3.24 Hazardous Materials and Solid Waste

3.24.1 Affected Environment

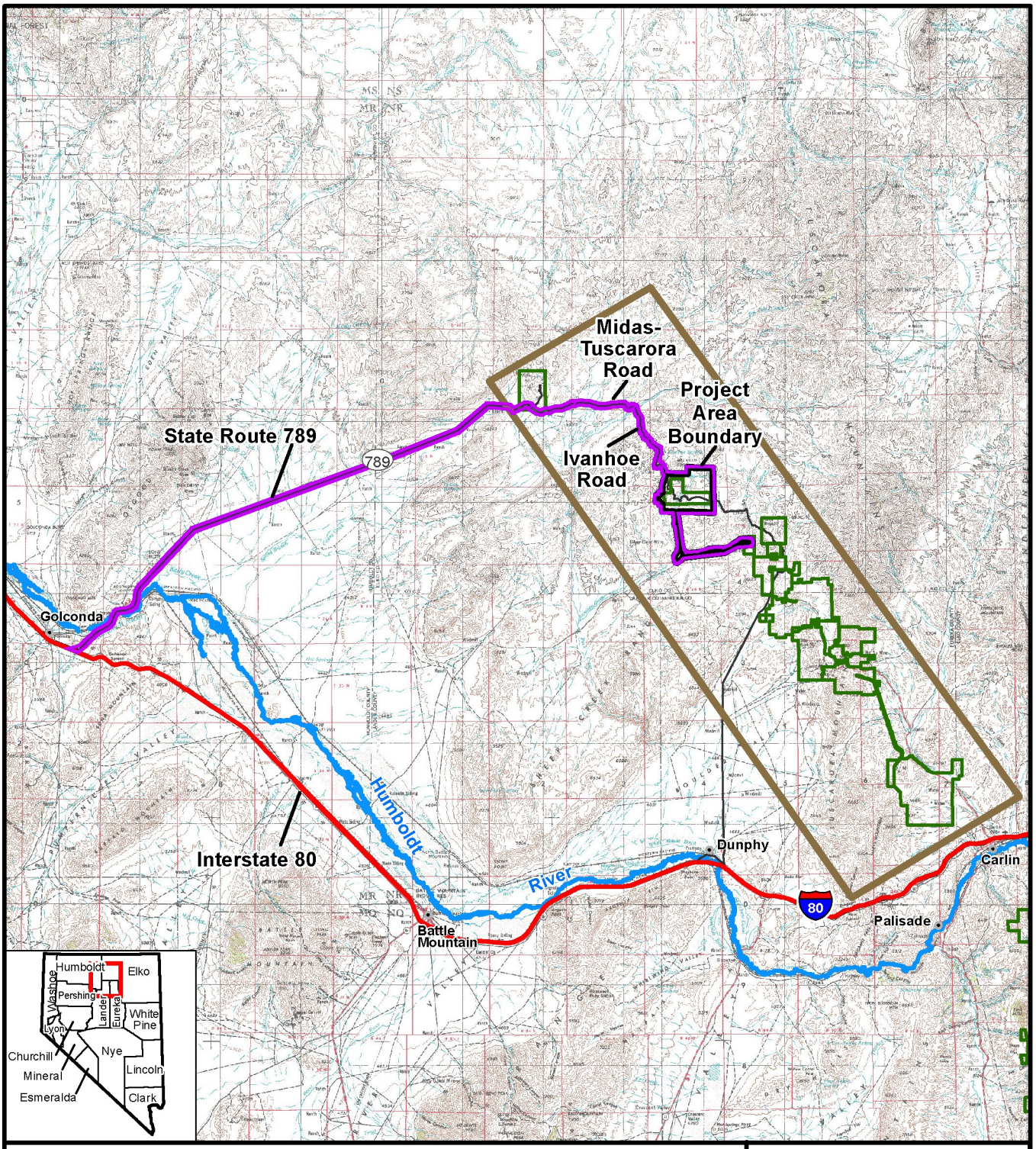
3.24.1.1 Introduction

The affected environment for hazardous materials includes air, water, soil, and biological resources that potentially could be affected by an accidental release of hazardous materials during transportation to and from the mine or during storage and use at the mine. The study area for direct and indirect impacts for hazardous materials and solid waste encompasses the project boundary and the transportation route for hazardous materials and wastes from Interstate 80 (I-80) and including State Route (SR) 789, the Midas-Tuscarora Road, and Ivanhoe Road (**Figure 3.24-1**). The cumulative effects study area (CESA) for hazardous materials and solid waste is shown in **Figure 3.24-1** and includes the aforementioned study area and the Carlin Trend north of I-80. The CESA extends from Newmont-Gold Quarry/South Operations Area Project in the south to the Midas Mine in the north to include mining and mineral exploration activity in the Carlin Trend. Past, present, and reasonably foreseeable future actions (RFFAs) in the CESA are described in Section 3.2. Mining and mineral exploration projects in the Carlin Trend are shown in **Figure 3.2-1**. The CESA chosen provides an adequate area of analysis in which to compare the relative effects of the Proposed Action to overall mining activity in the Carlin Trend. Within the CESA, there are projects and activities not related to mining such as community development, oil, gas, and geothermal leases, and wildfire management programs, as described in Sections 3.2.1, Paste and Present Actions, and 3.2.2, Reasonably Foreseeable Future Actions.

3.24.1.2 Regulatory Definitions of Hazardous Materials

"Hazardous materials," which are defined in various ways under a number of regulatory programs, can represent potential risks to both human health and the environment when not properly managed. The term hazardous materials includes the following materials that may be utilized or disposed of in conjunction with mining operations:

- Substances covered under Occupational Safety and Health Administration (OSHA) and Mine Safety and Health Administration (MSHA) Hazard Communication Standards (29 Code of Federal Regulations [CFR] 1910.1200 and 30 CFR 42): The types of materials that may be used in mining activities and that would be subject to these regulations would include almost all of the materials identified in Section 2.2.8, Hazardous Materials and Hazardous Waste Management.
- "Hazardous materials" as defined under United States Department of Transportation (USDOT) regulations at 49 CFR, Parts 170-177: The types of materials that may be used in mining activities and that would be subject to these regulations would include explosives, cement, fuels, some paints and coatings, and other chemical products.
- "Hazardous substances" as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and listed in 40 CFR Table 302.4. The types of materials that may contain hazardous substances that are used in mining activities and that would be subject to these requirements would include solvents; solvent-containing materials (e.g., paints, coatings, degreasers); acids; and other chemical products.
- "Hazardous wastes" as defined in the Resource Conservation and Recovery Act (RCRA) Procedures in 40 CFR 262 are used to determine whether a waste is a hazardous waste. The types of materials used in mining activities and that could be subject to these requirements could include liquid waste materials with a flash point of less than 140 degrees Fahrenheit, spent solvent containing wastes, corrosive liquids, and lab assay wastes. Hazardous wastes are regulated under Subtitle C of RCRA.



Legend

- Project Area Boundary
- Cumulative Effects Study Area
- Direct Effects Study Area
- Other Mine Plan Boundaries

N

0 5 10 Miles

Source: BLM 2009b.

Hollister Underground Mine Project EIS

Figure 3.24-1

Hazardous Materials Direct Effects Study Area and Cumulative Effects Study Area

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- Any “hazardous substances” or “extremely hazardous substances” as well as petroleum products such as gasoline, diesel, or propane, that are subject to reporting requirements if volumes on-hand exceed threshold planning quantities under Sections 311 and 312 of Superfund Amendments and Reauthorization Act (SARA): The types of materials that may be used in mining activities and that could be subject to these requirements would include fuels, coolants, acids, and solvent-containing products such as paints and coatings.
- Petroleum products defined as “oil” in the Oil Pollution Act of 1990: The types of materials used in mining activities and that would be subject to these requirements include fuels, lubricants, hydraulic oil, and transmission fluids.

In conjunction with the definitions noted above, the following lists provide information regarding management requirements during transportation, storage, and use of particular hazardous chemicals, substances, or materials:

- The SARA Title III List of Lists or the Consolidated List of Chemicals Subject to Emergency Planning and Community Right-to-Know Act and Section 112(r) of the Clean Air Act.
- The USDOT listing of hazardous materials in 49 CFR 172.101.

Certain types of materials, while they may contain potentially hazardous constituents, are specifically exempt from regulation as hazardous wastes. Used oil, for example, may contain toxic metals, but would not be considered a hazardous waste unless it meets certain criteria. Other wastes that might otherwise be classified as hazardous are managed as “universal wastes” and are exempted from hazardous waste regulation as long as those materials are handled in ways specifically defined by regulation. An example of a material that could be managed as a universal waste is used lead-acid batteries. As long as lead-acid batteries are recycled appropriately, requirements for hazardous waste do not apply.

Pursuant to regulations promulgated under CERCLA, as amended by SARA, release of a reportable quantity of a hazardous substance to the environment must be reported within 24 hours to the National Response Center (40 CFR Part 302). The Nevada Administrative Code (NAC) (445A.347) also requires immediate reporting of a release of a reportable quantity of a hazardous substance to the Nevada Division of Environmental Protection (NDEP). In addition, under the State of Nevada Water Pollution Control Permit program, all releases of a reportable quantity must be reported as soon as possible, but not later than 24 hours after the event, to the NDEP Bureau of Corrective Actions. Nevada regulates the storage and handling of certain defined “highly hazardous substances” under NAC 459.952-459.9542. The Nevada State Fire Marshall requires that storage of hazardous materials above certain specified thresholds requires a permit under NAC 459.9918 (Nevada State Fire Marshal and State Emergency Response Commission 2008).

3.24.1.3 Project-related Hazardous Materials

The hazardous materials to be used in the current exploration and proposed mining operations are described in Section 2.2.8, Hazardous Materials and Hazardous Waste, and in **Table 2-2**. The types of materials are briefly summarized below:

- Diesel fuel, gasoline, oils, greases, anti-freeze, and solvents used for equipment operation and maintenance;
- Sulfuric acid, calcium hydroxide, sulfuric acid, flocculants, lime, and antiscalants used for water treatment;
- Ammonium nitrate and high explosives used for blasting; and
- Wastes classified as hazardous waste.

3.24.1.4 Regulatory Definition of Solid Waste

Solid waste consists of a broad range of materials that include garbage, refuse, wastewater treatment plant sludge, non-hazardous industrial waste, and other materials (solid, liquid, or contained gaseous substances) resulting from industrial, commercial, mining, agricultural, and community activities (U.S. Environmental Protection Agency [USEPA] 2006). Solid wastes are regulated under different subtitles of RCRA and include hazardous waste (discussed in the previous section) and non-hazardous waste. Non-hazardous wastes are regulated under RCRA Subtitle D. In Nevada, solid waste rules are found in the NAC. Disposal of solid waste is regulated under NAC 444.570 444.7499; disposal of hazardous waste is regulated under NAC 444.850-444.8746.

3.24.1.5 Solid Wastes Generated from Mining Operations

The solid wastes at the Hollister Mine would include hazardous waste, solid non-hazardous waste, and sanitary waste. The facility generates hazardous waste in amounts to be considered a Conditionally Exempt Small Quantity Generator under the RCRA waste generator rules (less than 200 pounds per month) (Rodeo Creek Gold Inc [RCG] 2009a). Hazardous waste would consist of "universal wastes," which include florescent bulbs, aerosol paint can residue and filters, and used batteries including mine lights, NiCad and lithium types. Solid non-hazardous materials (for example, construction debris and trash) would be disposed at an off-site licensed facility. Appropriate materials (used oil, batteries, and antifreeze) would be recycled. Sanitary wastes would be dealt with by the existing septic system at the East Pit and new a septic system would be installed to service the proposed mine office, dry, and warehouse.

3.24.2 Environmental Consequences

3.24.2.1 Proposed Action

Under the Proposed Action the transport, storage, use, and disposal of hazardous materials for mine operations would continue for the life of mine (approximately 20 years) and for an additional 3 years for site closure and reclamation. If some of the chemicals identified for use during the life of the proposed expansion were to enter the environment in an uncontrolled manner, there could be associated direct or indirect adverse effects.

<u>Transportation</u>

All hazardous substances would be transported by commercial carriers or vendors in accordance with the requirements of Title 49 of the CFR. Carriers would be licensed and inspected as required by the Nevada DOT and USDOT. Tanker trucks would be inspected and would have a Certificate of Compliance issued by the Nevada Motor Vehicle Division. These permits, licenses, and certificates are the responsibility of the carrier. Title 49 of the CFR requires that all shipments of hazardous substances be properly identified and placarded. Shipping papers must be accessible and must include information describing the substance, immediate health hazards, fire and explosion risks, immediate precautions, firefighting information, procedures for handling leaks or spills, first aid measures, and emergency response telephone numbers.

A large-scale release of fuel or reagent would have implications for public health and safety. The location of the release would again be the primary factor in determining its importance. A release in a populated area could have effects ranging from simple inconvenience during cleanup to potential loss of life if an explosion and fire were involved. As shown in **Table 3.24-1**, the probability of a release anywhere along the transportation route is very small; the probability of a release within a populated area is smaller; and the probability of a release involving an injury or fatality is smaller still. The travel distance in **Table 3.24-1** is based on a 60-mile trip from I-80 near Golconda to SR 789 and the Midas-Tuscarora Road to Ivanhoe Road and then to the Hollister Site. Transportation along I-80 is not considered in the analysis because of the overwhelming number of loads being transported on the

interstate. Sulfuric acid is used in the analysis because it would be the hazardous material of greatest volume to be transported and used at the mine site. Diesel would initially be the most used hazardous material, but would be used in lesser (approximately 40 percent less) volumes than shown in **Table 2-2** when the largest existing diesel generators are replaced by utility-supplied electrical power. Blasting agents such as ammonium nitrate and high explosives use would increase approximately 50 percent over current usage.

Table 3.24-1 Probability of a Release of Sulfuric Acid

Material	Annual Use (gallons)	Shipment Quantity (gallons)	Number of Shipments[1]	Distance (miles)	Incident Rate per Mile[2]	Calculated Number of Incidents Over the 20-year Life-of-Mine[3]
Sulfuric Acid	38,400	4,000	200	12,000	.0000004	0.005

[1] 20-year life-of-mine (10 shipments per year X 20 years).

[2] Table 25, page 4-13 and Table 33, p. 5-4, Battelle (2001), includes accidents and en-route leaks, but not loading/unloading incidents.

[3] Number of incidents = (distance) X (incident rate).

Storage and Use

RCG has developed a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR Part 112, which describes the required level of containment and safety measures associated with storage, handling, and spill clean-up of oil (includes but not limited to petroleum, fuels, sludge, used oil, and mineral oil) (RCG 2009a, 2008a). Operations conducted in accordance with the SPCC Plan would ensure that impacts from spills would be minimized and the spilled materials contained and removed. Per the SPCC Plan, RCG also would have the necessary spill containment and cleanup equipment available at the site, and personnel would be able to quickly respond.

All hazardous substances would be handled in accordance with applicable MSHA regulations (Title 30 CFR). The hazardous materials to be used under the Proposed Action would be handled as recommended on the manufacturers' material safety data sheets. Based on the facility's design features and the operational practices in place, the probability of a major release occurring at the site during the life of the proposed mine expansion would be low.

Disposal

All hazardous waste generated at the mine would be transported to licensed disposal facilities in accordance with applicable federal and state regulations. Other solid wastes would be disposed of appropriately depending upon waste type.

Potential Effects of a Release

The environmental effects of a release would depend on the material released, the quantity released, and the location of the release. Potential releases could include a small amount of diesel fuel spilled during transfer operations at the mine site to the loss of several thousand gallons of diesel fuel or reagent into a riparian drainage.

The release of a hazardous material or waste into a sensitive area (such as stream, wetland, or populated area) is judged to be very unlikely. Depending on the material released, the amount released, and the location of the release, an accident resulting in a release could affect soils, water, biological resources, and human health.

Response to a Release

All spills, including transportation and loading/unloading spills occurring on site, would be cleaned up as soon as possible. If a spill exceeds the reportable quantity, it would be reported to the NDEP, USEPA, National Response Center, Bureau of Land Management (BLM), and the county Emergency Response Coordinator.

In the event of a release en-route to the mine site, the transportation company would be responsible for response and cleanup. Law enforcement and fire protection agencies also may be involved to initially secure the site and protect public safety. Hazardous material transporters are required to maintain an emergency response plan which details the appropriate response, treatment, and cleanup for a material spilled onto land or into water. For example, a release of sulfuric acid could require neutralizing the spill with lime, flushing the area with water, or removing contaminated soil.

For on-site spills, the procedures outlined in the SPCC Plan would be used to respond to petroleum and fuel spills. Specific procedures would be developed for other hazardous materials stored and used at the mine. Any cleanup would be followed by appropriate restoration of the disturbed area, which could include replacing removed soil, seeding the area to prevent erosion, and the return of the land to its previous use.

3.24.2.2 Mud Springs Road Transmission Line Alternative

There would be no difference in hazardous material use and transportation or solid waste generation under this alternative as compared to the Proposed Action. Therefore, the potential impacts would be the same as described for the Proposed Action.

3.24.2.3 Mud Springs Waste Rock Storage Facility Alternative

Under the Mud Springs Waste Rock Storage Facility (WRSF) Alternative, there would be no difference in hazardous materials use and transportation or solid waste generation under this alternative as compared to the Proposed Action. Therefore, the potential impacts would be the same as described for the Proposed Action.

3.24.2.4 Backfill Alternative

The Backfill Alternative would result in a slight increase (600 gallons) in overall fuel use. The potential impacts would be the same as described for the Proposed Action.

3.24.2.5 No Action Alternative

The present transportation and use of hazardous material and generation and disposal of solid waste would continue as a result of exploration activities under current authorizations until such authorization expires.

3.24.3 Cumulative Impacts

The CESA is shown in **Figure 3.24-1**. Past, present, and RFFAs are described in Section 3.2. The transportation and use of hazardous materials and the generation and disposal of solid waste would represent a small increase within the study area. For example, the usage of diesel fuel for the Proposed Action is estimated to be about 306,000 gallons per year at the Hollister Site, which amounts

to less than 1 percent of the 62 million gallons of annual diesel fuel combined consumption by Barrick and Newmont at their respective mining operations in the Carlin Trend (BLM 2010d,e). Based on the foregoing, the relatively small amount of hazardous material use expected for the Proposed Action at the Hollister Site as compared to use in the entire CESA, would only represent a very small increase in the risk of transportation spills and spills in the CESA. Given that ore processing would not take place in the project area, the use of hazardous materials would be much less than other mines in the area CESA and no cyanide would be transported or used at the mine site.

The cumulative impacts for the Mud Springs Road Transmission Line, Mud Springs WRSF, and Backfill alternatives would be the same as described for the Proposed Action.

3.24.4 Potential Monitoring and Mitigation Measures

The transportation and use of hazardous materials and the generation and disposal of solid wastes are regulated by federal and state regulations and should be sufficient to provide protection to the environment and public health. Therefore, no additional mitigation measures or monitoring is recommended.

3.24.5 Residual Impacts

Residual adverse effects from the use of hazardous materials under the Proposed Action would depend on the substance, quantity, timing, location, and response involved in the event of an accidental spill or release. Operation in compliance with applicable regulations and in accordance with the facility's SPCC Plan as well as the prompt cleanup of potential spills and releases would minimize the potential of residual adverse effects due to accidental spills or releases of hazardous materials.