M/037/0012
cc: Tom
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SCOPING COMMENTS

PLAN OF OPERATIONS AMENDMENT, DENISON MINES (USA) CORPORATION
LA SAL MINES COMPLEX EA/EIS

Moab Field Office
Bureau of Land Management
Monticello Ranger District
Manti-La Sal National Forest

Uranium Watch • Living Rivers • Canyonlands Watershed Council •
Grand Canyon Trust • Center for Biological Diversity • Sierra Club

January 31, 2011

Uranium Watch, Living Rivers, Canyonlands Watershed Council, Center for Biological Diversity, Grand Canyon Trust, and Glen Canyon Group of the Sierra Club are writing to request that an additional Alternative be developed and fully analyzed in the upcoming National Environmental Policy Act (NEPA) document for the consideration of the November 2010 Plan of Operations Amendment Denison Mines (USA) Corp., La Sal Mines Complex, San Juan County, Utah. Given the significant effects and risks associated with uranium mining in the La Sal community, we believe than an Environmental Impact Statement (EIS) must be prepared. Under the NEPA regulations of the Council of Environmental Quality, there appears to be no ability to claim "No significant impact" for the expansion of the La Sal Mines Complex, prompting the preparation of an EIS rather than an Environmental Assessment (EA).

Part I of these comments provides an outline of the essentials of an Environmental Protection (EP) Alternative for the La Sal Mines EA/EIS. We propose that all elements of this alternative be published in the Draft EA/EIS alongside alternatives. This alternative would be the same as the Proposed Alternative but for the features presented in Part I. This alternative is reasonable and is different than the alternative being proposed by the BLM and, thus, should be made available for public comment. If you feel that any part of the EP Alternative is not reasonable, legal, or feasible for the Bureau of Land Management and Manti-La Sal National Forest (Agencies) to include in the Draft EA/EIS, we request that you discuss this with us, because you or we might be able to suggest ways the Alternative could be altered.

Part II provides specific EA/EIS scoping comments that state issues that must be addressed by the Agencies in any NEPA document.

Part III provides comments on the November 10 Plan of Operations Amendment.

Part IV is a discussion of the applicable regulations.

Attachments:

Exhibit A: Modeling of Radon Emissions from Denison La Sal Mines, SENES Consultants Ltd., October 30, 2010.

Exhibit B: Notice of Violation; Denison Mines Corp., La Sal Mines, La Sal, Utah; Proceeding under Section 113(a) of the Clean Air Act; Environmental Protection Agency, Region 8; Docket No. CAA-08-2010-0016; August 17, 2010

Exhibit C: Assessment of Nonpoint Source Chemical Loading Potential to Watersheds Containing Uranium Waste Dumps and Human Health Hazards Associated with Uranium Exploration and Mining, Red, White, and Fry Canyons, Southeastern Utah; Scientific Investigations Report 2010–5108; United States Geological Survey; 2007. http://pubs.usgs.gov/sir/2010/5025/

Exhibit D: *Biological Pathways of Exposure and Ecotoxicity Values for Uranium and Associated Radionuclides*; By Jo Ellen Hinck, Greg Linder, Susan Finger, Edward Little, Donald Tillitt, and Wendy Kuhne; Chapter D of *Hydrological, Geological, and Biological Site Characterization of Breccia Pipe Uranium Deposits in Northern Arizona*, edited by Andrea E. Alpine, Scientific Investigations Report 2010–5025; United States Geological Survey; August 2010. http://pubs.usgs.gov/sir/2010/5025/pdf/sir2010-5025_biology.pdf

I. ENVIRONMENTAL PROTECTION ALTERNATIVE

1. Locally-available La Sal Mines website. A user-friendly La Sal Mines Complex website will be designed, with input from local and interested parties, to maintain Information on environmental, health, regulatory compliance, and other assessments of interest to the public.

2. Interim site clean up. Within one year of EA/EIS approval, Denison Mines (USA) Corporation (Denison) will draft and implement a plan to clean up scrap and debris at the mines, waste rock dumps, and vent hole sites on an ongoing basis rather than waiting for final site reclamation. The draft plan will be notified and made available for public comment for one month.

3. Local meteorological data. Meteorological data gathering stations approved by the Utah Division of Air Quality DAQ) and the Environmental Protection Agency (EPA) will be established to determine meteorological conditions at sites next to radon vent holes that are representative of the various meteorological conditions for all of the vent holes sites. This would include at least five locations: Beaver Shaft; near Vents 2300-1 and 2300-2, vent cluster in Section 6, vent cluster in the Manti-La Sal National Forest, and at least one other vent hole location. The stations will measure cold air drainage and wind occurrence, direction, and speed. Existing meteorological

data from La Sal that can be shown to be representative of the meteorological conditions at one or more of the radon vent locations will be acceptable data.

4. Installation of monitoring devices. The amount of radon and other air borne radionuclides actually being received at the La Sal Elementary School and in the vicinity of other radon receptor sites that have their estimated doses reported to the DAQ will be measured on a continual basis. The amount of radon inside public buildings will be measured at least quarterly. This will include the La Sal Elementary School, La Sal Community Center, and U.S. Post Office. Interior home monitoring will be offered to any La Sal area resident that requests it, pursuant to approved EPA and DAQ methodologies.

5. Reopening of the La Sal Mine. The reopening of the La Sal Mine and any expansion of the La Sal Mine waste rock piles will be the subject of a new amendment to the existing Plan of Operations (PO) and new NEPA review.

6. Exploration drilling. The exploration drilling proposed, but not identified in a site-specific manner in the POA, will require the submittal of an amendment to the existing PO and a new NEPA review with opportunity for public comment.

7. Vent hole installation. The vent holes proposed in the POA will require the submittal of an amendment to the existing PO when the exact location of the proposed vents is known. The vent hole installation proposals will be the subject of a new NEPA review and opportunity for public comment. A technical determination will be made at the time of any application as to whether the operation of the proposed vents will result in non-compliance with the standard for radon emissions from underground uranium mines (40 C.F.R. Part 61, Subpart B).

8. Weed control. Weed control will use non-chemical methods and noxious weed removal sites will be re-vegetated with native plants.

9. Reduction of risks from the presence of arsenic. Within six months of EA/EIS approval, the mine owner will draft and implement a plan to reduce the risks from the presence of arsenic in the development rock prior to mine reclamation. The draft plan will be noticed and made available for public comment for one month.

10. Fencing and warning signs. Fencing and radioactive hazard warning signs will be placed at all vent holes. Radioactive warning signs will be placed at the waste rock dumps.

11. Pre-mining vegetation conditions. Denison will contract with a botany consulting company to determine pre-mining vegetation conditions for all areas that have been or will be impacted by the mining operations.

12. Reclamation. Spring and fall assessments of reclamation progress will be made available on the La Sal Mines website.

13. Mine closure performance standard: Denison will comply with a generic closure performance standard that has been established by the Bureau of Land Management (BLM) in a separate regulatory process. All new site-specific performance standards shall be the subject of a separate decision-making process, NEPA review, and public comment.

14. Public health. Within one year of EA/EIS approval, a program will be developed, with local public input, to assess the current health of the citizens who are living in the La Sal area and to track the health of citizens, particularly children, who have been exposed to radon, uranium, and other radionuclides over the long-term, even if those citizens move from the La Sal area. The assessment plan will be made available on the La Sal Mines website.

15. Vegetation sampling. Within one year of EA/EIS approval, Denison will develop and implement a sampling program to determine the potential uptake of radionuclides in the vicinity of the waste rock piles, mine sites, and vent holes to be approved by the BLM and USFS.

16. Soil sampling. Within one year of EA/EIS approval, Denison will develop and implement a soil-sampling program to determine the uptake of radionuclides in the vicinity of the vent holes on public land. Radionuclides that are emitted from the vents are scavenged by soils and water in the immediate vicinity of the sites.

17. Radiation surveys. Denison will conduct radiation surveys of the mines, ore piles, waste rock piles, access and haul roads, vents, exploration drilling sites, and any other location that has been potentially impacted by the mining operations since the early 1970s. Denison will follow up with annual radiation surveys of those areas. Results of those surveys will be submitted to the BLM and United States Forest Service—Manti-La Sal National Forest (USFS) and made available on the La Sal Mines Complex website.

18. Emergency response plan. Within six months of EA/EIS approval, Denison will develop an emergency response plan for fires and other emergencies that have the potential to adversely impact the mine operation or result in the community being adversely being impacted by the mine operation. This will include a plan to shut down radon exhaust vents to protect emergency workers. This will include a plan to limit the presence of pregnant emergency responders at the mine facilities.

19. Long-term monitoring. Within one year of EA/EIS approval, Denison will develop and implement a plan that provides for continual long-term monitoring and maintenance of the waste rock piles and mine sites after site closure.

20. Waste rock reclamation. Within one year of EA/EIS approval, Denison will develop a plan to reclaim any waste rock piles that will no longer receive waste rock from the mining operations in a timely manner, rather than waiting for final site remediation. If piles will remain inoperative for a lengthy period of time with the expectation of future use or prior to placement of the waste rock underground, Denison will develop a plan to place a temporary cover on those piles.

21. Access route reclamation. Within six months of EA/EIS approval, Denison will assess the condition and use of access routes, including short cut routes, associated with the mine operations and determine which routes need to be stabilized due to erosion or can be reclaimed within the next two years. Denison will carry out a plan, with timeline, to remediate or reclaim any access routes that are not being used. This would include a steep side road and eroded short cut that provides access to Pandora Vent #2.

22. Mine compliance records. Denison will provide the BLM and USFS with copies of correspondence with the DAQ and EPA with respect to their compliance with 40 C.F.R. Part 61. Denison will provide the BLM and USFS with copies of any citations and orders issued to Denison or Reliance Resources Ltd. (the operator of the Pandora Mine) by MSHA. Such documents will be submitted in within 30 days of the receipt or submittal of those documents.

23. Mine vent diffusers. Within one year of EA/EIS approval, Denison will place a radon vent diffuser on all vents, regardless of whether the vent has a fan at the surface or underground.

24. Soil and groundwater sampling. Within six months of EA/EIS approval, Denison will develop and implement an BLM approved plan to sample soils and groundwater in the vicinity of the waste rock piles and ore pads to determine the presence of leachates from the waste rock and ore storage areas. Results of those surveys will be submitted to the BLM and USFS and made available on the La Sal Mines Complex website.

25. Monitoring plan. Denison will submit the results of site monitoring and site inspections to the Agencies within thirty days of receipt of those results. Any documents that are seen-but-not- taken by Agency or Utah Division of Oil, Gas & Mining (DOGM) inspectors, should be kept on site until site closure.

26. Reclamation cost estimate. Within one year of EA/EIS approval, Denison will include cost estimates for long-term site monitoring and maintenance to assure that the site is maintained in a safe and secure condition and in compliance with reclamation standards as long as the site has the potential to adversely impact the environment due to site degradation. This estimate, including the breakdown of cost estimates by monitoring plan elements, will be made available on the La Sal Mines Complex website.

27. Ore transportation. Denison will cover ore that is being transported to the mill with a sealed, hard cover to prevent the possibility of gaseous and particulate emissions from the trucks.

II. ENVIRONMENTAL ASSESSMENT SCOPING COMMENTS

Below are scoping comments for an Environmental Assessment (EIA) or Environmental Impact Statement (EA) n response to the Plan of Operations Amendment Denison Mines (USA) Corp., La Sal Mines Complex, San Juan County, Utah; Prepared by: CDM Inc. for Denison Mines Corporation; November 2010. There may be some redundancy, since there is overlapping in the various aspects of the proposed La Sal Mines Complex operation and expansion.

A. General Comments

1. The Plan of Operations Amendment (POA) for the La Sal Mines Complex warrants a full Environmental Impact Statement (EIS), rather than an Environmental Assessment (EA). The Bureau of Land Management (BLM) and the US Forest Service—Manti-La Sal National Forest (USFS) (collectively referred to herein as "Agencies") must commence an EIS process at this time and not wait until the finalization of the EA. This is based on the following:

a. The BLM National Environmental Policy Act Handbook (H-1790-1, January 2008) includes a discussion on determining whether an EA of EIS is appropriate (Chapter 7). Section 7.2 (Actions Requiring and EIS) states, in part:

> Actions whose effects are expected to be significant and are not fully covered in an existing EIS must be analyzed in a new or supplemental EIS (516 DM 11.8(A)). You must also prepare an EIS if, after preparation of an EA, you determine that the effects of the proposed action would be significant and cannot be mitigated to a level of nonsignificance (see section 7.1, *Actions Requiring an EA*). If you determine during preparation of an EA that the proposed action would have significant effects and cannot be mitigated to a level of nonsignificance, you do not need to complete preparation of the EA before beginning preparation of an EIS (516 DM 11.7(E)) (See section 8.4.1, *Significant Impacts – Transitioning from an EA to an EIS*).

b. Section 7.3 discusses the meaning of Significance. The CEQ regulations explain in 40 CFR 1508.27 that "Significantly" as used in the NEPA requires considerations of both context and intensity:

> (a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national),

the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, for a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short-term and long-term effects are relevant.

(b) Intensity. This refers to the severity of effect. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action…." (40 CFR 1508.27). Note that to determine the severity of effect, you must look at direct, indirect, and cumulative effects (40 CFR 1508.25(c)).

c. The CEQ regulations (40 C.F.R. § 1508.27) include the following ten considerations for evaluating intensity of effects (direct, indirect, and cumulative):

- Impacts that may be both beneficial and adverse
- Public health and safety
- Unique characteristics of the geographic area
- Degree to which effects are likely to be highly controversial
- Degree to which effects are highly uncertain or involve unique or unknown risks
- Consideration of whether the action may establish a precedent for future actions with significant impacts
- Consideration of whether the action is related to other actions with cumulatively significant impacts
- Scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places
- Threatened or endangered species and their critical habitat
- Any effects that threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment

d. The proposed expansion of the La Sal Mines Complex and long-term disposal of mine development rock at the mines (Proposed Action), with respect "Context" involves a specific locale and an action that will have both short-term and long-term significant impacts to the human and natural environment.

e. Public health and safety: The La Sal Mines Complex will continue to significantly impact the health and safety of the community of La Sal and the workers at the mine.

- Significant health impacts to the community include impacts from the emission of radon and other radionuclides from the radon vents, waste rock (development rock) piles, stockpiled ore, ore pads, contaminated rock and soil, and windblown materials. There is a potential significant health impact from the presence of arsenic in the waste rock. The risks associated with the presence of arsenic have not been evaluated for the effects during the operation of the mines, i.e., prior to the post reclamation period.

- The aforementioned significant health impacts to the community are also relevant to public who are engaging in recreational activities on and around mine facilities and products located on BLM and USFS lands.

- There is the potential for significant impacts from the consumption of domestic and wild animals that live in La Sal Mines Complex area, from the consumption wild and domestic plants grown in the area, and from milk and eggs from animals raised in the area.

- The emission of radon into the community is a significant effect that cannot be

mitigated through any BLM or Forest Service action. The mines are required to exhaust radon from the mines to protect the health of the underground workers. The amount of radon and radon progeny exhausted from the mines will always have the potential to have a significant impact on the community and the natural environment. As the mine operation expands the emission of radon into the community will only increase, and the potential for adverse effects to the community will increase. In 2009 the standard for radon emissions exceeded the EPA standard for 6 of 8 receptors. Those receptors include human habitation and the local elementary school.

- There is no data in the POA regarding the emission of radon and other radionuclides from the La Sal Mines sites and the extent of any off-site contamination at the mines and in the vicinity of the radon vents. Although Denison submits information to the EPA and the Utah Division of Air Quality regarding the radon emissions, some of that data has been incomplete. Further, in calculating the dose to the nearest resident, Denison does not use meteorological data that comes from La Sal; therefore, there is currently no reliable data on the exposure of the community of La Sal to radon, a hazardous air pollutant. There is no reliable data on the expected exposure of the community of La Sal to radon and other radionuclides as a result of the expansion of the mine operations under 1, 2, and 3.

- There are adverse effects to the workers at the mines due to the failure of the mine operators to comply with the Mine Safety and Health Administration (MSHA) regulations. The operators of the La Sal Mines Complex[1], Denison (Beaver Shaft) and Reliance Resources LLC (Pandora Mine), received 20 citations for health and safety violations in 2009.[2] In 2010, the mine operators received 52 health and safety citations and orders, 7 of which were associated with a fatal mine accident. MSHA conducted an inspection in January 2011, in response to a verbal hazard complaint. As a result, Denison received two citations for violation of the requirement: "In environments exceeding 1.0 WL [Working Level], miners shall wear respirators approved by NIOSH for radon daughters prior to July 10, 1995 or under the equivalent section of 42 CFR part 84 and such respirator use shall be in compliance with §57.5005."[3] It is apparent that the workers at the La Sal Complex will continue work in a health and safety environment that could have significant adverse effects.

- These potential significant impacts must be identified and evaluated in the context of an EIS.

f. Unique characteristics of the geographic area:

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[1] MSHA ID 3 4200470 (Pandora Complex)

[2] http://www.msha.gov/drs/drshome.htm

[3] 30 CFR § 57.5044 Respirators.

- The La Sal Mines Complex is in a unique area due to the variation of the topography and ecology for the mines and mining activities associated with the installation of radon vents, exploration drilling, and access roads. Some of the impacted area includes a variety of shrubs and trees in piñon-juniper woodland. With limited rainfall, the ability of the land to recover from clearance of this woodland is limited. Aerial photographs show that this woodland would take decades to recover from the clearance of the vegetation. Unique characteristics include its location on the slope of a mountain subject to cold air drainage and with permanent and ephemeral watercourses.

- The mining area is unique in that it is located within and immediately adjacent to a rural agricultural community, where people are readily exposed to the significant radioactive and other potentially harmful emissions from the mines.

g. Degree to which effects are likely to be highly controversial:

There are already controversies regarding the nature and extent of the effects associated with the expansion of the La Sal Mines Complex. These controversies include:

- The effects of the emission of radon and other radionuclides from the mining operation
- Extent of surface impacts from exploration drilling, roads, access routes, and vent hole installation
- Timing of reclamation
- Revegetation standards.
- Reduced ability of the land to heal
- Amount of cover on the waste rock piles
- Reclamation standards associated with the long-term presence of uranium and uranium progeny at the mine sites.

h. Degree to which effects are highly uncertain or involve unique or unknown risks:

- The effects and risks associated with the emission of radon and other radionuclides from the current and future mining operation involve unique and unknown risks to the La Sal community.

- The effects and risks associated with the presence of arsenic in the waste rock during mine operation are unknown.

- Uncertain and unknown risks to the workers and the public associated with the exposure to silica in the ore.

- The POA failed to address these effects and risks during the current mine

operation and as a result of future mine expansion.

- The effects of the long-term storage of the waste rock piles are unknown, particularly because reclamation standards for the emission of radionuclides from the piles, ore pads, and contaminated soils have not been established.

- Radioactive sands and fine particulates remain radioactive for hundreds of thousands of years.

- Intense rainfall (flash flood) and snowmelt events can mobilize and transport mine waste with associated radioactive material and trace elements long distances during relatively short periods.

i. Consideration of whether the action may establish a precedent for future actions with significant impacts:

- The consideration and environmental review of Plans of Operations and amendments for all uranium mines on federal public lands. This includes uranium-mining activities in Utah, Arizona, Colorado, New Mexico, Wyoming, South Dakota, and other states.

- Consideration and environmental review of future expansion of the La Sal Mines Complex.

- Radiological standard for reclamation of the waste rock areas, ore pads, and other areas contaminated by radionuclides at uranium mining operations.

j. Consideration of whether the action is related to other actions with cumulatively significant impacts:

- The proposed expansion of the La Sal Mines Complex is related to other proposed or existing uranium mining developments in the area. These include:

    - Redd Block IV (Denison) and Energy Queen Mine (Energy Fuels Resources Corp.) in La Sal
    - La Sal II (Laramide Resources Ltd.) Velvet Mine (Uranium One Inc.), and Rim (Denison) Mines in nearby Lisbon Valley
    - Whirlwind Mine (Energy Fuels Resources Corp.) in the La Sal Mts. on the Utah/Colorado border
    - Sunday Mine (Denison) in Colorado
    - Piñon Ridge Uranium Mill in the nearby Paradox Valley, Colorado
    - Development of uranium mining on BLM, USFS, and Department of Energy lands in the area of Piñon Ridge Uranium Mill.

- The expansion of the La Sal Mines Complex is also related and connected to the

operation of the White Mesa Uranium Mill, south of Blanding, Utah. Without the White Mesa Mill, there would be no facility to process the ore from the Complex and the Complex would not operate. Thus, the Complex is considered a connected action with the White Mesa Mill. At a minimum, the full environmental impacts from the Mill, alone and in association with the Complex, must be fully evaluated.

- The expansion of the La Sal Mines Complex is directly related and connected to the existing La Sal Mines Complex operation.

- The expansion of the La Sal Mines Complex is directly related to other historic uranium mining activities in the La Sal Mountains area, Lisbon Valley, nearby Colorado.

- The cumulative significant effects of those related uranium mining facilities and activities (past, current, and reasonably foreseeable) include:

  Impacts —
  - on transportation
  - to water, soils, and air quality
  - of land disturbance over the short- and long-term
  - from waste rock and contaminated areas over the short- and long-term
  - from the emission of radon from radon vents
  - of the release of other radionuclides into the environment
  - to known cultural resources in the White Mesa Archeological District
  - on low-income and tribal communities in San Juan County.

- The cumulative impacts of extensive uranium mining in La Sal, San Juan County, or the Colorado Plateau have never been assessed.

- There has never been an assessment of the disproportionately high and adverse human health and environmental effects to low-income and tribal communities in Utah from the mining and processing of uranium ore in San Juan County, pursuant to applicable requirements for Environmental Justice in Minority Populations and Low-Income Populations.

- For all of these past, present, and reasonably foreseeable actions/operations, the Agencies must fully analyze the quantitative as well as qualitative impacts to human health and safety and the environment. Simply listing these actions/operations, or briefly discussing generalized impacts, fails the Agencies' duties to conduct the "hard look" required by NEPA. Because of the potential for significant environmental impacts from the proposed action, as well as in conjunction with these other actions/operations, an EIS is required.

k. Any effects that threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment:

- The expansion of the La Sal Mines Complex has the potential to threaten violation of the National Emission Standards for Hazardous Air Pollutants for radionuclides, specifically, 40 C.F.R. Part 61, Subpart B—National Emission Standards for Radon Emissions From Underground Uranium Mines. The expansion of the mining operation will result in an increase in the amount of radon emitted from the underground mining operations. The increase has the potential for the mines to exceed the standard for one or more receptor points. The mines were out of compliance in 2009.[4] Although Denison has proposed using a different computer code to demonstrate compliance, the use of a new computer code shows that the mines are close to the standard's limitations.[5] See Exhibit A. If Denison used meteorological data from La Sal, rather than from the Grand Junction airport, even the new computer code may demonstrate they are out of compliance.

- At this time, there are still a number of unresolved issues related to the compliance with 40 C.F.R. Part 61.

- The expansion of the La Sal Mines Complex threatens the violation of laws and requirements related to the worker environment. The number of MSHA violations has increased as operations have expanded at the mines. In 2009 there were 27 citations for health and safety violations; in 2010 there were 52 citations and orders for health and safety violations.[6] In 2009, Reliance Resources LLC (Pandora Mine) was issued penalties totaling $1,648; Denison (Beaver Shaft) was issued penalties totaling $2,743. In 2010, Reliance Resources was issued penalties totaling $2,664 (this does not include penalties for 5 citations associated with the fatal mine accident in May 2010); Denison received penalties of $8,134 (this does not include penalties for 13 violations in December 2010 and two violations in January 2011).

l. Other significant impacts:

- There will be significant impacts associated with climate change over the life of this proposal.

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[4] Denison Mines (USA) Corp.; 40 Code of Federal Regulations 61 Subpart B; La Sal Mines, La Sal, San Juan County, Utah; 2009 Annual Compliance Report, March 2010. http://www.uraniumwatch.org/pandoramine/denison_subpartBannualreport2009_lasalmines.100330.pdf

[5] Modeling of Radon Emissions from Denison La Sal Mines, SENES Consultants Ltd., October 30, 2010. http://www.uraniumwatch.org/lasalmines.ut/senes_lasalmines_subpartB_monthlyrpt.101030.pdf

[6] http://www.msha.gov/drs/drshome.htm

2. The Agencies must assess the impacts, including cumulative impacts, of the portions of the La Sal Mines Complex that are on state and private land, not just on federally administered land.

3. The Agencies must fully determine the radionuclide emissions from the existing mine and assess the impacts of those emissions to the air, soils, and water, wild and domestic animals, and human population.

This would include conducting radiation surveys of the mines, ore piles, waste rock piles, access and haul roads, vents, exploration drilling sites, and any other location that has been potentially impacted by the mining operations since the early 1970s. It would also include vegetation sampling and assessment in the vicinity of the mines and radon vents.

4. Due to the likelihood of regional transport of air emissions from the La Sal Mines Complex and the other actions/operations noted above, the Agencies must conduct a regional air-transport analysis to determine the long-range (as well as short-range) potential for, and impacts from, emissions and particulate transport.

5. The Agencies must assess the mine owner and operator's history of compliance with other applicable state and federal regulations.

This must include compliance with MSHA regulations and the National Emission Standards for Radon Emissions From Underground Uranium Mines (40 CFR Part 61, Subpart B). Denison has received a number of citations for health and safety violations from MSHA[7] and received a Notice of Violation from the Environmental Protection Agency (EPA) in 2010. See Exhibit B.

These citations demonstrate that the company is in need of closer scrutiny and attention; additional monitoring and sampling, including off-site should be required to ensure compliance with existing rules.

6. The Agencies must evaluate the impacts of the mining operation on the wildlife in the area, with particular attention to the impacts on the food chain from the releases of chemicals and radioactive particles into the air, water, and soils in the La Sal area.

7. The Agencies must assess the impacts of the extreme noise from the radon vents. Some of the mine vents create a very loud noise that is heard for over a mile. This impacts the town of La Sal and public lands in the vicinity of the vents and local wildlife.

8. The Agencies must assess the environmental impacts La Sal Mines Complex from the time that the mines commenced operation in the 1970s.

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[7] http://www.msha.gov/drs/drshome.htm

This would include an analysis of the land cleared for the mines, radon vents, exploration drilling, access roads, electrical lines, and transformer stations. There is a maze of cleared strips in the mine complex area from current and historic mining operations, as well as waste rock piles. These are clearly evident from aerial photographs. The 1981 EAs provide little information with respect the extensive impacts to the surrounding area from the mine operations.

9. The Agencies must assess the cumulative impacts from the mining and milling of uranium and other minerals in the La Sal, Lisbon Valley, and nearby Colorado area, including historic and expected mining operations.

10. The Agencies must the assess Denison's emergency response planning for their underground operation. This would include an evaluation of the mines' compliance with MSHA emergency response requirements and an evaluation of the impacts on the La Sal community of Denison's reliance on community emergency responders when there are mine accidents and emergencies.

11. The Agencies must evaluate the potential impacts from fire in the area. In 2010 there was a fire in the vicinity of a radon vent.

There is the potential for firefighters to be exposed to radon when responding to a fire in the area. There must be a means to notify the mine operators of an emergency, so that the vent exhaust fans can be shut down to protect emergency workers.

12. The Agencies must assess the impacts of the mining operation with respect to Environmental Justice, not just in the community of La Sal, but also in the community of White Mesa.

There has never been an assessment of the impacts of uranium mining and milling operations in San Juan County, Utah, on the low income and tribal communities. These low-income and tribal communities bear the brunt of impacts from uranium industry operations in San Juan County.

13. The Agencies must assess the impacts of the La Sal mining operation with respect impacts to cultural resources on White Mesa (a site that has been determined to be eligible for the National Register) from the disposition and long-term storage of tailings from the processing of ore from the La Sal mines and other mines on federal lands in San Juan County and elsewhere (including Colorado and Arizona) not just in the community of La Sal, but in the community of White Mesa.

14. Agencies must clearly identify the activities at the mines that were previously approved by the BLM and USFS as part of existing Plans of Operations (POs) and associated amendments of modifications.

The May 8, 1981, PO for Union Carbide's mines in La Sal only discusses exploration

drilling and makes no mention of any mining activities; yet, there are buildings, waste rock piles, portals, and other surface impacts at the former Union Carbide mines that do not appear to be part of any existing PO. The Agencies must clearly state exactly what mining activities and existing surface impacts were included in that 1981 PO and any subsequent amendments or modifications.

15. The Agencies must assess the impacts from the long-term presence of the mine waste rock, ore pads, contaminated soils, and other contaminated materials from the mining operations on the soils, water, air, flora and fauna, and human community.

16. The Agencies must state the water and soil and waste rock clean up standards that will be used for reclamation of the mine sites. If clean-up standards have not been established, then the Agencies must consider standards that 1) are as low as reasonably achievable, 2) at or as close to background, 3) meet or exceed the standards for clean up of soils at uranium mill sites.

17. The Agencies must assess the potential hazard to the public of having waste rocks piles and radon vents readily accessible to the public, with no fencing or warning signs.

18. The Agencies must establish baseline data on the health of the community of La Sal, radiological content of the local area soils, meteorology (including cold-air drainage patterns), radioactivity present in vegetation and wild and domestic animals.

19. The Agencies must assess the current status of all roads and access routes in the vicinity of and/or associated with the La Sal Mines Complex and determine the state of those routes (such as erosion, presence of dead cows, and extent of use), and determine which roads and access routes must be closed off and reclaimed at this time.

20. The Agencies must determine the actual amount of radon that is being received at relevant off-site locations (receptor points). This would include conducting off-site radon monitoring and measuring indoor radon at the public facilities near the mine sites; that is, the La Sal Elementary School, Community Center, and Post Office. It would also include offering free indoor radon testing at any home the vicinity of the mining operations.

21. The Agencies must evaluate the impacts and risks to the community due to the toxicity of uranium.

22. The Agencies must assess the cumulative potential for the facilities and activities at the La Sal Mines Complex to result in unnecessary or undue degradation of the public lands and resources.

23. The Agencies must require an independent analysis of the risks associated with the presence of arsenic in the La Sal Mines Complex waste rock piles by a person or persons shown to be qualified to make that analysis.

24. The Agencies must analyze fully the cumulative impacts of the La Sal Mines Complex on the ecology of the whole La Sal area, not just bits and pieces of the environment.

25. The agencies must assess the impacts from climate change related to this project over the life of the proposal.

26. The Agencies must fully characterize the underground environment in the area of the proposed mine complex expansion. There is a lack of information about the hydrogeology in the project proposal; the agencies and the public cannot determine whether aquifers will be protected.

27. The Agencies should require monitoring wells around the perimeter of the mine complex to determine the hydraulic gradient of the regional and perched groundwater.

28. The Agencies must assess and document the past compliance with the Surface Management requirements in 43 C.F.R. 3809420 for the La Sal Mines Complex; for example: concurrent reclamation, mitigation, and compliance with other laws.

B. Scoping Comments on Specific Areas of Plan of Operations Amendment

1. Section 1 — Introduction, Compilation of previously approved activities into one BLM/USFS Plan of Operations (page 1-1):

   a. The Agencies must describe, with specificity and particularity, exactly which mining activities and surface disturbances were approved, based on existing POOs, amendments, and modifications.

   b. The Agencies must describe mining activities and existing surface disturbances that are currently taking place that have not been included in previous POOs or modifications.

2. Section 1.4 — Surface Disturbance (page 1-7):

   a. The Agencies must determine the extent of surface disturbance of the La Sal Complex from the beginning of mining activities in the 1960s or '70s.

   b. The Agencies must determine the status of the reclamation for areas that were previously disturbed and are no longer in use, particularly those areas that were cleared for road access and exploratory drilling.

   c. The Agencies must analyze the reclamation process in these areas over time; determine the extent of erosion; and provide a clear picture of how long it will take for previously disturbed areas to be fully reclaimed.

d. The Agencies must analyze the cumulative impacts on flora and fauna from the entire surface disturbance from uranium mining that has taken place in the La Sal area since the 1950s. This would include the impacts to Polar Mesa, which was included in the 1981 POO and EA.

e. The Agencies must assess the presence of invasive plant species in areas that have been impacted by current and past mining operations.

3. Section 1.3. 4. — Compliance with existing regulations (page 1-8):

a. The Agencies must determine whether existing mining activities comply with applicable environmental laws and regulations, and employ current procedures, methods and standards for mining and environmental protection.

4. Section 3.1. — Amendment of Surface Facilities at Pandora (page 3-1):

a. The Agencies must assess the existing height of the Pandora waste rock pile and determine whether there are potential adverse impacts from maintaining specific heights and slopes for the expanded waste rock pile.

b. The Agencies must consider whether to establish a specific height and a slope that cannot be exceeded for future mine development.

c. The Agencies must assess the current erosion at the waste rock areas.

5. Section 3.1.3 — Rock Characterization and Handling Plans (page 3-4)

a. The Agencies must assess the radiological and geochemical constituents of all of the waste rock dumps, not just the Pandora site.

b. The Agencies must assess the background radiological and chemical characteristics in the area that will be impacted by the expansion of the Pandora waste rock area.

c. The Agencies must assess the current impacts of the Pandora waste rock on soils, sediments, and groundwater in the vicinity of the waste rock area through a sampling and analysis program designed to detect leachate from the pile. The Agencies cannot rely solely on laboratory analysis of the potential for the waste rock pile to impact the soils and water.

d. The Agencies must take a hard look at conditions as they exist today as part of the evaluation of the potential of the Pandora waste rock dump to impact the environment and to address cumulative impacts.

e. The Agencies must assess the current impacts of the Beaver Shaft, La Sal, and Snowball waste rock on soils, sediments, and groundwater in the vicinity of the waste rock areas through a sampling and analysis program designed to detect leachate from the piles.

f. The Agencies must take a hard look at conditions as they exist today as part of the evaluation of the potential of the Beaver Shaft, La Sal, and Snowball waste rock dumps to impact the environment and to address cumulative impacts.

g. The Agencies must assess the impacts of new waste rock being placed on existing dumps at the Beaver Shaft, La Sal, and Snowball Mines.

6. Section 3.1.3.1 — Rock Characterization, Potential to Cause Risks Related to Direct Contact (page 3-5):

a. The Agencies must assess the risks associated with the presence of arsenic in all the waste rock dumps prior to site reclamation, based on actual, representative measurements.

b. The Agencies must assess the potential for human and animal intrusion of the dumps and removal of waste rock, assess the potential impacts of such intrusion or removal, and determine how to assure that the waste rock piles will remain intact during the post reclamation period. Material has been removed from one or more La Sal Mines Complex waste rock dumps in the past.

c. The Agencies must assess the hazards associated with the accessibility of the piles prior to reclamation and during periods when the mines are not operational. The waste rock dumps on BLM land at the Beaver Shaft and La Sal Mines are readily accessible to the public. There are no fences, no signs, and nothing to keep the public from the piles or provide warning of any hazards.

d. The Agencies must assess the amount of radon gas, radioactive particulates, and radioactivity that is being emitted from the waste rock piles during mine operation and subsequent to mine reclamation. This would include dispersal of radioactive particulates by wind.

e. The Agencies must assess the risks associated with direct contact to of radon gas, radioactive particulates, and radioactivity that is being emitted from the waste rock piles during mine operation and subsequent to mine reclamation. This would include dispersal of radioactive particulates by wind.

f. The Agencies must assess the risks to wild and domestic animals in the La Sal area associated with exposure to radionuclides from the mining operations, including the post reclamation period (i.e., forever), based on actual measurements of radionuclides within the La Sal Mine Complex. This would

include an evaluation of the impacts of radionuclides entering the food chain.

12. Section 3.1.4 Quality Assurance Plans (page 3-6):

    a. The Agencies must assess how well the mine owner and mine operators have addressed quality assurance in the past. This would include the disclosure in the NEPA document and assessment of the citations, orders, and notices of violation issued by MSHA and EPA.

13. Section 3.2 — Mine Vents and Access Roads (page 3-7): This section states: "Metal diffusers will be installed above the proposed opening for vents where the fan is placed on the surface. . . . Fans are generally placed on the surface to improve mine ventilation and avoid noisy underground conditions to meet MSHA requirements for workers; however, in some cases, fans can be placed underground in areas where workers will not be continuously working." Therefore, Denison does not intend to place diffusers on vents with underground fans. Denison was required to place diffusers on two vents that were approved by the USFS in 2009. Denison committed to place a diffuser that was constructed on BLM land in December 2009, but changed its mind and, apparently, has not placed a diffuser on Vent 3-09 (Vent #12; 4014-6-29-25).

    a. The Agencies must compare and analyze the diffusion of radon into the atmosphere from vents with no diffuser with those with a diffuser. One of the reasons for placing a diffuser is that the height of the emission of underground radon affects the ability of the radon to disperse into the atmosphere.

    b. The Agencies must assess the potential hazards associated with of having vents at ground level.

    c. The Agencies must compare and analyze the diffusion of radon into the atmosphere from vents with diffusers of different heights. Currently, diffusers of different heights are in place at the vents. The Agencies must conduct the analysis to determine the appropriate height of diffusers in order to optimize the diffusion of radon to the atmosphere.

14. Section 3.2 — Mine Vents and Access Roads (page 3-6 to 3-8):

    a. The Agencies must assess the impacts and risks from the emission of radon measured in vicinity of the La Sal Mine Complex vent holes, including the uptake of radon progeny by soils, vegetation, and water and the pathway of the radon due to cold air drainage.

    b. The Agencies must assess the impacts resulting from vent hole installation, including destruction of trees and other vegetation, disposal of dead trees and other slash, time it will take to fully reclaim the access roads and mine vents areas

based on data from past reclamation, and impacts from past vent hole construction.

c. The Agencies must explicitly state what the approval process will be for the construction of any new vent holes and how the public will be involved in that approval process.

d. The Agencies must access the impacts of the construction of access roads, including existing and future erosion.

e. The Agencies must provide maps of area that will show access roads that have been or will be reclaimed during mine operation, access roads that will be reclaimed after mine operation, and access roads that will remain open after mine reclamation has been completed.

f. The Agencies must assess the impacts of the extreme noise levels caused by the vent fans on the natural and human habitat.

g. The Agencies must identify the closest residents and locations of community activity that will be exposed to radon from any new vents that would be constructed, including those that will be exposed to radon from vents on private land, and assess the impacts of that radon exposure.

15. Section 3.2 — Mine Vents and Access Roads (page 3-8): In this section Denison requests that BLM and USFS approval of vent holes as part of this proposed POA for the La Sal Mines Complex for Phases 1, 2, and 3. This would be 10 vent holes on BLM land and 14 on USFS land during the next 30-plus years. An additional 13 vent holes would be placed on private land. Only the general location of the vent holes is known at this time.

Comment: The BLM and USFS must not approve these vent holes as part of the proposed POA, for the following reasons:

a. The POA did not contain maps of the proposed vent hole sites or plans for all access roads, as required by 43 C.F.R. § 3809.401(b)(i) and (vii).

b. The BLM and USFS need to evaluate the impacts of vent hole installation on a case-by-case basis and conduct separate NEPA reviews.

c. At this time the BLM, USFS, and the public do not have sufficient information in order to assess the impacts of the installation of these vent holes, because the precise location of the vent holes is not known.

d. Denison has, apparently, not commenced the reclamation of the surface for the two vent holes that were installed in 2009 and 2010. This must be disclosed and

discussed.

e. Denison is currently under a Notice of Violation (NOV) from the EPA because of non-compliance with the Clean Air Act[8] for their radon emissions.

f. The BLM or USFS must not approve radon vents unless Denison is in compliance with all requirements of 40 C.F.R. Part 61, Subparts A and B.

g. The BLM or USFS must not approve radon vents until the Utah Division of Air Quality issues an approval of vent construction, pursuant to 40 C.F.R. § 61.08.

h. The BLM or USFS must not approve radon vents unless it can be shown that the operation of the vents will not result in non-compliance with the radon exposure limit[9] for any point of exposure. That can only be shown when the location of the vents is known and the doses from existing vents at the time of new installation is known and such data can be verified.

i. At this time there are no verifiable data on the exposure of the public to the emission of radon from the La Sal Mines Complex. This is because Denison does not use La Sal meteorological data in the computer codes used to determine the exposure to the nearest receptor points.[10] These points include the La Sal Elementary School, road maintenance shed, and local residences. Also, Denison is using a method to determine radon emissions that has yet to be approved by the EPA and has not shown to be in compliance with the radon standard using a computer code that has been approved for use by Denison.

j. Although the BLM and USFS do not have to approve the installation of the operation of the vents on private land, those vents will contribute to the amount of radon released and dose to the community and must be calculated in cumulative impacts.

k. There has been no confirmatory monitoring of the amount of radon that has been or is being received at the established points of compliance.

l. The contribution of radon from the waste rock piles, stockpiled ore, windblown dust, and other areas of the mine sites to the total doses received in the community have not been calculated.

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[8] 40 C.F.R. Part 61, Subpart B — National Emission Standards for Radon Emissions from Underground Uranium Mines.

[9] 40 C.F.R. § 61.22.

[10] Modeling of Radon Emissions from Denison La Sal Mines, SENES Consultants Ltd., October 30, 2010.
http://www.uraniumwatch.org/lasalmines.ut/senes_lasalmines_subpartB_monthlyrpt.101030.pdf

m. There has been no environmental assessment of the effects of the emission of radon and other radionuclides from the radon vents on the health and safety of the citizens of La Sal and on the flora and fauna of the area.

n. Denison has not conducted vegetation surveys to establish the pre-disturbance vegetation conditions on access routes and vent hole sites.

o. The public should have an opportunity to comment on agency reviews of site-specific exploration drilling proposals.

p. There appears to be an assumption that exhaust vents will be closed or remain non-operational as new vents are installed, so that the total radon emissions will remain about the same. There is no basis for that assumption. The installation and operation of radon exhaust vents are dependent on underground conditions at the mine, and there is no guarantee that radon emissions and radon doses to the nearest receptors will remain about the same over time.

16. Section 3.3 — Exploration Drilling Activities (page 3- 8):

a. The Agencies must define "vegetative cover," "sustainable vegetative cover," "temporary disturbance."

b. The Agencies must assess the cumulative surface disturbance impacts from historic, current, and proposed drilling activities associated with the La Sal Mines Complex (including Polar Mesa).

c. The Agencies must assess the impacts from the disposition of cuttings and possible fluid discharge pits from past exploration drilling operations.

d. The Agencies must assess, based on actual measurements, the success of the reestablishment of "sustainable vegetative cover" over time and the long-term environmental impacts of the removal of extensive amounts of vegetative cover.

e. The Agencies must assess, based on actual measurements, the time it will take to reestablish the vegetative cover that was in place at the drilling and access sites prior to exploration drilling activities.

f. The Agencies must assess, based on actual measurements, the destruction of trees and brush and the ability for trees and bushes to become reestablished. This would include an assessment of the reestablishment of vegetative cover in areas that are quite rocky, where the primary vegetative cover consists of trees.

g. The Agencies must assess, based on actual measurements, the extent of erosion caused by exploration drilling.

h. The Agencies must evaluate, based on actual measurements of past reclamation efforts in similar vegetation, the assumption that it will take two seasons to re-establish sustainable vegetative cover.

17. Section 3.3 — Exploration Drilling Activities (page 3- 8 to 3-10): In this section Denison requests BLM approval of exploration drill holes for the La Sal Mines Complex. Denison proposes approximately 40 holes for Phase 1 and 100 holes for Phase 3 on BLM land and 50 holes for Phase 1, 50 holes for Phase 2, and 30 holes on USFS land. Only the general location of the vent holes is known at this time.

Comment: The BLM and USFS must not approve exploration drilling as part of the proposed POA, for the following reasons:

a. The POA did not contain maps of proposed exploration drilling or plans for all access roads, as required by 43 C.F.R. § 3809.401(b)(i) and (vii).

b. Under NEPA, the Agencies and the public have the right to see exactly where the drill holes and roads will be located (this applies for all stages and especially for the first phase, since Denison should know where the initial drill sites and roads will be located and cannot delay submittal of this information until after the project is approved).

c. The BLM and USFS need to evaluate the impacts of exploration drilling on a case-by-case basis and conduct separate NEPA reviews.

d. The Agencies must oversee the exploration drilling, determine appropriate access roads, evaluate surface disturbance and vegetation removal, determine mitigative measures, and oversee reclamation when the actual locations have been determined.

e. At this time the BLM, USFS, and the public do not have sufficient information in order to assess the impacts of the proposed exploration drilling, because the exact location of the holes is not known.

f.

Denison has not provided sufficient information in the POA for an assessment of the cumulative impacts of historic and recent exploration drilling, which is extensive.

g. A financial bond for specific exploration drilling must be approved as part of the agency reviews.

Denison has not conducted vegetation surveys to establish the pre-disturbance vegetation conditions on access routes and at the proposed exploration drilling locations.

h. The public should have an opportunity to comment on agency reviews of site-specific exploration drilling proposals.

18. Section 4 — Facilities and Activities Approved by Existing Permits:

a. The Agencies must clearly identify those aspects of La Sal Mines Complex facilities and activities that were included in previous Plans of Operations. The specific section of POO, amendment, or modification must be stated and the documents made available as part of the environmental analysis.

b. The Agencies must address the situation regarding the temporary use of areas outside the established Pandora Mine waste rock area for waste rock storage.

c. The Agencies must include an analysis of the cumulative impacts of all facilities and activities at the La Sal Mines Complex, whether or not the facilities and activities have been approved under existing Agency permits.

d. The Agencies must include an analysis of the impacts of exploration drilling associated with the Beaver Shaft, La Sal, and Snowball Mines that was carried out on Polar Mesa as part of the May 1981 POO.

19. Section 4.2.12 — Water System (page 4-11):

a. The Agencies must determine the status of the water rights for the three wells discussed in the water system section. The Agencies must determine Denison is the owner of the water rights, that the water rights have been approved for use in the mining operations, and that the amount of water used by Denison is in accordance with the amount of water that was appropriated. The State Engineer has approved the well near the Pandora Mine (Water Right 05-3313) for use by Denison Mines; the status of the other wells is unclear.

20. Section 4.2.14 — Solid Waste Storage (4-11):

a. The Agencies must assess—based on site-specific data—the presence, impacts, and potential hazards associated with the scrap, debris, and other materials scattered about at the La Sal and Snowball Mines, some of the radon vents, and possibly other locations.

b. The Agencies must determine a schedule for a timely clean up of scrap, debris and other extraneous materials at the mines that are unsightly and present a hazard.

c. The Agencies must describe the presence of dead cows next to Beaver Shaft waste rock pile on BLM land and determine the status of the removal of those

cows, possible fines for those who placed the dead animals on public lands, and steps that will be taken to prevent unauthorized uses of public land in the vicinity of the La Sal Mines Complex.

21. Section 5.1 — Drill Hole, Vent Shafts, and Water Wells (page 5-1):

    a. The Agencies must assess the potential for contamination from the mines to enter ground and surface water from drill holes, vent shafts, and water wells—based on actual data from similar drill holes, vent shafts and water wells.

    b. The Agencies must assess—based on actual measurements—the adequacy of the plugging of all historic exploration drill holes, vent and vent shafts associated with the La Sal Mines Complex.

22. Section 5.2.1 — Road Reclamation:

    a. The Agencies must access the current condition of all roads and access routes associated with current and historic La Sal Complex operations.

    b. The Agencies must determine whether there are currently roads and access routes that can be reclaimed at this time. There are obviously some routes that are not being used, such as shortcuts near the Pandora #2 Vent (5000 #2-6-29-25) that are not being used and are eroding.[11]

    c. The Agencies must assess the past reclamation efforts for roads and access routes in the La Sal area to determine the long-term impacts from the development of those routes and to determine is additional or different reclamation measures are warranted.

23. Section 5.2.4 — Drainages:

    a. The Agencies must assess the potential for storms larger than a 100-year, 24-hour storm event. Such events have occurred in the area in recent times and can be expected in the future.

    b. The Agencies must assess the potential impacts of greater than 100-year, 24-hour storm events over the long-term, since the waste rock piles will remain in place in perpetuity.

    c. The Agencies must specifically assess—based on data on similar waste rock piles—the potential impacts of storm events on the La Sal Mine waste rock pile that is adjacent to the Pandora/Snowball road.

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[11] Uranium Watch will submit maps and photographs of some of these areas as a supplement to these comments.

d. The Agencies must assess the potential impacts of precipitation events after a wild fire in the La Sal Mountain area.[12] A wildfire can cause the removal of vegetative cover, resulting in a marked increase in runoff.

e. The Agencies must assess possible failure of storm water impoundments and consequent contamination of perched groundwater or other waters in the path of a flood.

24. Section 5.2.5 Development Rock Areas:

a. The Agencies must consider and assess the necessity for the removal of the waste rock pile at the La Sal Mine that is adjacent to the Pandora/Snowball Mine road.

b. The Agencies must assess the ability of the proposed waste rock covers to establish vegetative covers.

c. The Agencies must consider the immediate reclamation of any waste rock areas that will not be used in the future by Denison, such as the Snowball waste rock pile.

25. Section 5.7.1 Potential Radiological Hazards: In this section Denison has proposed a clean up standard for the waste rock piles of a standard dose of 100 millirem above background.

a. The Agencies must determine the radiological backgound for the various mine sites.

b. If the Agencies are going to establish a specific clean-up standard for the waste rock piles and other contaminated materials that are left on site, the establishment of that standard must be the subject of a separate public process.

c. In considering the clean-up standard the Agencies must consider returning the radiological emissions from the site to be as low as reasonably achievable; establishing a standard that limits the actual radioactive releases from the site, rather than a dose standard; consider the current dose standard for the nearest resident from radon emissions from the vent at La Sal Mines Complex (10 mrem per year); consider the standard established by the EPA for the clean up of soils at a decommissioned uranium mill (40 C.F.R. Part 192).[13]

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[12] http://www.blm.gov/ut/st/en/prog/more/Colorado_Plateau/Colorado_Plateau_Native_Plant_Initiative/Wildfire_History_on_the_Colorado_Plateau.html

[13] 40 C.F.R. 192.32(b)(2)(i) and (ii): 5 picocuries per gram (pCi/g), averaged over the first 15 centimeters (cm) below the surface, and 15 pCi/g, averaged over 15 cm thick layers more than 15 cm below the surface.

26. Section 5.7.3 Potential Generation of Problematic Leachate (page 5-7):

    a. The Agencies must assess the mine sites through a sampling program to determine if there is any evidence of leachate from the existing waste rock dumps, ore stockpile areas, or other areas at the mines that could generate leachates.

    b. The Agencies must assess the percolation rate of all of existing La Sal Mine Complex waste rock piles and determine the rate for various depths of the piles. The Agencies cannot rely on percolation data from the Sunday Mine in Colorado.

    c. The Agencies must assess the potential for leachates to enter the environment over the lifetime of the waste rock and other areas of the mine sites where contamination will remain. The rock piles will be there for millions of years, and eventually erosion of the site will occur. This assessment must also include various scenarios caused by climate change and return of periodic ice ages. The climatic conditions and geologic processes that have occurred in the past in the La Sal area can only be expected to reoccur and must be evaluated. The last Ice Age was only 15,000 years ago, not long on the geologic time scale.

    d. The Agencies must assess the potential impacts from human and animal intrusion of the waste rock piles after reclamation has occurred and propose mitigative measures to assure that the piles are kept intact over the long-term.

    e. The Agencies must assess the potential impacts from human and animal intrusion of the waste rock piles after reclamation has occurred and propose mitigative measures to assure that the piles are kept intact over the long-term.

    f. The Agencies must assess—based on measurements of similar topsoil-covered waste rock piles—the ability of topsoil and other materials that may be placed on the waste rock piles to remain intact over the long-term.

27. Section 5.9 — Post Closure Management (page 5-12):

    a. The Agencies must assess the pre-mining vegetative ground cover for all areas that have been impacted by the La Sal Mine Complex. Denison proposes that revegetation achieve 70% of pre-mining vegetation. It does not appear that all areas that have been impacted by mining activities were evaluated for vegetation prior to disturbance. The vegetation survey conducted for the purpose of established pre-mining vegetative ground cover (POA, Appendix J) does not evaluate the original pre-mining ground cover at the mine sites and does not evaluate the pre-mining ground cover of the access roads, exploration drilling

sites, vent holes, and utility pole and transformer sites, and other areas that have been disturbed by the mining operations since the beginning.

b. The Agencies must assess how long it will take to re-establish 70% of pre-mining vegetative cover over all of the areas that have been impacted by the mining operations. This must include an assessment of the re-establishment of the vegetation types that existed before mining disturbance, with an emphasis on trees and shrubs.

c. The Agencies must assess—based on actual measurements in similar vegetation—how long it will take to re-establish 70% of pre-mining native vegetative cover over all of the areas that have been impacted by the mining operations. This must include an assessment of the re-establishment of the vegetation types that existed before mining disturbance, with an emphasis on native trees and shrubs.

28. Section 6 — Monitoring Plan:

a. The Agencies must assess the length of the need for site monitoring and the type of monitoring needed at the sites over the long-term.

b. The Agencies must assess the ability of Denison to make site inspections under all conditions. The assumption that it would be impossible to undertake inspections when there is snow or mud is questionable, given the variety of transportation methods available, including walking, snowmobiles, 4-wheel drive, and ATV.

c. The Agencies ability to conduct confirmatory site inspections and have access to Denison's inspection record. This would include an assessment of the public's access to Denison's site inspections.

d. The Agencies must assess whether the length of time that inspection records remain available is adequate, considering that Agency and DOGM inspections may not occur within a 3-year time frame that Denison intends to maintain some inspection records. This should be based on past dates/rates of Agency and DOGM inspections.

e. The Agencies must consider whether any wildlife mortality must be reported directly to the Agencies, rather than having the information available for Agency inspection on request. It may be a long time before such information is known by the Agencies if it is not reported within a specified time period, such as one week.

f. The Agencies must describe the timeliness of the re-seeding of previously disturbed areas following completion of activities, for example, the most recent exploration drilling and vent hole construction on BLM and USFS land.

g. The Agencies must assess the impacts and need for pesticide/herbicide treatments and consider alternative weed control methods.

29. Section 6.5 Air Quality Monitoring:

a. The Agencies must assess Denison's current compliance with all of the applicable requirements of 40 C.F.R. Part 61, Subparts A and B, and Subpart 60. This would include an assessment of whether Denison has a Quality Assurance program in conjunction with the radionuclide emission measurements, as required by 40 C.F.R. Part 61, Appendix B, Method 114.4; and has conducted tests required under 40 C.F.R. Part 60, Appendix A.

30. Section 6.6 Radiation Monitoring:

a. The Agencies must assess and disclose in the NEPA document the mine operators' compliance with the MSHA standards for exposure to radon and other pollutants in the underground mining operation.

b. The Agencies must determine and disclose all of the underground radiation monitoring requirements for the La Sal Mine Complex. This would include the requirements for the presence and concentrations of radon progeny and the requirement to calculate, record and report individual exposures to concentrations of radon progeny.

31. Section 7 — Interim Management Plan

a. The Agencies must assess the amount of and risks from radon that would be released from the mines during periods of temporary cessation of operations and assess the risks associated with that radon releases, which will not have to be reported under the requirements of 40 C.F.R. Part 61, Subpart B.

b. The Agencies must assess the interim measures for temporary cessation of operation for both short-term mine closure (less than one year) and long-term closure (more than one year). In the past the mines were closed for over 10 years, with few site inspections by the regulatory agencies and a deterioration of site conditions.

c. The Agencies must determine whether a bi-annual monitoring of the mine sites and associated facilities is adequate during temporary closure.

d. The Agencies must assess the potential impacts of temporary closure of the mines under minimal site maintenance and inspection.

32. Section 8 —Reclamation Cost Estimate:

a. The Agencies must evaluate the expected natural and unnatural impacts on the site over the long-term and determine what mitigative measures might be required so that the site is maintained in a safe and secure condition and in compliance with reclamation standards as long as the site has the potential to adversely impact the environment due to site degradation. The Agencies must also determine how those measures will be undertaken and funded.

b. Agencies must consider the need for funding for long-term inspection and maintenance of the site by state and federal agencies after reclamation is complete.

c. The NEPA document must reveal the proposed reclamation financial assurance/bond and explain the reasons the Agencies believe this is sufficient to cover all contingencies.

33. Section 9 — Operational and Baseline Environmental Information, Section 9.1 — Air Quality (page 9-1):

a. The Agencies must identify and characterize the air-borne emissions from the mining operation that have the potential to adversely impact human health and the environment. This would include all particulate and gaseous emissions from the waste rock piles, ore pads, soils, radon vents, etc. This would include diesel fumes, silica, arsenic, hazardous metals and metalloids, radon gas and its short-lived, highly radioactive decay products, uranium, and other uranium progeny.

b. The Agencies must analyze the dispersion of these materials into the environment based on relevant actual measurements.

c. The Agencies must analyze the impacts of potentially adverse air-borne particulates and gaseous releases on human health and the environment.

d. Due to the likelihood of regional transport of air emissions from the La Sal Mines Complex and the other actions/operations noted above, the Agencies must conduct a regional air-transport analysis to determine the long-range (as well as short-range) potential for, and impacts from, emissions and particulate transport. The Agencies must consider the Class I Air Quality status of Arches and Canyonlands National Parks and the possible degradation of regional air quality from mining activities.

e. The Agencies must evaluate and disclose the mine owner and operators' compliance with applicable EPA and Mine Safety and Health Administration standards and regulations in order to assess the extent to which the public, workers, and the environment are protected from the impacts of airborne emissions at the mine, both above and below ground.

34. Section 9.2.1 — Surface Water (page 9-2):

    a. The Agencies must identify and characterize all surface water (including perennial streams, ephemeral streams, irrigation ditches, and irrigation and catchment ponds) that is in the vicinity of the La Sal Mines Complex.

    b. The Agencies must assess the impacts and potential impacts of the mining operations on those watercourses, including cumulative impacts of past, current, and future mining activities, revealing all actual measurements that have been made of impacts on watercourses.

35. Section 9.2.3.2 — Mine Operation Uses (pages 9-3 to 9-4):

    a. The Agencies must determine and discuss whether the water from the Redd Ranch that is being used at the mines has been approved for use by Denison for the La Sal Mines Complex mining operation by the State Engineer.

36. Section 9.2.4 — Potential Water Quality [Effects] of Underground Activities (page 9-4):

    a. The Agencies must assess the radionuclide content of water that migrates underground and is used for dust suppression and other mining activities, based on measurements on comparable sites.

    b. The Agencies must assess the potential for workers to be exposed to and harmed by radionuclides that are present in or may be taken up by underground water that is used for dust suppression, drilling, and other underground mining activities.

37. Section 9.2.5 — Potential Water Quality [Effects] of Surface Activities (page 9-5)

    a. The Agencies must assess the effects on water quality of radioactive and non-radioactive emissions from exhaust vents, drill cutting disposal areas, ore pads and ore stockpile areas, fugitive dust, and erosion from roads and access routes.

38. Section 9.3 — Soil Resources (page 9-6):

    a. The Agencies must assess— based on measurements at comparable sites—the total amount of topsoil required for interim and final site reclamation for each area that must be reclaimed using topsoil.

    b. The Agencies must assess the total amount of topsoil that will be available for interim and final site reclamation.

    c. The Agencies must assess the gap in reclamation soil requirements and soil availability, assess the impacts due to an insufficient amount of topsoil, and

develop mitigative measures— based on data from comparable reclamation sites—to assure that all areas are covered with clean materials to meet reclamation and revegetation standards.

d. The Agencies must assess the soils for their water holding capacity and ability to serve as a growth medium to support the pre-mining vegetation types.

e. The Agencies must assess and describe the most recent road access, exploration drilling, and vent hole installation activities to determine whether the topsoil was actually saved for future reclamation.

39. Section 9.4 — Vegetation Resources (page 9-10):

- The Agencies must assess the historic and current disturbance to the major vegetation communities in the vicinity of the La Sal Mines Complex: Colorado Plateau Piñon-Juniper Woodland, Rocky Mountain Gambel Oak-Mixed Montane Shrubland, Southern Rocky Mountain Ponderosa Pine Woodland, and Inter-Mountain Basins Big Sagebrush Shrubland.

- The Agencies must determine the status of the re-establishment of the pre-mining vegetation types in current and historically disturbed areas in the La Sal Mountain area.

- The Agencies must evaluate the potential for the re-establishment of the major vegetation communities in the areas they existed prior to mining disturbance and removal due to La Sal Mines Complex operations and other historic mining activities in the La Sal Mountain area.

40. Section 9.5.5 — Protection of Wildlife Habitat and Endangered Species (page 9-13)

a. The Agencies must assess the impacts to wildlife habitat due to the cumulative impacts from the removal of vegetation, particularly trees and shrubs, to facilitate the La Sal Complex mining operations. This would include an assessment of the ability of the areas that have been impacted to reestablish the vegetation types that existed prior to disturbance or removal.

b. The Agencies must assess—based on scientific literature—the impacts to wildlife habitat from the noise pollution associated with the mine operations, including vent fan operation.

c. The Agencies must assess—based on measurements of wildlife in comparable uranium mine sites—the impacts of radioactive materials to bears and other animals that feed on dead cows in the vicinity of the Beaver Shaft waste rock pile or in the vicinity of other surface facilities.

41. Section 9.5.6 — Screening Level Evaluation of Potential Direct Contact Risks to Wildlife (page

a. The Agencies must evaluate—based on measurements of wildlife in the scientific literature—the potential risks to wildlife from ingestion of vegetation that has taken up radionuclides from the mining operations, including areas in the vicinity of the mine vents and exploration drilling sites.

b. The Agencies must assess—based on measurements of wildlife in the scientific literature—the potential risks to wildlife from fugitive dust and silica particles from the ore.

c. The Agencies must assess—based on measurements of wildlife in the scientific literature—the potential risks to wildlife from the release of radioactive and non-radioactive particulates from the vents.

d. The BLM must undertake consultations with the U.S. Fish and Wildlife Service to evaluate and prevent direct, indirect, and cumulative impacts of the mining operations from harming species listed as threatened and endangered under the endangered species act.

42. Section 9.9 — Worker Health and Safety (page 9-20 to 9-22)

a. The POA claims that "waste rock piles from mining are shielded by ground cover whenever possible and, where necessary, by wetting to control dust." The Agencies must assess the amount of ground cover currently on the waste rock piles and the ability of the mine operators to control fugitive dust from the piles.

b. The Agencies assess—based on actual measurements—the past history of dust control from the waste rock piles and the historic effectiveness of the ground cover and other dust control measures.

c. As discussed elsewhere, the Agencies must disclose and discuss the mine operators' compliance with the MSHA regulations since 2006.

d. The Agencies must assess the possibility for workers to spread radioactive contamination into the La Sal community. In at least one instance, a worker that had not showered prior to leaving the mine after work was observed in a public place in La Sal. Failure to shower was a health hazard to both the worker and members of the public that may come into contact with the worker.

43. Section 9.10 — Transportation

a. The Agencies must assess the cumulative impacts of the transportation of the ore to the White Mesa Uranium Mill, including the transportation of ore from other

uranium mines to the White Mesa Mill. This would include currently operating mines (Arizona 1 and Daneros), mines on standby (Rim, Tony M, and Sunday Mines), and reasonably foreseeable mining operations (Redd Block IV, Canyon (Arizona), Carnotite, Green River #9, Marcy-Look, and Blue Jay). This would include the transportation of alternate feed, chemicals, and other materials to the White Mesa Mill and the transportation of the processed ore from the Mill.

b. The Agencies must assess the cumulative impacts of the possible transportation of ore from mines in La Sal and Lisbon Valley to a proposed uranium mill in the Paradox Valley, Colorado, and the Ticaboo Mill in Garfield County, Utah.

c. The Agencies must assess the impacts and risks associated with the release of radionuclides as a result of ore loading operations at the mine sites.

d. The Agencies must assess the impacts of fugitive dust from uranium ore haul trucks along transportation routes. A United States Geological Survey (USGS) study found elevated levels of uranium in soils near roads used for hauling ore from the Pigeon and Hermit mines north of the Grand Canyon. Please reference: http://pubs.usgs.gov/sir/2010/5025/

e. A monitoring program is necessary for fine dust particles and uranium contamination along haul routes in both urban and rural areas. The Agencies should require that trucks hauling uranium ore be covered by a solid lid with sealed seams and the exterior of transport vehicles should be washed down before leaving the mine site.

f. The Agencies must assess risks in the event of an accident and provide plans for timely response and cleanup in the event of a hazardous spill.

III. COMMENTS ON PLAN OF OPERATIONS AMENDMENT

Below are comments on the Plan of Operations Amendment, Denison Mines (USA) Corp., La Sal Mines Complex, San Juan County, Utah; Prepared by: CDM Inc. for Denison Mines Corporation; November 2010. The comments (bulleted) are focused primarily on the major deficiencies in the Plan of Operations Amendment. There may be some redundancy, as portions of the POA overlap.

As will be shown below, the POA lacks essential data and information and does not provide a basis for determining the cumulative environmental impacts of the proposed expansion of the La Sal Mines Complex.

1. Section 1.4 — Surface Disturbance (page 1-5):

- The statements regarding Surface Disturbance assume that disturbed land can be reclaimed in 2 years. This is a gross underestimation of the time it will take for land that has been disturbed and will be disturbed my mining activities to return to the condition prior to disturbance. Denison underestimates extent of the disturbance and fails to estimate the length of time that it will take for land to be fully reclaimed.

2. Section 2.4 — Other Federal, State, or Local Authorizations (page 2-4):

- This section should have included more specific information regarding other federal, state, or local authorizations. This would include date of permit and exactly what was authorized.

3. Section 3.1.3 — Rock Characterization and Handling Plans (page 3-4):

- The assessment of rock in the vicinity of the Pandora Mine was inadequate. Soil, sediment, and groundwater samples should have been taken from below the rock pile and in drainage courses around waste rock pile in order to determine past transport of leachates from the waste rock dumps.

4. Section 3.1.3 — Rock Characterization and Handling Plans (page 3-4); This section states that detailed geochemical characterization was not conducted at other DRAs, because those facilities will be operated in accordance with existing Plans of Operations.

- The POA should have referenced the Plans of Operations (POs) Denison is referring to, the specific facilities that are part of these existing POs, and what is being operated in accordance with which specific statements in existing POs. The 1981 PO that, apparently, addresses the waste rock piles associated Beaver Shaft, La Sal, and Snowball on BLM land makes no mention of such waste rock piles or other surface impacts and contains no information regarding the characteristics or placement of those waste rock piles.

5. Section 3.1.3 states that detailed geochemical characterization was not conducted at other DRAs.

- The POA should have included detailed characterization of all waste rock dumps. Information regarding the chemical and radiological characteristics of all waste rock piles is essential for the Agencies to determine the impacts from those piles.

6. Section 3.1.3 states, "all piles will be handled the same during operation and reclamation."

- The POA should have described how all piles would be handled during operation, including the plans that the mine operators have to place additional material on existing dumps at the La Sal and Beaver Shaft mines.

7. Section 3.1.3.1 — Rock Characterization (page 3-4): This section lists potential issues associated with the waste rock.

- Denison should have conducted a study of the actual leachate flow from the existing waste rock area, rather than just modeling the expected flow. The evaluation of the leachate constituents should have included an evaluation of the presence of uranium, radium, and other radioactive elements.

8. Section 3.1.3.1 — Rock Characterization, Potential to Cause Risks Related to Direct Contact (page 3-5):

- This section fails to mention risks associated with arsenic prior to site reclamation. Waste rock piles have been in place for over 35 years, and are expected to be in place for another 30 years prior to reclamation. These piles are readily accessible to the public intrusion, next to roads, an elementary school, human habitation and human activities, commercial livestock production, and wildlife habitat. Waste rock piles were left essentially unregulated for years while the mines were on stand-by. This could happen in the future, when the mines are closed for periods of time waiting for the price of uranium to increase or for some other reason.

- The POA should have assessed the risks associated with direct contact to radium, radon, and radon progeny during mine operation and subsequent to mine reclamation.

- The POA should have assessed the release of radionuclides as a result of ore storage, wind erosion, and ore dumping and loading operations.

9. Section 3.1.3.2 — Rock Handling (page 3-5).

- This section assumes there will be no problematic leachate. There is little basis for the assumption that only during post-reclamation land uses would waste rock areas present a potential human health risk associated with arsenic. There is also a potential health risk to domestic livestock and local flora and fauna.

10. Section 3.1.3.2 — Rock Handling (page 3-5): This section states that rock that is currently exposed at the waste rock areas will be covered by future development rock placement and, therefore, identification at this time of areas that exceed the site-specific arsenic criterion is not useful to address potential risks that could occur during the post-reclamation period.

- This section should have addressed the current risks and cumulative risks associated with the presence of arsenic in the waste rock areas prior to reclamation. There are existing waste rock dumps at the Beaver Shaft, La Sal,

and Snowball mines, and there is no description of when and how these piles may or may not be covered by future development rock.

11. Section 3.1.4 — Quality Assurance Plans (page 3-6) states: Quality assurance will be conducted during construction of the facilities at the Pandora Mine.

- The mine owners and operators have already shown a certain indifference to quality assurance at the mine, as shown in the numerous notices of violation from MSHA[14], the EPA NOV, extensive impacts from the creation of access roads caused by leaving slash in place along road way on BLM land, and failure to follow through with commitments made in requests for approval of radon vent construction and exploration drilling.

12. Section 3.2 — Mine Vents and Access Roads (page 3-6): This section states: "Worker health and safety at the La Sal Mines Complex depends on the installation of vent holes, which are vertical shafts that provide for either inflow or discharge of air."

- The POA should have specifically stated here that the vent holes emit radon, a hazardous air pollutant, which is regulated pursuant to 40 C.F.R. Part 61, Subpart B.

- The POA should have provided data on the emission of radon-decay products, other radionuclide particulates, and other potential hazardous substances from the mine vents.

13. Section 3.2 — Mine Vents and Access Roads (page 3-8): This section states, "The installation of these facilities would be in support of the extraction of uranium ore from BLM unpatented mining claims in accordance and compliance with applicable federal and state rules and regulations."

- POA should have specifically stated the federal and state rules and regulations that apply to the installation and operation of mine vents and how they will comply with such regulations.

14. Section 3.2 — Mine Vents and Access Roads (page 3-8): In this section Denison requests BLM and USFS approval of a total of 24 vent holes on BLM and USFS land over the next 30 years. That POA states that "Denison proposes that the specific locations for these facilities and the location of associated access roads be subject to BLM and USFS review prior to construction" and that "this requirement be included in the POA as a Condition of Approval."

- Vent hole installation should be the subject of specific amendments to the POO and an environmental assessment, including the opportunity for public comment.

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[14] http://www.msha.gov/drs/drshome.htm

There should be no blanket approval of vent hole installation, because there is a need for the BLM and USFS to evaluate the impacts on a case-by-case basis.

15. Section 3.3 — Exploration Drilling Activities (page 3-8): Denison proposes the drilling of up to 270 drill holes on BLM and USFS land over the next 30 years as part of Phase 1, 2, and 3.

- The POA should have substantiated the assumption that it will take two seasons to re-establish sustainable vegetative cover.

- The POA assumes that "the total surface disturbance is temporary and reclaimed on an ongoing basis." Then POA fails to mention that there are areas on both BLM and USFS land where exploration drilling has occurred that have been re-impacted by additional exploration drilling.

16. Section 3.3 — Exploration Drilling Activities (page 3-10): This states, "Accordingly, Denison requests that BLM and USFS approve the planned exploration drilling in the phases described above, and that a Condition of Approval to the POA be established that would provide for BLM and USFS review of specific locations for exploration drill holes and access trails and/or roads prior to commencement of the activities."

- Exploration drilling should be the subject of specific amendments to the PO and an environmental assessment, including the opportunity for public comment. There should be no blanket approval of exploration drilling, because there is a need for the BLM and USFS to evaluate the impacts on a case-by-case basis. The Agencies must oversee the exploration drilling, determine appropriate access roads, evaluate surface disturbance and vegetation removal, determine mitigative measures, and oversee reclamation when the actual locations have been determined. A financial bond for specific exploration drilling must also be approved as part of the agency reviews.

17. Section 4 — Facilities and Activities Approved by Existing Permits (page 4-1): The POA discusses the facilities and activities previously approved by the BLM and USFS and refers to existing POs and "minor improvements."

- The POA does not include the PO for the La Sal, Snowball, and Beaver Shaft Mines; does not include an EA for the La Sal and Snowball Mines, and does not include all BLM and USFS approvals since the mines commenced operation. Those approval documents should be included in the POA.

18. Section 4 — Facilities and Activities Approved by Existing Permits (page 4-1): This section states, "The following sections provide a compilation of previously approved facilities and activities at the La Sal Mines Complex." The previously approved facilities and activities include: equipment, numerous surface facilities, development rock areas,

ore stockpile areas, topsoil stockpile areas, surface drainage control structures, fuel and oil storage areas, mine offices, maintenance shops and warehouses, designated parking and storage yards, mine access roads, electrical power lines and stations, air compressor stations, water system, septic system, solid waste storage, vent holes and access roads, storm water management plans, and spill prevention plans.

- Except for activities approved by other agencies, the POA does not state how and when these facilities were previously approved by the BLM and USFS. The approvals of these facilities and operations should be documented in the POA.

- This section should state the specific POO and approvals that apply to the various facilities and activities at the La Sal Mines Complex.

19. Section 4.2.1 — Development Rock Areas, Pandora Mine (page 4-4): This section states that development rock is currently placed on top of the development rock area (DRA) along a temporary access road via mine trucks.

- The POA should discuss the situation regarding the temporary use of areas outside the established Pandora Mine waste rock area for waste rock storage. According to the August 2010 BLM Inspection Report, that Pandora Mine waste rock pile is too high to receive additional waste rock from the mine and temporary placement of the rock in another area was suggested.

20. Section 4.2.1 — Development Rock Areas, La Sal Mine (page 4-4): This section states: "The La Sal Mine DRAs are located on lands subject to BLM regulatory jurisdiction. Denison intends to continue using these facilitates in the future in accordance with the currently approved Plan of Operations. Additional stockpiled development rock will stay within previously proposed disturbed areas."

- The POA should have explained what "in accordance with the currently approved Plan of Operations" means.

- The POA should have referenced the PO that includes the current waste rock areas at the La Sal Mine. The POA should state the provisions in the PO that apply to the La Sal Mine waste rock dumps. Any POs, EAs, and BLM approvals associated with the development rock areas at the La Sal Mine should be included in the POA.

- Any activities and surface development at the La Sal Mines Complex that are not explicitly part of a previous POs and EA must be part of the POA and discussed fully in that document.

21. Section 4.2.1 — Development Rock Areas, Snowball Mine (page 4-4) discusses the Snowball Mine waste rock pile. There does not appear to be any currently approved PO that includes the Snowball Mine facility and the Snowball development rock area,

- The POA should have referenced the PO that includes the current waste rock area at the Snowball Mine. Any POs, EAs, and BLM approvals associated with the development rock areas at the Snowball Mine should be included in the POA.

- Any activities and surface development at the Snowball Mine that are not explicitly part of a previous PO and EA must be part of the POA and discussed fully in that document.

22. Section 4.2.1 — Development Rock Areas, Beaver Shaft (page 4-5): This section states: "Denison intends to continue using these [Beaver Shaft] facilities in the future in accordance with the currently approved Plan of Operations. Additional stockpiled development rock will stay within previously proposed disturbed areas."

- The POA should have referenced the PO that includes the current waste rock area at the Beaver Shaft Mine. If there is such a PO associated with the development rock areas at the La Sal Mine, that document should be included in the POA.

- Any activities and surface development at the Snowball Mine that are not explicitly part of a previous PO must be part of the POA and discussed fully in that document.

23. Section 4.2.12 — Water System (page 4-11): This section discusses three wells in the vicinity of the mine sites that are being used for mining operations: one near the Pandora, one near the 1050 vent, and one at the Beaver Shaft.

- The POA should have included the water right numbers associated with the three wells and demonstrate that Denison is the owner of the water rights, that the water rights have been approved for use in the mining operations, and that the amount of water used by Denison is in accordance with the amount of water that was appropriated. The State Engineer has approved the well near the Pandora (Water Right 05-3313) for use by Denison Mines; the status of the other wells is unclear.

24. Section 4.2.14 — Solid Waste Storage (4-11):

- The POA should have discussed what is to be done to clean up the large amount of scrap, debris, and other materials scattered about at the La Sal and Snowball Mines, some of the radon vents, and possibly at the other mines. Some of these areas are readily accessible to the public, and the scrap and debris is unsightly and may present a public hazard.

- The POA should have discussed the dead cow storage and/or disposal area next to Beaver Shaft waste rock pile on BLM land.

25. Section 4.6.2 — Denison Groundwater Use for Mine Operations (page 4-8):

- This section should mention Water Right 05-3313, which was approved by the State Engineer, Utah Division of Water Rights on April 27, 2007, and any other water rights being used by Denison for mining operations.

26. Section 5 — Reclamation Plan, Section 5.1 — Drill Hole, Vent Shafts, and Water Wells (page 5-1): This section states: "Holes that encounter significant nonartesian groundwater will be plugged by placing a 50 ft cement plug immediately above and below the aquifer(s) or filling the hole from the bottom up with a highgrade bentonite/slurry mixture in accordance with UAC Rule R6474108."

- The POA should be explicit about the amount of water that would be considered "significant nonartesion groundwater."

- The POA should have discussed the plugging of holes that encounter artesian groundwater.

27. Section 5.2.1 — Road Reclamation (page 5-2):

- The POA should have included detailed maps of the roads, access routes, and short cuts that will be reclaimed.

- The POA should have included information on the condition and use of those routes and a determination of whether immediate reclamation or erosion prevention is warranted.

28. Section 5.2.4 — Drainages (page 5-3):

- The POA should have included an assessment of the potential for there to be storm and runoff events larger than a 110-year, 24-hour event and assess the potential for runoff events as a result of fire in the natural environment.

- The POA should have included an assessment of the ability of the drainage channels to handle storm events larger than a 110-year, 24-hour event.

29. Section 5.8 — Removal or Stabilization of Buildings, Structures, and Support Facilities (page 5-12):

- The POA should have included information on the decontamination and disposal or disposition of buildings, structure, equipment that has radiological contamination.

30. Section 5.7.1 — Potential Radiological Hazards (page 5-6): In this section, Denison has proposed a radiological standard for reclamation of the waste rock areas.

- Any decision of the radiological standard for reclamation of the waste rock areas, ore pads, and other areas contaminated by radionuclides from the mining operations should be the subject of a separate decision-making process by the Agencies, with ample opportunity for public input and discussion.

31. Section 5.9 — Post-Closure Management (page 5-12)

- The POA should have included a post-closure management plan for long-term monitoring and maintenance. The wastes from the mining operation, particularly the waste rock piles, will remain in place in perpetuity and plans to address erosion, intrusion, and other degradation of the piles must be included as part of post-closure management.

- The POA should have included a detailed assessment of pre-mining vegetative ground cover for all areas that have been or expected to be disturbed by La Sal Mines Complex surface mining activities.

- Denison should commit to yearly spring and fall assessments of reclamation progress, rather than a 2-year assessment period.

32. Section 6.5 — Air Quality Monitoring (page 6-3):

- The POA should have included a full discussion of Denison's current compliance with all of the applicable the requirements of 40 C.F.R. Part 61, Subparts A and B, and Subpart 60.

33. Section 6.6 — Radiation Monitoring (page 6-4):

- The POA should have provided information and documentation regarding the mine operators' compliance with the MSHA standards for exposure to radon and other pollutants in the underground mining operation.

- POA should have included information regarding all of the radiation monitoring requirements for the La Sal Mine Complex. This would include the requirements for weekly monitoring the presence and concentrations of radon progeny and the requirement to calculate, record and report individual exposures to concentrations of radon progeny.

34. Section 7— Interim Management Plan (page 7-1):

- The POA should have included both short-term (less than one year) and long-term (more than one year, more than 5-year, more than 10-year) interim management provisions. In the past the mine sites deteriorated because of mine owner neglect.

35. Section 8 — Reclamation Cost Estimate (page 8-1):

- This section should have included a list of the proposed reclamation activities at the Beaver Shaft, La Sal, and Snowball mines. The POA did not include an Agency document that describes, in a comprehensive manner, the reclamation activities that will be required for those sites.

- The reclamation cost estimates do not appear to cover the costs of reclamation of access roads that will be closed as part of the reclamation of the La Sal Complex.

- This section should have included an estimate of costs from long-term monitoring and maintenance of the site in perpetuity. It is unreasonable to assume that the mine sites will not require post-closure maintenance over the next millennia to protect public health and safety and the environment. The question is whether that monitoring and maintenance will be at public or private expense.

36. Section 9 — Operational and Baseline Environmental Information, Section 9.1 Air Quality (page 9-1): The POA states: "All fugitive emissions, including airborne particulates, are regulated by permits issued by the UDEQ's Air Quality Division."

- This statement in the POA is misleading. Except for radon from the mine portals and mine vents, the Division of Air Quality does not regulate the gaseous and particulate radioactive emissions from the radon vents, waste rock piles, ore pads, soils, and other aspects of the mining operation are not specifically regulated by the.

37. Section 9.1 — Air Quality (page 9-1):

- The POA should have identified all potential adverse air-borne emissions from the mining operation.

- The POA should have described all radioactive particulate and gaseous emissions from the waste rock piles, ore pads, wind erosion, and ore dumping and loading operations. This would include including uranium and uranium progeny; specifically, radon gas and its short-lived, highly radioactive decay products.

- The POA should have characterized the radioactive and non-radioactive particulates emitted from the mine vents.

38. Section 9.2.1 Surface Water (page 9-2): This section states: "No perennial surface water is present in the direct vicinity of the La Sal Mines Complex, and drainages in the area are ephemeral (i.e. they flow seasonally or in response to occasional intense precipitation events)."

- The June 1981 Environmental Assessment of Union Carbide's proposed Mining

Activities (UT-060-GR-1-29)[15] states: "In the Deer Creek area several streams, at least two perennial, flow off the La Sal Mts., through the Union Carbide bloc of mining claims."

- There is at least one irrigation ditch in the vicinity of the La Sal Mines Complex. The ditch flows south from the La Sal Mountains, through Section 36, T 28 S, R 24 E, northwest of Vents 500 and 2200. This water likely flows on the surface for a number of months of the year and is used for agricultural purposes.

39. Section 9.2.3.2 Mine Operation Uses (pages 9-3 to 9-4): This section states that water from the Redd Ranch is being used for mining operations at the Beaver Shaft and Pandora Mines.

- The POA should have provided the water right numbers associated with the use of Redd Ranch water and demonstrate that those water rights have been approved for use by Denison for the La Sal Mines Complex mining operation.

40. Section 9.2.4 — Potential Water Quality [Effects] of Underground Activities (page 9-4): This sections states, "Underground mining involves a number of activities that could potentially affect groundwater quality." The POA concludes: "Potential leakage from the overlying aquifers into the underground mine workings is limited by proper sealing of vent shafts and drill holes in the area."

- There is no information that documents that each of the historic La Sal Mines Complex drill holes were examined for proper sealing. Drill holes that have not been properly sealed can provide a source of leakage from the overlying aquifers into the mine.

- The POA should have assessed the potential for water from overlying aquifers to flow into the drill holes below the seal. The potential for such leakage has not been considered in the POA.

- The POA should have assessed the potential for leakage from vent holes that have not been cased.

- The POA should contain a schedule for the sealing of at least two (2) shafts next to existing vents (Vent 900 and Vent 2300 #2). These shafts are not being used as vents, have not been sealed, and provide a conduit for water into the mines.

- The POA should contain a schedule for the sealing of the 26 existing vents and the 5 vents that have been proposed, but have yet to be drilled. These vents and vents that will be drilled in the future will be open for decades prior to being reclaimed and sealed.

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[15] POA, Appendix B.

- The POA should have considered the potential leakage from the vent holes during the lifetime of their operation, prior to sealing.

41. Section 9.2.5 — Potential Water Quality [Effects] of Surface Activities (page 9-5):

- This section should have considered the potential water quality effects from ore stored at the mines, ore pads, contaminated soils, vents that emit radionuclides and other contaminants, windblown dust, and roads and access routes.

42. Section 9.3 — Soil Resources (page 9-6):

- The POA should have provided information on the total soil requirements for the reclamation of each surface facility and the amount of soil that will be available when reclamation of those areas commences.

- The POA should have provided information on how any gaps in topsoil availability will be addressed.

- The POA should have assessed the ability of the proposed topsoil covers to re-establish 70% of the pre-mining vegetative cover.

43. Section 9.4 — Vegetation Resources (page 9-10):

- The POA should have documented and assessed the historic and current disturbance to the major vegetation communities in the vicinity of the La Sal Mines Complex: Colorado Plateau Piñon-Juniper Woodland, Rocky Mountain Gambel Oak-Mixed Montane Shrubland, Southern Rocky Mountain Ponderosa Pine Woodland, and Inter-Mountain Basins Big Sagebrush Shrubland.

- The POA should have addressed the re-establishment of the major vegetation communities in areas that have been disturbed by the La Sal Mines Complex operations and other historic mining activities in the La Sal Mountain area.

44. Section 9.9 — Worker Health and Safety

- The POA should have included complete data and information regarding the actual treats to and impacts to worker health and safety at the La Sal Mines Complex. This should include specific information on MSHA health and safety violations, mine accidents, a mine fatality, orders, compliance actions, and on-going training and actions by the mine owners and operators to improve health and safety of the workers.

Appendix F — Evaluation of Development Rock Piles at the La Sal Mines Complex

45. Section 1.3.2 Permit Status (page 1-2): This section states: "Permitted DRA's are present at the Pandora Mine, Snowball Mine, La Sal Mine, and Beaver Shaft Mine area. . . . Existing BLM POs for these facilities consist of Plan of Operation UT–060-GR-1-25, which applies to the Pandora Mine, and Plan of Operation UTU-060-GR-1-29, which applies to the portions of the Snowball, La Sal and Beaver Shaft operations that affect federal lands administered by BLM."

- The PO associated with the Snowball, La Sal, and Beaver Shaft Mines (M/037/026) was submitted to the BLM in May 8, 1981. The PO Operation Description is for exploration drilling (approximately 130 holes) and makes no mention of any development rock areas on BLM land for those mines or other aspects of the mining operation on BLM land. It is not known whether such exploration drilling took place on Deer Creek Group and Polar Mesa Group claims. The brief Reclamation Plan in the PO does include reclamation of immediate and future surface disturbances, including roads, mine ventilation sites, mine waste dumps, and drill pads. There are no maps and no description of the location, names, or what is considered aspects of "immediate" surface disturbances.

- The June 12, 1981, BLM EA that was responsive to the May PO, under Proposed Action and Alternatives, only considers the proposed exploration drilling and a proposal by the operator for one addition to the existing production complex, a waste dump of about 2 acres near the Beaver Shaft to be know as the Beaver dump, in SE ¼ of Sec. 35, T 28 S, R 24 E. The proposal for the Beaver dump was not included in the May 8, 1981, PO.

- The May 1981 PO makes no mention of any of the waste dumps (development rock areas) on BLM land currently associated with the Beaver Shaft, La Sal, and Snowball Mines. Therefore, it is unclear what POs were submitted to the BLM that included the Snowball, La Sal, and Beaver Shaft Mines waste rock dumps, the ore pads, structures, shafts, ventilation holes, exploration drilling, and other facilities and surface impacts associated with those mining operations. As a result, it is not known what aspects of the activities at these mines were permitted and approved by the BLM in the past.

- If the POA is considered to be a new modification of an existing PO, it is important to know what exactly are the terms and conditions of any existing POs and subsequent modifications. Any current mining activities and surface impacts that were not included in any previously submitted written PO should be considered in the current POA. This would include an evaluation of the presence of deleterious material at the Beaver Shaft, La Sal, and Snowball Mines and a determination of the applicability of the current performance standards in 43 C.F.R. § 3809.433.

46. Section 3.3 Potential Leachate Migration Risks (page 3-2): This section evaluates the risks of effects from leachate from the Pandora Mine waste dump using laboratory leaching tests and determining the potential for percolation using a flow model. The data on the physical and hydrological characteristics of the waste dump rock did not come from the Pandora Mine.

- Appendix F relies solely on laboratory testing and modeling to determine potential percolation of leachate from the waste rock dumps. The POA lacks data from soil samples in the vicinity of existing dumps.

- The POA should have included results from actual sampling from the existing waste rock dump areas in order to provide additional essential information regarding the potential for leachate to percolate from the dumps that have been in place for decades.

- The model should have used data on the physical and hydrological characteristics of the waste rock from the Pandora Mine and other La Sal Mines waste rock dumps, rather than relying on data from the Sunday Mine in Colorado.

47. Section 3.4 Potential Direct Contact Risks (page 3-5, 3-6): This section states: "It should be noted that direct contact risks to miners are not evaluated as part of this assessment because these risks are regulated by the U.S. Mine Safety and Health Administration (MSHA) in accordance with the federal Mine Safety and Health Act of 1977 as amended, and other federal laws and regulations. Denison's mining operations comply with these regulations."

- Based on citations for violations of MSHA regulations since mining commenced at the Pandora Mine (2006) and Beaver Shaft (2009) [16], the above statement is false. The mining operations at the La Sal Complex have not been in compliance with the federal Mine Safety and Health Act of 1977 as amended.

- The POA should have included information regarding the contact risks to miners, because those impacts and risks are an aspect of the mine operations that must be included in an environmental analysis.

48. Appendix F should have included an assessment of potential direct contact risks associated with arsenic and other metals, vanadium, uranium, radium and other uranium progeny, and silica particulates at the Beaver Shaft, La Sal, and Snowball mines.

49. Appendix F should have assessed the risks associated with the emissions from ore storage areas (ore pads), stockpiled ore, vent hole areas, and drill cutting disposal areas.

50. Summary and Conclusions (page 4-1): This section states: "The average arsenic

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[16] http://www.msha.gov/drs/drshome.htm

concentration of the Pandora DRA samples does not pose risks, but it is possible that local portions of the La Sal Complex DRAs could present potential direct contact risks during the post-reclamation period and may require mitigation during reclamation."

- Appendix F should have explained why there is a potential direct contact risks associated with arsenic during post-reclamation period but not during the pre-reclamation period.

Appendix I — Weed Management Plan

51. Appendix I — Weed Management Plan: Denison plans to apply herbicides to control noxious and invasive weed species in the vicinity of the waste rock piles.

- Appendix I should have identified the pesticides and herbicides will be used.

- Appendix I should have assessed the potential impacts to surface and ground water and flora and fauna from the application of pesticides and herbicides at the mine sites.

- Appendix I should have included alternative plan for weed removal that did not include the application of pesticides or herbicides.

Appendix J — La Sal Vegetation Survey

52. Appendix J — La Sal Vegetation Survey: The survey states that it was conducted for the purpose of establishing pre-mining vegetative ground cover.

- The La Sal Vegetation Survey, page 1, contains a table of 22 locations on the edges of existing mine sites. The results are shown in a table identified as "Rim Mine Vegetation Survey." The Rim Mine in not part of the La Sal Mines Complex. Perhaps the table was mislabeled. This should be clarified.

- The photographs and maps of the Vegetation Survey do not include areas with trees and shrubs have been impacted and will be impacted by any additional vent hole construction and exploration drilling.

- Appendix J should have included maps and photographs of all vegetation types that have been or will be impacted by La Sal Mines Complex surface disturbances.

53. Other:

- The POA should have included a list of preparers and their educational and technical qualifications.

- The POA should have included the referenced material or information regarding how that material can be accessed.

IV. REGULATORY COMPLIANCE

The November 2010 Plan of Operations Amendment did not meet the requirements in 43 C.F.R. § 3809.401 for a Plan of Operations, based on the following:

a. As outlined above, the POA was deficient in a number of respects. There was missing and incomplete information and statements that were not based on facts.

b. The POA did not include a monitoring plan that would monitor the emission of radionuclides (gases and particulates) from the waste rock piles, stockpiled ore, ore pads, fugitive dust, contaminated soils, and ore dumping and loading.

c. The POA did not include a monitoring plan for the transport of leachates into soils and groundwater from the waste rock dumps, ore pads, and other areas of the mine sites.

d. The POA did not include a monitoring plan that would monitor the emission of radioactive and non-radioactive particulates from the mine portals and intake and exhaust vents.

e. The POA did not include a monitoring plan to determine the actual amount and kind of radioactivity that is received at or is present inside the nearest residences, school, or places of human activity in the vicinity of the La Sal Mine Complex.

f. The POA did not include a monitoring plan for monitoring the radon releases from the mine portals and intake and exhaust vents.

g. The POA made unsubstantiated assumptions regarding the specific mine facilities and activities that had been included in past Plans of Operations.

h. The POA did not include all previous Plans of Operations and other mine modification requests.

i. The POA did not include essential base-line data, such as pre-mining vegetation data for all areas that will be subject to reclamation.

j. The POA did not provide sufficient information to determine the cumulative impacts of the proposed expansion of the La Sal Mines Complex.

k. The POA did not include data on the La Sal Mines Complex compliance with other state and federal health and safety regulations.

l. The POA did not provide a reasonable time line for the re-establishment of 70% of the pre-mining.

m. The POA did not provide sufficient data on the geohydrology of the La Sal area and the of the areas underground that will be impacted by the mines' expansion.

V. CONCLUSION

1. We request that the Agencies consider the Environmental Protection Alternative in the La Sal Mines Complex NEPA review.

2. We request that the Agencies immediately commence an EIS process at this time and not wait until the finalization of the EA.

3. We request that the Agencies provide a 60-day comments period on the draft NEPA document. A 30-day comment period will not provide sufficient time to review the draft NEPA document and its attachments and references and develop informed comments for submittal to the Agencies.