

## INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

**Project Title :** Tony M. Mine

**NEPA Log Number:** UT-050-07-032-EA

**File/Serial Number:** UTU-80023

**Project Leader:** Rakow

**DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)**

- NP not present in the area impacted by the proposed alternative actions
- NI present, but not affected to a degree that detailed analysis is required
- PI present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
- NC (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.

### **Project Description**

Denison Mines (USA) Corp. (DUSA) plans to reopen the Tony M Mine, an underground uranium mine that was previously operated by Plateau Resources. The mine was developed in 1977 and operated into the early 1980s when it was placed on standby due to low uranium prices. The Tony M Mine was reclaimed in stages between 1995 and 2003.

The Tony M Mine is situated on the south flank of the Henry Mountains in Garfield County, Utah. The mine is located approximately 50 miles south of Hanksville and 15 miles north of Bullfrog Marina. The main access road to the mine is via six miles of all-weather county maintained road proceeding 1.5 miles west from Utah Highway 276 and then 4.5 miles north through Shootaring Canyon as shown on Figure 2 in the environmental assessment (EA).

DUSA plans to reopen the mine using a phased approach. Phase 1 consists of reconstructing the surface facilities and further developing the underground workings utilizing the existing declines (ramps descending into the ore body). Phases 2 and 3 consist of developing the full northern extent of the ore deposit, which would require construction of production shafts and additional roads and surface facilities. Phases 2 and 3 are contingent on the Phase 1 results and were not included in the Notice of Intent/Plan of Operations (NOI/PO) submitted to the Utah Division of Oil, Gas, and Mining (UDOGM) on November 17, 2006, and revised February 28, 2007 and May 2007. A copy of the NOI/PO was submitted to the BLM on the same dates, and a reformatted Plan of Operations consistent with U.S. Department of Interior Bureau of Land Management (BLM) requirements was submitted to BLM in June 2007. The full NOI/PO submitted to UDOGM is provided in electronic form on a CD in Attachment A.

During Phase 1, the mine is expected to initially employ approximately 10 to 20 miners and support personnel to rehabilitate and further develop the main declines and then expand to 60 to 70 employees during Phase 1 full production. Depending on market conditions and production rates, Phase 1 is expected to start in the second quarter of 2007 and extend over a two- to three-year period. Phases 2 and 3 have the potential to employ up to 300 miners and extend the mine life to 25-years or more.

The NOI/PO (Attachment A to this appendix), submitted to the BLM in June 2007, addresses proposed Phase 1 activities including rehabilitation of the existing mine workings, extension of the underground declines and laterals further to the north, reestablishment of the mine ventilation and dewatering systems, and construction of mine buildings and related surface facilities. These proposed activities, with a few minor exceptions, are limited to those surface areas that were previously disturbed and reclaimed by the former operator. No concurrent reclamation is proposed during Phase 1, as the entire surface facilities are needed to support potential Phase 2 and 3 mine operations. Areas of proposed Phase 1 surface disturbance are delineated in Figures 3, 4A, 4B, and 4C of the EA.

**STAFF REVIEW OF DOCUMENT**

Determination	Resource	Rationale for Determination	Signature	Date
<b>CRITICAL ELEMENTS</b>				
NI	Air Quality	<p>Mining-related activities at the Tony M Mine would be a source of particulate and gaseous air pollutants during Phase 1 activities. Fugitive dust emissions would be generated by ore and rock material handling, vehicle traffic, and ore and waste rock storage piles. Gaseous and particulate air emissions would be generated from operation of diesel generators, and from vehicle traffic. Diesel fuel and gasoline would be stored on-site in tanks; emissions from these tanks are expected to be less than 0.5 tons per year.</p> <p>The proposed underground mining operation constitutes a minor source based on maximum estimated annual emissions of criteria pollutants and hazardous air pollutants (HAPs) from Phase 1 operations. Based on the UDEQ permit requirements (Attachment B) and calculated minor source emissions, the proposed mine would not pose a significant impact to the surrounding area. The facility has a minor source air permit from the UDEQ. A permit application has been approved and is currently out for public review and comment. The mine owner would comply with all conditions listed in the state permit.</p> <p>Utah Administrative Code (UAC) R307-406-2 indicates that only new major sources or major modifications must be assessed for the impact of its emissions on visibility in any Class I area. Based on an interview with UDEQ Department of Air Quality (Tetra Tech 2006), regional haze is not considered an issue at this time since the source is defined as a minor source. The proposed project would not emit haze-forming pollutants in amounts that could have a significant impact on visibility.</p> <p>Based on the proposed uranium ore production rate of 10,000 tons per month or 120,000 tons per year, this source may be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart B, National Emission Standards for Radon Emissions from Underground Uranium Mines (Rad-NESHAP). DUSA would comply with the applicable requirements of the Rad-NESHAP at the proposed Tony M Mine. As per the regulation, “emissions of radon-222 to the ambient air shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/y [millirem per year].”</p>	Phil Zieg	1/19/07

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		<p>Since there are no residents within the mine area and only transient recreational use is anticipated, no impact to human health is anticipated.</p> <p>Possible operational measures for controlling fugitive dust and generator emissions are described in the air permit submitted to UDEQ in December 2006 (Attachment B). DUSA would implement worker safety consistent with MSHA requirements. There would be no impact to worker health due to radon or dust in air inside or exterior of the mine.</p> <p>Further detail regarding air quality supporting the NI determination is included in Attachment K.</p>		
NP	Areas of Critical Environmental Concern	Currently, there are no lands designated as Areas of Critical Environmental Concerns (ACEC) within or adjacent to the project area. There are no lands nominated for potential ACEC designation as a result of public scoping for the new Resource Management Plan (RMP). There would be no impact.	Tim Finger	1/15/07
NP	Cultural Resources	Attachment C provides a summary of the cultural resources survey conducted for Phase 1 for the project area. No archeological resources were found during the inventory of the surface facilities area (Attachment C). The areas to be primarily affected by proposed mining have been previously disturbed by past mining-related activities. Given the absence of significant cultural resources, a determination of no effect pursuant to Section 106, 36 CFR 800 is recommended. Any cultural resources encountered during mining operations would be reported to the BLM for possible collection or preservation. There would be no impact. (see U06AS1420bs)	Craig Harmon	12/22/06
NI	Environmental Justice	Minority and low income populations may exist in Garfield County. Priority would be given to protecting all communities as defined by assistance strategies. Planned actions would be coordinated and developed with Garfield County and other agencies in a manner that does not exclude persons/populations from participation or subject individuals to discrimination because of race, color, or national origin. Disproportionately high and adverse human health or environment effects would not be borne by minority or low income populations. There would be no impact.	Francis Rakow	1/9/07
NP	Farmlands (Prime or Unique)	Based on the review of the state internet site at: <a href="http://agrc.utah.gov/agrc_sgid/sgidlib/county09_shp.htm">http://agrc.utah.gov/agrc_sgid/sgidlib/county09_shp.htm</a> and for the federal database site at: <a href="http://www.ut.nrcs.usda.gov/">http://www.ut.nrcs.usda.gov/</a> , this area does not qualify as prime or unique farmlands. There would be no impact.	Brant Hallows	1/16/07

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NP	Floodplains	Flood hazard or risk to human safety within the project area is not likely. The State of Utah does not impose restrictions for floodplain management on BLM administered lands. There is no FEMA floodplain mapping available for this area ( <a href="http://www.FEMA.com">http://www.FEMA.com</a> ). Stormwater runoff at the project area would be managed (Drainage Control Plan [Attachment A]) in conformance with Utah DOGM mining and UDEQ stormwater requirements; and controlled with ditches, berms, or other flood control structures. The proposed action includes provisions to avoid adverse effects and incompatible development in areas subject to flooding, including: reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore/preserve the natural and beneficial values served by floodplains. Mine facilities would be protected from flooding with engineered structures. There would be no impact.	Brant Hallows	1/16/07
NI	Invasive, Non-native Species	A noxious weed survey, based on the Utah Noxious Weed Act (Utah 2006) and the Utah BLM Richfield Field Office (RFO) (BLM 2004), was conducted in June of 2006. One small population of Utah-designated noxious weed was observed in the area (Attachment D). The non-native species <i>Centaurea maculosa</i> (spotted knapweed) was observed in the blackbrush vegetation cover type. This was subsequently treated with spray to kill the plants and keep them from spreading. No other non-native species were observed that are considered noxious by the State of Utah. In addition, revegetation of the reclaimed site would be in accordance with the approved Reclamation Plan (Attachment A). There would be no impact.		
NI	Native American Religious Concerns	Native American religious concerns were evaluated for the Phase 1 project area (Attachment C). Based on the cultural resources assessment, no archeological resources were found during the inventory of the surface facilities area. The lack of observed cultural resources indicates that the proposed project does not have the qualities to merit protection under the provisions of the American Indian Religious Freedom Act. There would be no impact. The American Indian Religious Freedom Act does not deal with observed cultural resources, and the tribes in the area are not believed to base their interest in an area on the presence or absence of archaeological sites. The Navajo Nation held a summit on 12/12/06 in Window Rock, AZ at which the tribe called for a worldwide ban on uranium mining and associated activities on indigenous lands. This would not apply to the area around Ticaboo, but it should be noted that some Indian Tribes have	Craig Harmon	12/22/06

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		<p>evidently taken a position in opposition of uranium mining. On the other hand, some tribes have applied for the right to host radioactive waste repositories and/or interim spent fuel storage areas. In addition, it is recognized that some Native Americans may benefit from the higher-paying jobs available with uranium mining and recovery operations in the region. For example, the workforce at the White Mesa Uranium Mill near Blanding, Utah has consistently included more than 40 percent Native American workers. Some of these workers have been employed for more than 15 years and feel strongly that they deserve the right to hold jobs in the industry. As long as the activity is on public land, there would be no direct impact to Native American religious concerns.</p>		
NP	Threatened, Endangered or Candidate Plant Species	<p>A literature search was conducted for threatened, endangered, or candidate plant species, as well as sensitive species and state sensitive species prior to conducting the field surveys (BLM August 2002, <a href="http://dwrcdc.nr.utah.gov/rsgis2">http://dwrcdc.nr.utah.gov/rsgis2</a>, Utah Division of Wildlife Resources, September 25, 2006, <a href="http://www.ut.blm.gov/wh3specanimals.html">http://www.ut.blm.gov/wh3specanimals.html</a>). Site surveys were conducted in the Spring of 2006. Attachments D and E present the results. After consultation with the BLM, on-site surveys of threatened, endangered or candidate species were conducted to determine if the potential species identified by BLM are potentially located in the project area.</p> <p>The results of the survey indicated there are no federally listed or BLM special status plant species at the project area (Attachment D).</p>	Leroy L. Smalley	1/08/07
NI	Threatened, Endangered or Candidate Animal Species	<p>A literature search was conducted for threatened, endangered, or candidate animal species, as well as sensitive species and state sensitive species prior to conducting the field surveys (BLM August 2002, <a href="http://dwrcdc.nr.utah.gov/rsgis2">http://dwrcdc.nr.utah.gov/rsgis2</a>, Utah Division of Wildlife Resources, September 25, 2006, <a href="http://www.ut.blm.gov/wh3specanimals.html">http://www.ut.blm.gov/wh3specanimals.html</a>). Site surveys were conducted in the Spring of 2006. Attachments E and F present the results. After consultation with the BLM, on-site surveys of threatened, endangered or candidate species were conducted to determine if the potential species identified by BLM are potentially located in the project area.</p> <p>A wildlife survey was conducted (Attachment F). After consultation with the BLM, the following limited species surveys were conducted:</p> <ul style="list-style-type: none"> <li>• Burrowing owl</li> </ul>	Leroy L. Smalley	1/08/07

Determination	Resource	Rationale for Determination	Signature	Date
		<ul style="list-style-type: none"> <li>• Raptors</li> <li>• Mexican spotted owl</li> <li>• Various species of bats (fringed myotis, townsend's big eared, and big free tailed)</li> </ul>		
		<p>BLM was consulted concerning mule deer and bison habitat as well as other incidental species. The survey included these other incidental species. Based on the consultation with BLM and the field survey, the following conclusions were presented.</p> <p>Burrowing owl: No presence or sign, habitat is poor, and soils are shallow and rocky with no previous mammal burrows present.</p> <p>Raptors: One red-tailed hawk was observed. No raptor nests were identified in the project area.</p> <p>Mexican spotted owl: There is no suitable habitat (no riparian bottom or deciduous habitat) for the Mexican Spotted Owl within the proposed mining area. Further, there is no designated critical habitat for the Mexican Spotted Owl located within the project area, and no Mexican spotted owls were observed during the night survey in the project area.</p> <p>Various bat species: Numerous bats were observed during the surveys. The species of bats were not identified and it is possible that some sensitive bat species are present in the area. Bat guano accumulation was observed in rock crevices. Based on the number of abandoned inactive portals and exploration borings in the area, adequate bat habitat exists in the project area to sustain bat populations during active underground mining activities. The former evaporation pond wall has been breached and the pond has been empty since reclamation activities began in 1995; since that time, the existing bat populations have apparently depended on other sources of water, such as range ponds and ephemeral or seasonal water sources. Reconstruction and operation of the evaporation pond may present a convenient alternate water source. However, the pond would have propane air cannons or other devices installed to discourage bats (and raptors) from approaching it for drinking water. Since the pond would have distraction devices in place during its operating life and existing bat populations already apparently use other sources of water, no effects on bat populations are anticipated from collecting and evaporating mine water in the proposed pond.</p>		
		The Tony M Mine portals are located on state lands.		

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		<p>The project area provides no value to migratory birds at the present time. Based on the field surveys, there is no nesting or feeding habitat and any migratory bird sightings would be a “pass through” occurrence only.</p> <p>There would be no impact to T &amp; E plant or animal species.</p>		
NP	Wastes (hazardous or solid)	<p>The underground mine would be advanced primarily by machine drilling with targeted blasting a possibility. Industrial explosives are regulated by the Mine Safety Hazards Act (MSHA). Mine waste rock is not regulated as a solid waste, it is classified as a mine waste and would be reclaimed under approved reclamation plans submitted to Utah DOGM and BLM.</p> <p>Solid waste/trash would be stored in roll-offs and would be disposed of at an off-site permitted solid waste facility. No on-site solid waste disposal facilities are planned for the mine operations. The mine would not operate as a hazardous treatment, storage, or disposal facility. Based on a meeting with UDEQ (Jon Parry April 2006), the mine would most likely be classified as a conditionally exempt, small quantity generator. Wastes generated in the shop would be segregated and used solvents and oils would be disposed of off site or recycled.</p> <p>A spill prevention control and countermeasures (SPCC) plan would be required before the storage of any petroleum products on site. Any spills of petroleum products of 25 gallons or more which are not adequately contained as per the SPCC would be reported to UDEQ and a copy provided to the BLM, if within its administrative jurisdiction. Spills would be cleaned up in accordance with federal and state regulations and laws.</p> <p>Sanitary wastes would be managed in a permitted sanitary leach field on-site. It is anticipated that the Tony M mine office/dry and warehouse would discharge more than 5,000 gallons of wastewater per day at full operation. DUSA is in the process of developing and submitting an engineering report and construction plans to the Utah Department of Environmental Quality (UDEQ) for review and approval. The engineering report currently being prepared under the supervision of a registered professional engineer licensed to practice in the State of Utah contains the design criteria and all other information necessary to clearly describe the proposed project and demonstrate project feasibility. Plans would be provided to the BLM once they are</p>	Stanley J Adams	1/8/07

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		completed.		
		Since all solid and potentially hazardous waste would be segregated on-site and disposed or recycled off-site, there would be no impact.		
NI	Water Quality (drinking/ground)	<p>The geologic formations present within the region contain few aquifers (Attachment G1). Underground mining conducted in the 1980s in the basal sandstones of the Salt Wash Member of the Morrison Formation encountered groundwater only in the northwestern, structurally lower areas of the mine. Based on past mining activities, mine workings at elevations less than approximately 4,450 to 4,500 above mean sea level were below the water table, and mine workings above that elevation were dry. Attachment L summarizes the baseline data collected from a vent hole that terminates in the saturated underground mine workings. These data represent existing groundwater quality in the formation to be mined.</p> <p>Groundwater quality is reported from two water wells completed in the underlying Entrada Sandstone in the project area.</p> <p>Groundwater quality in the vicinity of the mine workings does not meet drinking water standards. Groundwater in the underlying Entrada Sandstone formation would not be affected by mining and is available for domestic uses.</p> <p>A permit by rule request was submitted to the UDEQ that indicated no impact to groundwater resources (Attachment G2). A water rights application was also submitted to the Utah State Engineers Office (SEO) (Attachment G3).</p> <p>There would be no impact.</p> <p>An 18.2 acre clay lined evaporation pond would be located on top of a mesa near the surface mine facilities. A geotechnical investigation of the existing evaporation pond was conducted in October of 2006 (Appendix A). The geotechnical report found that the soils within the existing pond are composed of clays and silts and are suitable for the pond liner. The depth of the clay in the existing pond liner is estimated to be 1 foot. In addition, natural clays were discovered beneath the pond at depths ranging from 3 feet to 15 feet. Based on the soils analysis, it is anticipated that infiltration through the proposed pond liner would reach a steady state rate</p>	Phil Zieg	

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		<p>of <math>5 \times 10^9</math> cubic feet per second (cfs) or approximately 2.5 teaspoons per day.</p> <p>Clay liners are typically used for uranium mill tailings and mining operations. In addition to clay, natural materials are typically used. Uranium is not likely to settle out of the groundwater unless high or low pH is encountered. The current pH of the water from the mine is 8, and would not be likely to cause uranium or radon transport. There is no reason to believe that this water could become basic or alkaline due to natural or other conditions. There are articles generated in the Waste Management 2004 and 2005 Conference related to Permeable Adsorptive Liners for waste disposal and the use of bentonite amended clay in low level landfill liners (Leary, 2004 and Flood &amp; Hoffman, 2005).</p> <p>In February of 2007, Tetra Tech modeled groundwater flow using an analytical element model, Well Head Analytical Element Model (WhAEM) 2000 (Appendix A). The objective of the modeling demonstration was to evaluate whether recharge from a reconstructed pond and liner system would have a hydraulic impact on the perched aquifer (Salt Wash Member Aquifer), specifically, if seepage from the pond is sufficient to increase the hydraulic head in the perched aquifer. The base case and sensitivity runs from the model indicated that there would be no effect from recharge from the pond, even if the conservatively estimated recharge (from the geotechnical study – <math>5.4 \times 10^9</math>) was increased two orders-of-magnitude and combined with conservative values of hydraulic conductivity and hydraulic gradient. Thus, the model demonstration indicates that potential discharge from the evaporation pond would have a negligible effect on groundwater quality and would not cause groundwater to exceed groundwater quality standards or the applicable class total dissolved solids (TDS) limits in any of the underlying aquifers. The dewatering of the mine workings is anticipated to cause a sink in the groundwater table. Based on this information, in the unlikely event that a small amount of water should leak through the pond liner it would ultimately go back to the mine workings where it originated.</p> <p>UDEQ has recognized that there would be a <i>de minimis</i> effect on groundwater from the evaporation pond and granted a permit-by-rule exemption on March 26, 2007.</p> <p>Other options to a clay liner would include</p>		

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		<p>geotechnical barriers which may be effective in containing the pond water; however, with the documented effectiveness of the clay liner, these additional methods are not necessary. In addition, the cost and construction disturbance from these options make them infeasible due to the remote location of the mine and pond. Additional discussion of the evaporation pond effectiveness is included in Sections 106.9, 109.1, and 110.2 of the NOI/PO (Appendix A).</p> <p>A geotechnical evaluation of the stability and safety of the existing clay dam at the facility was completed and certified by a registered professional engineer. Dam safety is regulated by the Utah SEO and a dam safety permit application was submitted to this agency. This dam safety permit application would ensure that the dam does not constitute a threat to human life; and may result in only minor property damage that would be limited to property held by the owner of the structure. Based on this information, this dam would be considered in the low hazard category with the Utah SEO. This information is included in Attachment E of the NOI/PO (Appendix A). Based on this report and an engineered design of the dam it is found to be a safe, effective means of containing the groundwater from the mine. In addition, a water balance was conducted to ensure that the pond would contain the 100 year, 6 hour stormwater runoff event and still maintain 5 feet of freeboard at the dam.</p> <p>The dam would be 33 feet in height and a stability analysis indicated that the calculated safety factor for a rapid drawdown on the upstream slope is 2.80 and ranged from 1.3 for pseudo-static analysis of the downstream slope using a 0.2 g seismic coefficient to 3.02 for static analysis of the steady state, long-term condition on the downstream slope. For earthen dams, Utah SEO recommends minimum safety factors of 1.5 for steady state and 1.2 for rapid drawdown conditions. It should be noted that the calculated safety factors for proposed design far exceed the Utah SEO recommended values. Alternatives to an earthen dam would include the use of a concrete structure; however, with the documented effectiveness of the earthen berm, consideration of a concrete dam is not necessary. In addition, the cost and construction disturbance from this option makes it infeasible due to the remote location of the mine and pond.</p> <p>The disturbed area from the pond would be minimal based on the fact that the pond and earthen dam is</p>		

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		<p>already constructed and was previously used for the same purpose as the proposed action with effective results.</p> <p>Further detail regarding water quality supporting the NI determination is included in Attachment K.</p>		
NP	Wetlands/Riparian Zones	A detailed assessment was conducted for wetlands and possible riparian zones in the vicinity of the project area. Attachment H presents the findings of the wetlands assessments. No wetlands were identified in the vicinity of the project area. Riparian zones were assessed in the vegetation report (Attachment D) and were visually assessed in the wetlands report. No riparian zones were identified in the vicinity of the project area. No springs or standing water were observed in the project area. There would be no impact.	Leroy L. Smalley	1/08/07
NP	Wild and Scenic Rivers	There are no rivers designated as Wild and Scenic Rivers within or adjacent to the project area. There are no river segments which have been found to be either eligible or suitable for possible designation as a Wild and Scenic River within the project area. There would be no impact.	Tim Finger	1/08/07
NP	Wilderness / WSA	There are no lands designated as a Wilderness Area (WA) present. There are no lands under study by Congress (Wilderness Study Area status) for potential wilderness designation. There would be no impact.	Tim Finger	1/8/07
<b>OTHER RESEOURCES / CONCERNS*</b>				
NI	Rangeland Health Standards and Guidelines	Based on the field surveys conducted in the Spring of 2006 (Attachment D and F), existing rangeland grass and forbs cover is very low and bare and rocky ground dominates. Shrub cover is very low and likely not sufficient to support extended winter grazing. There would be no impact.	Leroy L. Smalley	1/08/07
NI	Livestock Grazing	A wildlife survey was conducted that included big game species (Attachment F). Livestock grazing was also observed. Big game and livestock forage habitat in the study area is poor (Attachment D and F). Vehicular use would increase and the potential for collisions that would be dependent of the number of livestock in the vicinity of the active mining area; which is controlled by BLM. Rangeland grazing would be prohibited in the active mining areas and at the Evaporation Pond. One new segment of road is proposed from the portals to the proposed ore stockpile area (Attachment A) and improvements of existing roads would remove only a small amount of forage areas in the area. There would be no impact.	Leroy L. Smalley	1/08/07
NP	Woodland / Forestry	Based on the literature search and field survey (Attachment D), there is no woodland or forestry habitat in the project area. There would be no impact.	Robert Bate	1/10/07

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NP	Vegetation including Special Status plant species other than FWS candidate or listed species	The results of the survey indicated there are no federally listed or BLM special status plant species in the project area (Attachment D). Reclamation of the site would be in accordance with the approved Reclamation Plan (Attachment A). There would be no impact.	Leroy L. Smalley	1/08/07
NP	Fish and Wildlife including Special Status Species other than FWS candidate or listed species e.g. Migratory birds.	The nearest perennial stream “receiving waters” is the Colorado River, located approximately 11 miles from the project area. Based on the field survey conducted for wetlands, Shootaring Creek located adjacent to the mine facilities area and the portals is an ephemeral stream (Attachment H). This ephemeral stream does not provide suitable habitat or conditions to sustain fish populations or attract migratory birds. Based on the field surveys, there is no nesting or feeding habitat and any migratory bird sightings would be a “pass through” occurrence only. Wildlife such as mule deer and small mammals such as chipmunks, mice, and squirrels may be seasonally attracted to this ephemeral stream. The mine is designed for total containment of groundwater from dewatering the mine workings, and no discharge to area streams is anticipated. There would be no impact to fish, wildlife, or sensitive status species via the ephemeral stream. Vehicular use would increase and the potential for collisions with wildlife such as mule deer and small mammals would increase; however, any increase in collisions with wildlife would not significantly impact wildlife populations. There would be no impact to fish, wildlife, or sensitive status species.	Leroy L. Smalley	1/08/07
NI	Soils / Watershed	The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey of the project area was reviewed (SCS 1990). A field survey was also conducted in the Spring of 2006 (Attachment F). Five broad mapping units were identified and two areas, generally associated with ephemeral drainages, were identified as suitable for potential topsoil salvage, storage, and replacement. Topsoil salvage and replacement would be in accordance with the approved Reclamation Plan (Attachment A). There would be no impact to soils because the surface disturbance proposed in Phase 1 would occur on previously disturbed soils and the proposed mitigation measures would prevent offsite and future soil impacts.	Brant Hallows	1/16/07
NI	Recreation	Recreation activities on the BLM land outside of the active mining areas, would not be interrupted and access to BLM land would not be affected. There are no plans to restrict vehicular traffic access on the county maintained road, although the timing may be affected by MSHA requirements. A few existing four-wheel drive roads would be upgraded	Sue Fivecoat	01/10/07

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		<p>(Attachment A), improving public access to these areas. The nearest recreation area is Lake Powell and the Bullfrog Marina is located approximately 12.5 miles downgradient from the project area. Lake Powell is within the Glen Canyon National Recreation Area, located approximately 7.5 miles from the project area. The project area and mine activities are not visible from the Recreation Area.</p> <p>Recreation activities would not be affected by mining activities. Signs and gates would be in compliance with MSHA requirements and would be limited to active mining areas. No public land access would be restricted. The reactivation of the Tony M Mine would not impact recreation use patterns in the area. There would be no impact.</p>		
NI	Visual Resources	<p>The project area is located approximately 2.75 miles to the west of State Highway 276 and is not visible from the paved road. The mine facilities area is dissected by a county maintained road and the portals are visible from the unpaved road. The road would remain open during the mining operations. Mine disturbance is prevalent in the area and the underground access would be through existing portals. Mine facilities and waste rock dump reclamation would be conducted in an area that was previously disturbed. The Evaporation Pond that has been breached, would be reactivated, and is not visible from the State Highway or the county maintained road. Mine facilities would be painted to conform with the environment, as described in the PO. A visual resources photographic log was prepared for the project area (Attachment (J)). The proposed facilities would be located in an area designated as visual resource management (VRM) Class IV. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The proposal would be consistent with the objectives for this VRM Class and there would be no impact.</p>	Sue Fivecoat	01/10/07
PI	Geology / Mineral Resources/Energy Minerals	<p>The project area is located within the Colorado Plateau physiographic province, which is characterized by wide areas of nearly flat-lying sedimentary rocks interrupted by abrupt monoclinial folds that form broad basins and uplifts. Vertical and sub-vertical faults, commonly having a northeasterly or northwesterly strike, and bedding plane faults are common; but do not generally extend far from the intrusive bodies forming the Henry Mountains. Waste rock and uranium ore would be extracted from the underground mine workings. This area of Utah provides other opportunities for uranium ore</p>	Francis Rakow	1/9/07

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		extraction. The exploration for, and mining of, uranium-vanadium resources could have a positive impact for energy minerals, mineral resources and geology in this area potentially increasing the understanding of ore deposition controls and geology. The extraction of mineral resources would also constitute an irretrievable loss of the same.		
NI	Paleontology	Paleontological resources were assessed by field reconnaissance conducted in October 2006 (Attachment C). No paleontological resources were found during the inventory of the surface facilities areas. Surficial deposits exposed throughout the area consist of the Late Jurassic Morrison Formation, which has the potential for yielding significant vertebrate fossil localities. The areas to be disturbed by activities have mostly been disturbed by past mining activities. However, the previously undisturbed areas to be affected by mining activities (particularly Vent Hole No. 7 and 8) occur on colluvial sediments. Any vertebrate fossils encountered during mining operations would be reported to the BLM for possible collection or preservation. There would be no impact.	Francis Rakow	1/9/07
NI	Lands / Access	Public lands in the project area are accessed by an unpaved county maintained road leading up to the inactive portals and by four-wheel drive roads that provide access to the area for recreational uses. Access using the county maintained road would not be affected and a few existing four-wheel drive roads within the project area would be upgraded to provide vehicular access (Attachment A). As such, some vehicular access would be improved during mining activities, but would be reclaimed after completion of mining activities. Only one new road would be constructed in the facilities area from the portals to the ore stockpile area. The proposed action would have no impact on public access, would not involve realty actions, or affect any right-of way issues. There would be no impact.		
NP	Fuels / Fire Management	The vegetation in the project area is predominantly the Desert Shrub vegetative community type and a formerly reclaimed waste rock dump. Fuels and fire management in these community types is not an issue. There would be no impact.	Russ Ivie	1/17/07
PI	Socio-economics	The population of Garfield County in 2006 was 4,534. Population change from April 1, 2000 to July 1, 2006 was 4.2% . ( <a href="http://factfinder.census.gov/servlet">http://factfinder.census.gov/servlet</a> ). Median household income in 2004 was estimated at \$37,454. ( <a href="http://quickfacts.census.gov/qfd/states/49/49017.html">http://quickfacts.census.gov/qfd/states/49/49017.html</a> ). Ten percent of the population lives at or below the poverty level. Housing units in 2005 was	Francis Rakow	1/9/07

Determination	Resource	Rationale for Determination	Signature	Date
		<p>estimated at 3,146 (<a href="http://quickfacts.census.gov/qfd/states/49/49017.html">http://quickfacts.census.gov/qfd/states/49/49017.html</a>).</p> <p>A significant portion of the existing work force in the Ticaboo area work in seasonal service jobs within the recreation industry.</p> <p>Mine construction would provide short-term employment to area residents while mine operations would provide long-term employment and would contribute relatively high-paying jobs and a dependable long-term tax base to Garfield County. Adequate housing to support the workforce would be available in Ticaboo and Hanksville.</p>		
NP	Wild Horses and Burros	The project area is not within an active wild horse or burro area. No wild horses or burros were observed during the site surveys conducted in the Spring of 2006. There would be no impact.	Dona Bastian	1/10/07
NP	Wilderness characteristics	<p>There are no lands which have been inventoried or evaluated by BLM and found to possess wilderness characteristics. There are lands which have been submitted directly to Congress by a wilderness advocacy group for possible designation as a Wilderness Area but no designation has been authorized to date (America's Redrock Wilderness Act, S-882 and HR-1774).</p> <p>Since all the wilderness inventories and submittals conducted by the advocacy group recognized the ground disturbance that is currently present and there would be minimal new surface disturbance, there would be no adverse affect to wilderness characteristics or the possible designation as Wilderness Area from the proposed action. In addition, the current land Use Plan (The Henry Mountain Management Framework Plan) is the controlling management document, which provides for this type of activity on these lands. There would be no impact.</p>	Tim Finger	1/08/07

#### FINAL REVIEW

Reviewer Title	Signature	Date	Comments
NEPA/Environmental Coordinator			
Authorized Officer			

## Attachments

- A Plan of Operations  
Plan submitted to UDOGM November 2006 and revisions from February 2007 and May 2007. Plan included on a CD.
- B Air Quality Notice/Modeling  
Notice transmitted to UDEQ.
- C Cultural and Paleontological Resources Survey  
Report from Abajo Archaeology
- D Baseline Vegetation Report
- E Threatened, Endangered or Candidate Species and Special Status Species Summary
- F Baseline Wildlife Report
- G1 Geology and Hydrogeology Report
- G2 Groundwater Permit by Rule Request to UDEQ
- G3 Water Rights Transfer  
Water rights transfer is underway. Notice of status is enclosed.
- H Wetland Assessment and Delineation Report
- I Baseline Soils Report
- J Visual Assessment Photographic Log
- K Supporting Documentation for Air Quality and Water Quality No Impact Determination
- L Baseline Groundwater Data

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**ATTACHMENT A**  
**PLAN OF OPERATIONS**  
**(Plan submitted to UDOGM November 2006, and updates from February 2007, and June 2007)**  
**Plan included as a CD**

**ATTACHMENT B**  
**AIR QUALITY NOTICE/MODELING**  
**(Notice transmitted to UDEQ)**

**ATTACHMENT C**  
**CULTURAL AND PALEONTOLOGICAL RESOURCES SURVEY**  
**(Report from Abajo Archaeology)**

**ATTACHMENT D**  
**BASELINE VEGETATION REPORT**

**ATTACHMENT E**  
**THREATENED, ENDANGERED, OR CANDIDATE SPECIES**  
**AND SPECIAL STATUS SPECIES SUMMARY**

**ATTACHMENT F**  
**BASELINE WILDLIFE REPORT**

**ATTACHMENT G1  
GEOLOGY AND HYDROGEOLOGY REPORT**

**ATTACHMENT G2**  
**GROUNDWATER PERMIT BY RULE REQUEST TO UDEQ**

**ATTACHMENT G3**  
**WATER RIGHTS TRANSFER**  
**(Water rights transfer is underway. Notice of status is enclosed)**

**ATTACHMENT H**  
**WETLAND ASSESSMENT AND DELINEATION REPORT**

**ATTACHMENT I  
BASELINE SOILS REPORT**

**ATTACHMENT J**  
**VISUAL ASSESSMENT PHOTOGRAPHIC LOG**

**ATTACHMENT K**  
**SUPPORTING DOCUMENTATION FOR AIR QUALITY AND WATER QUALITY**  
**NO IMPACT DETERMINATION**

**ATTACHMENT L**  
**BASELINE GROUNDWATER DATA**