintenance** includes general upkeep as required for operations in Temporary Cessation (TC) but does not include development or production activities. **Reclamation** includes current approved plans and on site activity where allowed. **Reclaimed** means most reclamation tasks completed but no release request pending. Permit Status Codes: AC = Active; TC = Temporary Cessation; AP = approved