DOE/AL/62350--T5

Finding of No Significant Impact
Proposed Remediation of the Maybell Uranium Mill Processing Site
Maybell, Colorado

AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The U.S. Department of Energy (DOE) has prepared an environmental assessment (EA) (DOE/EA-0347) on the proposed surface remediation of the Maybell uranium mill processing site in Moffat County, Colorado. The mill site contains radioactively contaminated materials from processing uranium ore that would be stabilized in place at the existing tailings pile location. Based on the analysis in the EA, DOE has determined that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969, Public Law 91-190 (42 U.S.C. §4321 et seq.), as amended. Therefore, preparation of an environmental impact statement is not required and DOE is issuing this Finding of No Significant Impact (FONSI).

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SINGLE COPIES OF THE EA ARE AVAILABLE FROM:

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BACKGROUND: The inactive uranium processing site near Maybell, Colorado, was identified in Public Law 95-604 (Uranium Mill Tailings Radiation Control Act of 1978) as 1 of 24 processing sites in need of surface remediation to remove or stabilize uranium mill tailings and associated contaminated materials to protect public health. Remedial action at the site would be performed in accordance with DOE's Uranium Mill Tailings Remedial Action (UMTRA) Project and in accordance with the terms stated in the cooperative agreement (DOE Agreement Number DE-FC04-81AL16257) between DOE and the state of Colorado, signed September 29, 1981, with subsequent modifications.

Contaminated materials on the designated Maybell uranium mill processing site cover an estimated 110 acres (ac) (945 hectares [ha]). Contaminated areas include a tailings pile, the former mill yard, areas adjacent to the tailings pile as a result of wind dispersion of contaminated materials, and areas along Johnson Wash and Lay Creek that have become contaminated by surface water transport of contaminated materials. The total volume of contaminated materials at the Maybell processing site is estimated to be 3.5 million cubic yards (yd^3) (2.7 million cubic meters [m^3]). Contamination associated with the Maybell processing site has leached into the ground water in the vicinity of the tailings pile. Ground water in the processing site area is not a historic or current drinking water source.

This ground water contamination is not affecting any drinking water supply downgradient of the tailings pile. The nearest downgradient domestic well is 3 miles (mi) (5 kilometers [km]) south of the processing site. Ground water in the processing site vicinity was formerly used for limited livestock watering.

SITE DESCRIPTION: The Maybell processing site is located in Moffat County, Colorado, 25 mi (40 km) west of the city of Craig, Colorado. The closest town is Maybell (unincorporated), 5 mi (8 km) southwest of the site. Maybell's population, which also includes area ranches, is currently estimated at approximately 100 residents. The nearest residence is 2.9 mi (4.7 km) southwest of the processing site. The northern portion of the Maybell processing site is on land administered by the Bureau of Land Management (BLM); the southern portion is on private land. Contaminated areas along Johnson Wash and Lay Creek include land administered by the BLM and private lands. Numerous open pit mines and overburden piles associated with the open pit mines exist in the area surrounding the tailings pile.

The Maybell processing site was established by the Trace Elements Corporation in 1955 and 1956. Union Carbide Corporation assumed control of the processing site, and in 1957

the mill began operation. Umetco Minerals Corporation, a wholly owned subsidiary of Union Carbide Corporation, holds the radioactive license for the designated site and continues as the operational controller. Uranium ore was obtained from nearby open pit mines. During the 7 years of operation by Umetco, the mill processed approximately 2.6 million tons (2.4 million tonnes) of ore having a grade of 0.098 percent uranium oxide (U_3O_8). All concentrate produced was sold to the U.S. Atomic Energy Commission (predecessor to the DOE). Umetco dismantled the mill after it shut down in November 1964.

The Maybell processing site is drained by Johnson Wash, an ephemeral stream that is tributary to Lay Creek. Lay Creek, a perennial stream, is tributary to the Yampa River. The confluence of Lay Creek with the Yampa River is about 5 mi (8 km) southwest of the Maybell processing site.

The land around the processing site is used for low-density livestock grazing. The sagebrush habitat in the processing site vicinity is used year-round by mule deer and pronghorn antelope, and seasonally by sage grouse and elk.

PROPOSED ACTION: The DOE-proposed surface remedial action for the Maybell processing site would stabilize the tailings pile at its present location with the construction of an aboveground disposal cell. The disposal cell would contain contaminated materials from the existing tailings pile, from areas adjacent to the pile, and from windblown- and waterborne-contaminated areas. The contaminated materials will be consolidated in an engineered disposal cell. The disposal cell will contain a multicomponent cover 6.7 feet (2 meters) thick. The cover will include a radon/infiltration barrier (sandy clay/sandy silt amended with 10 percent Redmond bentonite), a layer to protect the radon/infiltration barrier against frost penetration and prevent moisture buildup, a sand and gravel bedding/drainage layer, and a rock erosion protection layer at the cell surface.

Soil contamination resulting from surface water transport of contaminants is present along Johnson Wash and Lay Creek, the two drainages in the vicinity of the processing site. The DOE would apply supplemental surface cleanup standards to these two drainages. The DOE would clean up two areas within Johnson Wash and Lay Creek where higher than average contamination is present. The application of supplemental standards would leave the majority of the contaminated soil undisturbed.

With the exception of the two areas, contaminated soils in Johnson Wash and Lay Creek only slightly exceed the U.S. Environmental Protection Agency (EPA) standards (40 C.F.R. Part 192) for radium-226. The DOE's proposed use of supplemental surface cleanup standards for most of Johnson Wash and Lay Creek is based on evaluation of a combination of ecological, radiological, and engineering considerations:

- Environmental harm to riparian and wetland areas.

- Low radon flux from existing contaminants.

- Low predicted effects from human consumption of cattle that graze in Johnson Wash.

- Detrimental effects on the geomorphic stability in Johnson Wash.

- Costly excavation and diversion of Lay Creek.

Rock and soil borrow materials would be obtained from four locations. An existing overburden pile on BLM-administered land that is located adjacent to the western edge of

the tailings pile would be used for the radon barrier and the frost protection layer. Gravel would be obtained from a privately owned, existing commercial operation. Rock riprap would be obtained from two existing commercial operations; one is on BLM-administered land and the other is on private land, with federal ownership of the minerals.

Approximately 370 ac (150 ha) of land within and adjacent to the existing tailings pile would be required for construction purposes. This area already includes the 110 ac (45 ha) of the designated site that is restricted from access. DOE would obtain a free-use permit from the BLM for the temporary use of land under BLM administration.

Before any remedial action, a permanent jurisdiction transfer of BLM-administered land would be required to transfer administration of the disposal site to DOE. Privately owned lands would be acquired by the state of Colorado. The state of Colorado would then transfer title of these lands to DOE before the remedial action begins. The final restricted area would encompass approximately 165 ac (67 ha), with the completed, aboveground disposal cell covering approximately 66 ac (27 ha). The remainder of land would be used as a buffer zone.

Primary transportation to the site is by County Road 53 N. Access to this road is from U.S. Highway 40, which would also be used by haul trucks traveling to and from the borrow sites. Public and project traffic would commingle, primarily on U.S. Highway 40. As necessary, DOE would improve access roads to the Maybell processing site and to the borrow sites. DOE would also erect signs to indicate UMTRA Project travel and establish traffic control at strategic locations as necessary.

After completion of the remedial action, surface restoration would be performed for all disturbed areas within the 370-ac (150-ha) construction zone and at the two remediated areas along Johnson Wash and Lay Creek.

The remedial action is estimated to require 19 months and encompass two construction seasons. The 19 months includes a 5-month winter shutdown period caused by severe winter weather. The total cost for the proposed remedial action is estimated at $12.4 million; this estimate does not include construction management costs for the remedial action. The cost of the project would be shared by DOE and the state of Colorado, in accordance with the terms of the cooperative agreement. Peak employment would be 112 workers, with an estimated average employment of 59 workers.

ENVIRONMENTAL IMPACTS: The Maybell EA assesses the environmental impacts that may result from the proposed action and describes proposed mitigation measures for specific project impacts. This FONSI is based on the following summary of impacts that are discussed and evaluated at greater length in the EA.

Air Quality Impacts: Activities related to the proposed remedial action may result in the release of fugitive dust. Fugitive dust from wind erosion and transportation of borrow materials along the haul roads would be the major activities affecting air quality. There would be no significant deterioration of air quality in Maybell or the disposal site areas during the proposed remedial action.

The DOE would require the construction subcontractor to prepare a dust suppression plan prior to the start of remedial action. This plan would be approved by the Colorado Department of Public Health and Environment, Air Pollution Control Division; it must include monitoring total suspended particulate concentrations and the radionuclide concentrations of nuisance dust.

Fugitive dust monitoring would be performed by collecting 24-hour samples every 3 days with the results submitted quarterly to the Colorado Department of Public Health and Environment, Air Pollution Control Division. Dust generated by excavation, vehicle use, temporary materials stockpiling, and other activities would be controlled by spraying water or other approved substances from hoses or trucks. Covering the haul trucks or spraying water on their contents would reduce dust emissions during transportation of borrow materials.

Health Effects Related to Radiation: Following remedial action, radon releases from the tailings pile and contaminated soils would be reduced by consolidating contaminated materials and covering them with a compacted radon barrier. This radon cover would eliminate health effects to the general population from gamma exposures or airborne particulates. Total individual excess health effects following stabilization in place would be 9.9×10^{-6} per year. To ensure worker and public health protection during the remedial action, a health physics monitoring plan, which would include radon monitoring stations, would be implemented.

Consumption of meat from cattle grazing in Johnson Wash is a concern that has been evaluated by DOE since this problem has been identified in other uranium mining and milling areas. The total effective 50-year dose commitment to an individual consuming muscle tissue from cattle feeding in Johnson Wash is 6 millirems (0.06 millisieverts) per year of ingestion. This dose would correspond to a risk of 2.4×10^{-6}, or one chance in 420,000, of contracting a fatal cancer. This risk is less than the acceptable limit of one excess death per 100,000 individuals established by the International Commission on Radiological Protection.

Ground Water Contamination: The engineering design of the disposal cell provides compliance with the EPA-proposed ground water protection standards (52 FR 36000). The proposed remedial action would achieve compliance because 1) no ground water contamination from site milling operations occurs adjacent to the tailings pile, 2) naturally existing favorable geochemical conditions would result in precipitation or attenuation of hazardous constituents, 3) the disposal cell design would minimize the natural infiltration of water from rainfall and snowmelt, and 4) transient drainage would be minimized by controlling the moisture content during placement of materials and by limiting water used during construction of the disposal cell.

Floodplains/Wetlands: The Maybell EA includes a Floodplains/Wetlands Assessment as Attachment 2. Johnson Wash and Lay Creek have been mapped by the U.S. Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers. These agencies have determined that 31 ac (13 ha) of wetland habitat are present along these two drainages. None of the 31 ac (13 ha) of wetland habitat along Johnson Wash and Lay Creek would be impacted during the proposed remedial action.

As part of the proposed action, supplemental surface cleanup standards would be applied for most of Lay Creek and Johnson Wash. Use of these standards means that there would be very limited disturbance in the floodplains of these two streams. Consistent with Executive Order 11988, this part of the FONSI represents a Statement of Findings regarding activities in the floodplains of Johnson Wash and Lay Creek. As indicated in the environmental assessment, approximately 10.2 ac (4.1 ha) would be disturbed in these floodplains. This acreage consists of two areas: one in the upper reaches of Johnson Wash next to the tailings pile and the other near its confluence with Lay Creek. Based on existing data, it is anticipated that no additional areas would need to be cleaned up during remedial action. However, if additional areas of contamination that do not qualify for supplemental surface cleanup standards are found, it is believed that they will be limited in

extent. Remedial action would involve the excavation of material from the contaminated areas in the floodplain and the transport of this material to the disposal cell. The excavation of these small areas would result in minimal impacts to the floodplain. The disturbed areas would be backfilled with clean fill, graded to original contours, and revegetated as soon as possible following the completion of remedial action activities. It has been determined that there is no acceptable alternative to the limited disturbance within the floodplains because leaving contaminated material in place may not be protective of human health and environment.

Threatened and Endangered Species: According to the FWS, seven federally listed threatened and endangered species have the potential to occur near the Maybell processing site. These species include the bald eagle, black-footed ferret, humpback chub, bonytail chub, razorback sucker, Colorado squawfish, and the Ute ladies'-tresses. The Ute ladies'-tresses is the only federally listed threatened and endangered species that may be impacted by the remedial action.

Potential habitat for this plant species occurs along Johnson Wash and Lay Creek and possibly at the proposed gravel borrow site. Two field surveys using survey techniques prescribed by the FWS would be conducted for this species in 1994 at the three locations.

These surveys would be conducted before construction activity occurs at the three locations. If populations of the Ute ladies'-tresses are found, a mitigation plan would be formulated by the DOE in consultation with the FWS.

Five federal candidate species were listed by the FWS as possible inhabitants near the Maybell processing site. These five species include the loggerhead shrike, northern goshawk, Columbian sharp-tailed grouse, flannelmouth sucker, and the Wetherill milkvetch. The northern goshawk is the only federal candidate species that may occur in the project area.

The two proposed rock quarry borrow sites contain habitat for the northern goshawk. Because both of the rock quarries are existing operations, any impacts to this species of bird have already occurred. However, additional project impacts may occur if either of the two quarries need to be expanded to provide the quantities of rock needed for remedial action. Potential impacts cannot be quantified at this time because it is not known if expansion of either borrow site is necessary, or if any conifer forest habitat would be impacted if expansion were necessary. The DOE, in consultation with the FWS, would assess potential impacts to this species if either rock quarry requires expansion.

Net Depletion of Water: Water required for remedial action activities may be obtained from the Yampa River, or from aquifers hydraulically connected to the Yampa River; such action would result in a net depletion of water from the Upper Colorado River Basin. This net depletion would result in a "may affect" determination on the threatened and endangered fish of the Colorado River Basin by the FWS. This "may affect" determination would require the one-time payment of $11.98 (or the most current amount, which is adjusted annually for inflation) per acre-foot by DOE to the FWS based on the average annual depletion of 29.5 acre-feet of water required for the proposed remedial action. This payment would provide mitigation for the water depletion of the Upper Colorado River Basin. These funds would be used to acquire water rights and otherwise support the recovery of the endangered fish of the Upper Colorado River Basin.

Wildlife: Game species that would be impacted by remedial action activities include the mule deer, pronghorn antelope, and sage grouse. Approximately 214 ac (87 ha) of land (tailings pile, mill yard area, and windblown- and waterborne-contaminated areas) in the disposal site vicinity would be cleared during remedial action. This area is equivalent to range used by 11 mule deer.

The pronghorn antelope is common in the area; it uses the processing site area, including the tailings pile, more than the surrounding desert shrub habitat. The approximate 214 ac (87 ha) of land cleared for remedial action is equivalent to wintering range of three pronghorn antelope.

Sage grouse use the desert shrub habitat in the vicinity of the tailings pile year-round and for brood habitat. Approximately 113 ac (46 ha) of desert shrub habitat in the tailings pile area used by sage grouse would be cleared during remedial action.

Following remedial action, the 66 ac (27 ha) disposal cell would not be suitable habitat for most wildlife; the topslope and the sideslopes of the disposal cell would be covered by rock. The duration of the impact on game species caused by clearing the land adjacent to the disposal cell would depend on the habitat restoration plan. The DOE would restore the disturbed grassland range and the desert shrub habitat. Restoring the habitat to desert shrub type would take 4 to 5 years, while creation of grass-dominated habitat would take about 2 years.

Cultural Resources: The EA identified four archaeological sites along Johnson Wash and Lay Creek that are eligible for the National Register of Historic Places. If a determination were made that any of the four sites would be impacted, or if any new sites were identified, remediation activities would be halted until the DOE has implemented a data recovery plan. Implementation of a data recovery plan by the DOE would be in conjunction with the Colorado State Historic Preservation Officer, and would also involve the BLM if the site were on land under BLM administration.

Land Use: Approximately 370 ac (150 ha) of land within and adjacent to the existing tailings pile would be required for construction purposes. After completion of the remedial action, surface restoration would be performed for all disturbed areas within the 370 ac (150 ha) construction zone and at the two remediated areas along Johnson Wash and Lay Creek. As appropriate, uncontaminated fill material would be used as backfill, and all areas would be graded to promote surface drainage or to conform to existing drainage patterns. The overburden pile adjacent to the existing tailings pile would be recontoured to achieve slope stability. With the exception of the overburden pile, all construction and remediated areas would be revegetated.

The final restricted area would be under DOE administration and would encompass approximately 165 ac (67 ha), with the completed, aboveground disposal cell covering approximately 66 ac (27 ha). The remainder of land would be used as a buffer zone and would be restricted from future use.

The remedial action would disturb existing livestock grazing within the construction area for the length of the project. Cleanup of the two areas along Johnson Wash and Lay Creek would temporarily disturb livestock grazing in these two areas. The DOE would mitigate BLM grazing allotments affected by the proposed remedial action. Revegetation of disturbed areas would return the grass habitat to conditions suitable for grazing in about 2 years.

The Yampa River is about 5 mi (8 km) southwest of the Maybell processing site. The Yampa River is used by recreation enthusiasts for flatwater boating. The remedial action will not impact recreational flatwater boating use of the Yampa River.

The off-highway vehicle (OHV) use of the overburden piles and pits in the vicinity of the Maybell tailings pile would be adversely impacted by the proposed remedial action. Land

in the vicinity of the tailings pile would be restricted from access during the 19-month project because the land is required for construction purposes. Recreational OHV-user access to overburden piles and pits outside the proposed project area should not be impacted because access is available by County Road 53 N.

Transportation: Remedial action activities would primarily require the use of existing dirt roads to access the disposal site. U.S. Highway 40 would be used by commuting workers and as a haul route for transporting borrow materials. Because current use of these dirt roads to access U.S. Highway 40 from the borrow sites is considered low (i.e., occasional use by area hunters, land managers, or recreationists), remedial action-related activity on these roads was not considered further.

Use of U.S. Highway 40 would increase by a maximum of 89 percent (from 640 vehicles per day to 1207 vehicles per day) during the 4-month period following the winter shutdown (second construction season). Because U.S. Highway 40 in the Maybell vicinity has an average daily traffic of 640 vehicles of all types and is rated to safely carry 1750 to 1800 vehicles per hour, increases related to remedial action would not affect the level of service for U.S. Highway 40.

An increase in noise in the Maybell area and along the haul routes is expected during remedial action. However, this increase would occur only during the 14 months of active site work. Because the Maybell site is in a remote area, the greatest noise impact would be associated with the transportation of borrow materials rather than with site activities. Residents living along the haul routes to the borrow sites and those living near the borrow sites would experience the greatest noise. These noise impacts would be limited to weekdays.

Noise levels in Colorado are regulated through city, county, state, and federal noise statutes. The DOE would require the subcontractor performing the remedial action to comply with all applicable noise statutes.

Socioeconomics: Positive benefits from the remedial action are related to monies spent locally and within the state of Colorado: an estimated $6.1 million would be attributed to wages, consumable materials, and nonconsumable materials that would be purchased locally or attributed to area employment. An additional benefit related to the remedial action would be the indirect recycling of monies within the local economy and the state of

Colorado. It is assumed that the majority of the work force would commute from Craig, Colorado.

DETERMINATION: Based on the analyses in the EA, DOE has determined that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, the preparation of an environmental impact statement is not required.

Issued at Washington, D.C., on _____, 1994.

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Thomas P. Grumbly
Assistant Secretary
Environmental Management